SEMICONDUCTOR HANDBOOK

PART 1 TRANSISTORS

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SEMICONDUCTOR HANDBOOK

PART 1 TRANSISTORS

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INLEIDING

Het Semiconductor Handbook (Transistoren) bevat de technische gegevens van de meeste Europese, Amerikaanse en Japanse transistoren.
De transistoren zijn alfa/numeriek gerangschikt waardoor het vinden van een bepaald type zeer eenvoudig is en tevens een index overbodig maakt.
Onderaan elke pagina zijn de behuizingen opgenomen van de typen die op de desbetreffende pagina staan.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

VERKLARING VAN DE KOLOMMEN

1: Type
- red = rood
- yel = geel
- grn = groen
- whi = wit
- gre = grijs
- blu = blauw
- vio = violet

2: Fabrikant
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanium
S = Silicium

5: V_{cbo} = collector-basis spanning bij open emittor
6: V_{ceo} = collector-emittor spanning bij open basis
7: V_{ebo} = emittor-basis spanning bij open collector
8: I_c = maxium collector stroom
9: P_{tot} = maxium collector dissipatie bij 25° C
10: T_j = maxium junctie temperatuur
11: h_{FE} = stroomversterkingsfactor voor grote signalen
12: V_{ce} = collector-emittor spanning waarbij h_{FE} is gemeten
13: I_c = colloctorstroom waarbij h_{FE} is gemeten
14: h_{fe} = stroomversterkingsfactor voor kleine signalen
15: V_{ce} = collector-emittor spanning waarbij h_{fe} is gemeten
16: I_c = collectorstroom waarbij h_{fe} is gemeten
17: f_T = grens frequentie
18: Rthj-a = warmte weerstand van junctie naar omgeving
19: Case = behuizing, nummers verwijzen naar de tekeningen onder aan de pagina
20: Use = toepassing
- 1 = laag frequent transistor
- 2 = laag frequent transistor voor groot vermogen
- 3 = hoog frequent transistor
- 4 = hoog frequent transistor voor groot vermogen
- 5 = schakel transistor
- 6 = speciaal TV type hoog frequent
- 7 = speciaal TV type laag frequent
- 8 = speciaal computer type
- 9 = chopper transistor

EINLEITUNG

Dieses Transistor-Handbuch enthält ausführliche technische Informationen über die meisten europäischen, amerikanischen und japanischen Transistortypen. Die Transistoren sind in alphabetisch/numerischer Reihenfolge aufgeführt.
Die Transistorgehäuse sind jeweils unten auf jeder Seite zusammengestellt.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ABKÜRZUNGEN

1: Typ
- red = rot
- yel = gelb
- grn = grün
- whi = weiss
- gre = grau
- blu = blau
- vio = violett

2: Hersteller
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanium
S = Silizium

5: V_{cbo} = Kollektor-Basis-Spannung bei offenem Emitterkreis
6: V_{ceo} = Kollektor-Emitter-Spannung bei offenem Basiskreis
7: V_{ebo} = Emitter-Basis-Spannung bei offenem Kollektorkreis
8: I_c = maximaler Kollektorstrom
9: P_{tot} = maximale Kollektor-Verlustleistung bei 25° C
10: T_j = maximale Sperrschichttemperatur
11: h_{FE} = Grosssignal- oder Gleichstrom-Stromverstärkung
12: V_{ce} = Kollektor-Emitter-Spannung bei der h_{FE} gemessen wurde
13: I_c = Kollektorstrom bei dem h_{FE} gemessen wurde
14: h_{fe} = Kleinsignal - Stromverstärkung
15: V_{ce} = Kollektor-Emitter-Spannung bei der h_{fe} gemessen wurde
16: I_c = Kollektorstrom bei dem h_{fe} gemessen wurde
17: f_T = Grenzfrequenz
18: Rthj-a = Thermischer Widerstand zwischer Sperrschicht und Umgebung
19: Case = Gehäuse, die Numerierung entspricht den Zeichnungen unten auf der Seite (Massangaben in mm)
20: Use = Anwendungen
- 1 = Niederfrequenz (NF)-Transistor
- 2 = NF-Transistor für hohe Leistung
- 3 = Hochfrequenz (HF)-Transistor
- 4 = HF-Transistor für hohe Leistung
- 5 = Schalttransistor
- 6 = spezieller HF-Typ für Fernsehen
- 7 = spezieller NF-Typ für Fernsehen
- 8 = spezieller Computer-Typ
- 9 = Zerhacker-Transistor

INTRODUCTION

This Transistor Handbook is a comprehensive source of technical information on most of the European, American and Japanese transistors, which are listed in alphabetical/numerical fashion. A summary of the transistor cases is given at the bottom of each page.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ABBREVIATIONS

1: Type
- red = red
- yel = yellow
- grn = green
- whi = white
- gre = grey
- blu = blue
- vio = violet, purple

2: Manufacturer
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanium
S = Silicon

5: V_{cbo} = collector to base voltage with emitter open circuit
6: V_{ceo} = collector to emitter voltage with base open circuit
7: V_{ebo} = emitter to base voltage with collector open circuit
8: I_c = maximum collector current
9: P_{tot} = maximum collector dissipation at 25° C
10: T_j = maximum junction temperature
11: h_{FE} = large signal or D.C. current gain
12: V_{ce} = collector to emitter voltage where h_{FE} has been measured
13: I_c = collector current where h_{FE} has been measured
14: h_{fe} = small signal current gain
15: V_{ce} = collector-emitter voltage where h_{fe} has been measured
16: I_c = collector current where h_{fe} has been measured
17: f_T = cut-off frequency
18: Rthj-a = thermal resistance from junction to ambient
19: Case = case, numbers refer to drawings at the bottom of the page (dimensions in mm)
20: Use = applications
- 1 = low frequency transistor
- 2 = high power, low frequency transistor
- 3 = high frequency transistor
- 4 = high power, high frequency transistor
- 5 = switching transistor
- 6 = special high frequency T.V.-type
- 7 = special low frequency T.V.-type
- 8 = special computer type
- 9 = chopper transistor

INTRODUÇÃO

O livro "Transistor Handbook" contem informações técnicas de fácil assimilação sobre a maioria dos transistores Europeus, Americanos e Japoneses, os quais estão classificados por ordem alfabética/númerica. No fim de cada página, encontra-se um sumário relacionado com transistores especiais.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ABREVIATURAS

1: Tipo
- red = vermelho
- yel = amarelo
- grn = verde
- whi = branco
- gre = cinzento
- blu = azul
- vio = roxo, roxo avermelhado

2: Fabricantes
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germânio
S = Silício

5: V_{cbo} = voltagem máxima de circuito entre colector-base (com relação ao emissor)
6: V_{ceo} = voltagem máxima de circuito entre colector-emissor (com relação à base)
7: V_{ebo} = voltagem máxima de circuito entre emissor-base (com relação ao colector)
8: I_c = intensidade máxima de corrente no colector
9: P_{tot} = potência máxima de dissipação no colector, até 25° C
10: T_j = temperatura máxima de junção
11: h_{FE} = corrente de ganho e de sinal em D.C.
12: V_{ce} = voltagem máxima entre colector-emissor com relação, ao ganho de sinal
13: I_c = intensidade de corrente máxima com relação ao ganho de sinal
14: h_{fe} = corrente de ganho (factor de amplificação) com relação ao sinal
15: V_{ce} = voltagem entre o colector e o emissor com sinal
16: I_c = intensidade máxima de corrente no colector com sinal
17: f_T = frequência minima e máxima
18: Rthj-a = resistência térmica de junção ambiente
19: Case = caso, números relativos aos desenhos apresentados no fim da página (dimensões en mm)
20: Use = Aplicações
- 1 = transistor de baixa frequência
- 2 = grande potência, transistor de baixa frequência
- 3 = transistor de altal frequência
- 4 = grande potência, transistor de alta frequência
- 5 = suporte de transistor
- 6 = alta frequência - tipo especial para T.V.
- 7 = baixa frequência - tipo especial para T.V.
- 8 = tipo especial para computador
- 9 = transistor de interrupção

INTRODUCCION

Este Manual de transistores es una fuente axhaustiva de información técnica referente a la mayoría de los transistores europeos, americanos y japoneses, relacionados en orden alfanumérico. Al final de cade página se da un resumen de las cápsulas de los transistores.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ABREVIATURAS

1: Tipo
- red = rojo
- yel = amarillo
- grn = verde
- whi = blanco
- gre = gris
- blu = azul
- vio = violeta, púrpura

2: Fabricante
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = germanio
S = silicio

5: V_{cbo} = tensión colector-base con emisor en circuito abierto
6: V_{ceo} = tensión colector-emisor con base en circuito abierto
7: V_{ebo} = tensión emisor-base con colector en circuito abierto
8: I_c = corriente máxima de colector
9: P_{tot} = disipación máxima de colector en 25 °C.
10: T_j = temperatura máxima de la unión
11: h_{FE} = ganancia de corriente con señal grande o c.c.
12: V_{ce} = tensión colector-emisor con que se ha medido h_{FE}
13: I_c = corriente de colector con que se ha medido h_{FE}
14: h_{fe} = ganancia de corriente con señal pequeña
15: V_{ce} = tensión colector-emisor con que se ha medido h_{fe}
16: I_c = corriente de colector con que se ha medido h_{fe}
17: f_T = frecuencia de corte
18: Rthj-a = resistencia térmica de la unión al ambiente
19: Case = cápsula, el número se refiere al dibujo de la parte inferior de la página (dimensiones en mm).
20: Use = aplicaciones
- 1 = transistor de baja frecuencia
- 2 = transistor de potencia en baja frecuencia
- 3 = transistor de alta frecuencia
- 4 = transistor de potencia en alta frecuencia
- 5 = transistor de conmutación
- 6 = tipo especial de alta frecuencia para TV
- 7 = tipo especial de baja frecuencia para TV
- 8 = tipo especial para computador
- 9 = transistor parcializador

INTRODUZIONE

Questo Manuale costituisce una inesauribile sorgente di informazioni tecniche sulla maggior parte dei transistori europei, americani e giapponesi che vengono elencati alfabeticamente e numericamente. Un sommario completo dei transistori è dato alla fine di ogni pagina.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

ABBREVIAZIONI IMPIEGATE

1: Tipo
- red = rosso
- yel = giallo
- grn = verde
- whi = bianco
- gre = grigio
- blu = blu
- vio = viola, porpora

2: Costruttori
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanio
S = Silicio

5: V_{cbo} = tensione collettore-base con circuito aperto del-l'emettitore
6: V_{ceo} = tensione collettore-emettitore con circuito base aperto
7: V_{ebo} = tensione emettitore-base con circuito aperto del collettore
8: I_c = corrente massima del collettore
9: P_{tot} = dissipazione massima del collettore a 25° C
10: T_j = temperatura di massima giunzione
11: h_{FE} = guadagno di corrente c.c. o grande segnale
12: V_{ce} = tensione dal collettore all'emittitore ove h_{FE} è stato misurato
13: I_c = corrente di collettore ove h_{FE} è stato misurato
14: h_{fe} = guadagno di corrente di piccolo segnale
15: V_{ce} = tensione collettore all'emittitore ove h_{FE} è stato misurato
16: I_c = corrente di collettore ove h_{FE} è stato misurato
17: f_T = frequenza di cut-off
18: Rthj-a = resistenza termica dalla giunzione all'ambiente
19: Case = numeri di riferimento dei disegni a piè di pagina (dimensioni in mm.)
20: Use = impieghi
- 1 = transistor di bassa frequenza
- 2 = transistor di bassa frequenza, alta potenza
- 3 = transistor di alta frequenza
- 4 = transistor di alta frequenza, alta potenza
- 5 = transistor interruttore
- 6 = tipo speciale per alta frequenza TV
- 7 = tipo speciale per bassa frequenza TV
- 8 = tipo speciale per computer
- 9 = transistor chopper

INTRODUKSJON

Denne Transistor Håndbok er en omfattende kilde av teknisk informasjon om de fleste europeiske, amerikanske og japanske Transistorer, som er oppfört i alfabetisk/numerisk rekkefölge. En oppsumering av Transistor-kassene er gitt nederst på hver side.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. .. max	V_{ce} (V)	I_c (mA)	h_{fe} min. .. max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

FORKORTELSER:

1: Type
- red = röd
- yel = gul
- grn = grönn
- whi = hvit
- gre = grå
- blu = blå
- vio = fiolett, purpur

2: Fabrikanter
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanium
S = Silicon

5: V_{cbo} = Kollektor å basere voltspenning med emitter åpen strömkrets
6: V_{ceo} = kollektor å emittere voltspenning med basis åpen strömkrets
7: V_{ebo} = emitter å basere voltspenning med kollektor åpen strömkrets
8: I_c = maksimum kollektor ström
9: P_{tot} = maksimum kollektor tap ved 25° C
10: T_j = maksimum koplings temperatur
11: h_{FE} = stort signal eller D.C. strömöking
12: V_{ce} = kollektor å emmitere voltspenning hvor h_{FE} er blitt målt
13: I_c = kollektor ström hvor h_{FE} er blitt målt
14: h_{fe} = lite signal strömöking
15: V_{ce} = kollektor-emitter voltspenning hvor h_{fe} er blitt målt
16: I_c = kollektor ström hvor h_{fe} er blitt målt
17: f_T = avledet frekvens
18: Rthj-a = varmemotstand fra kopling til omsluttning
19: Case = kasse, nummerne refererer til tegninger nederst på siden. (dimensjoner i mm.)
20: Use = bruksanvisning
- 1 = lavfrekvens transistor
- 2 = höy styrke, lavfrekvens transistor
- 3 = höyfrekvens transistor
- 4 = Höy styrke, höfrekvens transistor
- 5 = omkopling transistor
- 6 = spesiell höyfrekvens T.V.type
- 7 = spesiell lavfrekvens T.V.type
- 8 = spesiell computer type
- 9 = kontaktbryter transistor

INTRODUCTION

Ce "Transistor Handboock" est une source d'information technique de la plupart, des transistors Européens, Américains, Japonais, classés en liste Alpha numérique. Le résumé des différents boitiers est donn à la fin de chaque page.

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	Ic (mA)	P tot (mW)	Tj (°C)	h_{FE} min.... max	V_{ce} (V)	Ic (mA)	h_{fe} min.... max	V_{ce} (V)	Ic (mA)	fT (MHz)	(°C/W)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

EXPLICATION

1: Types
- red = rouge
- yel = jaune
- grn = vert
- whi = blanc
- gre = gris
- blu = bleu
- vio = violet

2: Fabricants
- At = Ates
- Fe = Ferranti
- Fa = Fairchild
- Ge = General Electric
- It = Intermetall
- Mo = Motorola
- Ns = National Semiconductor
- Ph = Philips
- Rc = R.C.A.
- Si = Siemens
- Se = SESCOSEM
- So = Solitron
- Sp = Sprague
- Sy = Sylvania
- Te = Telefunken
- To = Toshiba
- Tr = Transitron
- Tx = Texas Instruments
- Wb = Westinghouse Brake and Signal
- We = Western Electric
- Wh = Westinghouse Electric Corp.

3: P = PNP
N = NPN

4: G = Germanium
S = Silicium

5: V cbo = voltage collecteur à base en circuit ouvert
6: V ceo = voltage collecteur à émetteur en circuit ouvert
7: V ebo = voltage émetteur à base en circuit ouvert
8: Ic = courant collecteur maximum
9: P tot = dissipation maximum collecteur à 25° C
10: T j = température maximum de jonction
11: h_{FE} = signal large ou gain en courant continu
12: V ce = voltage collecteur à émetteur quand h_{FE} à été mesuré
13: Ic = courant collecteur quand h_{FE} à été mesuré
14: h_{fe} = gain de courant petit signal
15: V ce = voltage collecteur émetteur quand h_{fe} à été mesuré
16: Ic = courant collecteur quand h_{fe} à été mesuré
17: f T = fréquence de coupure
18: Rthj-a = résistance thermique
19: Case = boitier No se référant au dessin à la fin de la page
20: Use = applications
- 1 = transistor basse fréquence
- 2 = transistor basse fréquence de puissance
- 3 = transistor haute fréquence
- 4 = transistor haute fréquence de puissance
- 5 = transistor de commutation
- 6 = transistor haute fréquence T.V.
- 7 = transistor basse fréquence T.V.
- 8 = transistor spécial pour calculateur
- 9 = transistor "Chopper"

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
AC 107	Ph	P	G	15			10	80	75				35.....160	5	0,3	2		20	1
AC 116 yel	Te	P	G	30	18	12	200	225	90				55.....95	6	4		450	43	1
AC 116 grn	Te	P	G	30	18	12	200	225	90				85.....140	6	4		450	43	1
AC 117	Te	P	G	32	18	10	1A	1,1W	90	40....115	2	150					250	43	2
AC 121/IV	Si	P	G	20	20	10	300	900	90	30.....60		100				1,5	300	1	1
AC 121/V	Si	P	G	20	20	10	300	900	90	50....100		100				1,5	300	1	1
AC 121/VI	Si	P	G	20	20	10	300	900	90	75....150		100				1,5	300	1	1
AC 121/VII	Si	P	G	20	20	10	300	900	90	125...250		100				1,5	300	1	1
AC 122 red	Te	P	G	30	18	12	200	225	90				40.....65	6	2		500	43	1
AC 122 yel	Te	P	G	30	18	12	200	225	90				55.....95	6	2		500	43	1
AC 122 grn	Te	P	G	30	18	12	200	225	90				85.....140	6	2		500	43	1
AC 122 vio	Te	P	G	30	18	12	200	225	90				130....200	6	2		500	43	1
AC 122 whi	Te	P	G	30	18	12	200	225	90				170....300	6	2		500	43	1
AC 122/30 red	Te	P	G	45	32	12	200	225	90				40.....65	6	2		500	43	1
AC 122/30 yel	Te	P	G	45	32	12	200	225	90				55.....95	6	2		500	43	1
AC 122/30 grn	Te	P	G	45	32	12	200	225	90				85.....140	6	2		500	43	1
AC 122/30 vio	Te	P	G	45	32	12	200	225	90				130....200	6	2		500	43	1
AC 122/30 whi	Te	P	G	45	32	12	200	225	90				170....300	6	2		500	43	1
AC 123 yel	Te	P	G	45	32	12	200	225	90				55.....95	6	4		450	44	1
AC 123 grn	Te	P	G	45	32	12	200	225	90				85.....140	6	4		450	44	1
AC 124	Te	P	G	45	32	10	1A	1,1W	90	40....170	2	150					250	43	2
AC 125	Ph	P	G	32	12	10	100	500	90	100	5	2				1,7	300	1	1
AC 126	Ph	P	G	32	12	10	100	500	90	65	5	2	130....300	5	2	2,3	300	1	1
AC 127	Ph	P	G	32	12	10	500	340	100	100		20				2,5	370	1	1
AC 127/01	Ph	P	G	32	12	10	500	340	100	100		20				2,5	250	2	1
AC 128	Ph	P	G	32	16	10	1A	1W	100	55....175		50				1,5	290	1	2
AC 128/01	Ph	P	G	32	16	10	1A	1W	100	55....175		50				1,5	180	2	2
AC 131	Te	P	G	30	18	10	1	750	90	40....120	2	150					300	43	2
AC 131/30	Te	P	G	45	32	10	1	750	90	40....120	2	150					300	43	2
AC 132	Ph	P	G	32	12	10	200	500	90	135		20				2	300	1	2
AC 132/01	Ph	P	G	32	12	10	200	500	90	135		20				2	190	2	2
AC 138	At	P	G	24		10	1,2A	1W	90				30.....250	6	5	1,5	300	1	1
AC 139	At	P	G	32		10	1A	1W	90	40....110		400				1,5	300	1	2
AC 141	At	P	G	32		10	1,2A	1W	90	40....110		400				3	300	1	2
AC 141B	At	P	G	25		10	1,2A	1W	90				30.....250	6	1	3	300	1	1
AC 141K	At	P	G	32		10	1,2A	1W	90	40....110		400				3	250	2	2
AC 142	At	P	G	32		10	1,2A	1W	90	40....110		400				1,5	300	1	2
AC 142K	At	P	G	32		10	1,2A	1W	90	40....110		400				1,5	250	2	2
AC 150 yel	Te	P	G	30	18	12	50	100	75				55.....95	6	2		500	43	1
AC 150 grn	Te	P	G	30	18	12	50	100	75				85.....140	6	2		500	43	1
AC 150 vio	Te	P	G	30	18	12	50	100	75				130....200	6	2		500	43	1
AC 150 whi	Te	P	G	30	18	12	50	100	75				180....300	6	2		500	43	1
AC 151/IV	Si	P	G	32	24	10	200	900	90				30.....60	1	2	1,5	300	1	1
AC 151/V	Si	P	G	32	24	10	200	900	90				50.....100	1	2	1,5	300	1	1
AC 151/VI	Si	P	G	32	24	10	200	900	90				75.....150	1	2	1,5	300	1	1
AC 151/VII	Si	P	G	32	24	10	200	900	90				125....250	1	2	1,5	300	1	1
AC 152/IV	Si	P	G	32	24	10	500	900	90				30.....60		100	1,5	300	1	1
AC 152/V	Si	P	G	32	24	10	500	900	90				50.....100		100	1,5	300	1	1
AC 152/VI	Si	P	G	32	24	10	500	900	90				75.....150		100	1,5	300	1	1
AC 153/V	Si	P	G	32		10	1A	1W	90	50....100		300				1,5	300	1	2
AC 153/VI	Si	P	G	32		10	1A	1W	90	75....150		300				1,5	300	1	2
AC 153/VII	Si	P	G	32		10	1A	1W	90	125...250		300				1,5	300	1	2
AC 153K/V	Si	P	G	32		10	1A	1W	90	50....100		300				1,5	250	2	2
AC 153K/VI	Si	P	G	32		10	1A	1W	90	75....150		300				1,5	250	2	2
AC 153K/VII	Si	P	G	32		10	1A	1W	90	125...250		300				1,5	250	2	2

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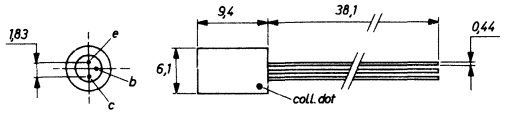

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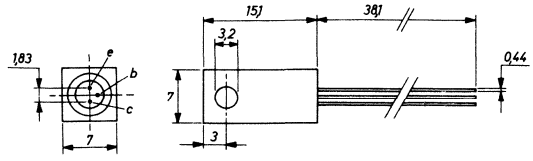

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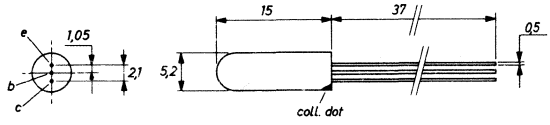

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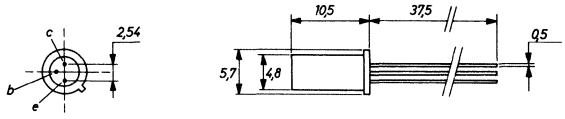

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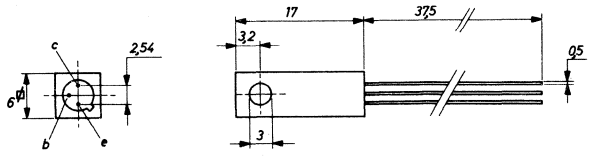
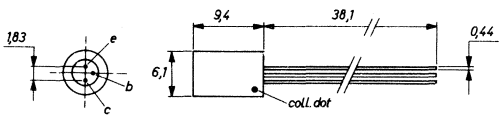


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
AC 162	Si	P	G	32	24	10	200	900	90				100		50	1,7	300	1	1
AC 163	Si	P	G	32	24	10	200	900	90				132		50	2,3	300	1	1
AC 170	Te	P	G	32		10	200	90	90	50....125	5	2	80.....170	6	2	1,7	500	43	1
AC 171	Te	P	G	32		10	200	90	90	65....180	5	2	130....300	6	2	2,3	500	43	1
AC 172	Ph	N	G	32	12	10	10	200	100				45.....110	5	0,5	2,5	370	1	1
AC 175	Te	N	G	25	18	10	1A	1,1W	90	165	6	50					250	43	1
AC 176	Si	N	G	32	18	10	1A	1W	90	50....250		300				3	300	1	1
AC 176K	Si	N	G	32	18	10	1A	1W	90	50....250		300				3	250	2	1
AC 178	Te	P	G	20	15	10	700	1W	90	220	2	150					250	43	1
AC 179	Te	N	G	20	15	10	700	1W	90	220	2	150					250	43	1
AC 186	Te	N	G	30	18	10	700	750	90	60....400	2	150					300	43	1
AC 187	Ph	N	G	25	15	10	1A	800	90	100...500	1	300				5	290	1	1
AC 187/01	Ph	N	G	25	15	10	1A	800	90	100...500	1	300				5	180	2	1
AC 187K	At	N	G	25	15	10	1A	1W	90	90....400		400				5	250	2	2
AC 188	Ph	P	G	25	15	10	1A	800	90	100...500	1	300				1,5	290	1	1
AC 188/01	Ph	P	G	25	15	10	1A	800	90	100...500	1	300				1,5	180	2	1
AC 188K	At	P	G	25	15	10	1A	1W	90	90....400		400				3	250	2	2
AC 191	At	P	G	32		25	250	430	90				30.....500	6	1	7	350	1	1
AC 192	At	P	G	32		10	250	430	90				30.....500	6	1	7	350	1	1
AC 193	At	P	G	32		10	1A	1W	90	90....400		400				3	300	1	2
AC 193K	At	P	G	32		10	1A	1W	90	90....400		400				3	250	2	2
AC 194	At	N	G	32		10	1A	1W	90	90....400		400				5	300	1	2
AC 194K	At	N	G	32		10	1A	1W	90	90....400		400				5	250	2	2
ACY 16	Te	P	G	40	30	10	400	800	85	40.....60	1	300	80	2	10		300	43	2
ACY 23/V	Si	P	G	32	30	26	200	900	90				50.....100	5	1	1,5	300	1	1
ACY 24	Te	P	G	70	50	30	300	530	85	50	5	30	30.....150	10	5		350	43	2
ACY 32/V	Si	P	G	32	30	16	200	900	90				50.....100	5	1	1,5	300	1	1
ACY 32/VI	Si	P	G	32	30	16	200	900	90				75.....150	5	1	1,5	300	1	1
ACY 33/VI	Si	P	G	32		10	1A	1W	90	75....150		300				1,5	300	1	1
ACY 33/VII	Si	P	G	32		10	1A	1W	90	125...250		300				1,5	300	1	1
ACY 33/VIII	Si	P	G	32		10	1A	1W	90	175...350		300				1,5	300	1	1
AD 130/III	Si	P	G	32	30	10	3A	30W	90	20.....40		1A				0,3		3	2
AD 130/IV	Si	P	G	32	30	10	3A	30W	90	30.....60		1A				0,3		3	2
AD 130/V	Si	P	G	32	30	10	3A	30W	90	50....100		1A				0,3		3	2
AD 131/III	Si	P	G	64	45	20	3A	30W	90	20.....40		1A				0,3		3	2
AD 131/IV	Si	P	G	64	45	20	3A	30W	90	30.....60		1A				0,3		3	2
AD 131/V	Si	P	G	64	45	20	3A	30W	90	50....100		1A				0,3		3	2
AD 132/III	Si	P	G	80	60	20	3A	30W	90	20.....40		1A				0,3		3	2
AD 132/IV	Si	P	G	80	60	20	3A	30W	90	30.....60		1A				0,3		3	2
AD 133/III	Si	P	G	50	20	10	15A	36W	100	20.....40		5A				0,3		14	2

1



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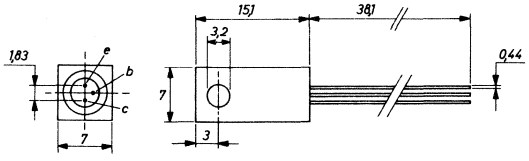

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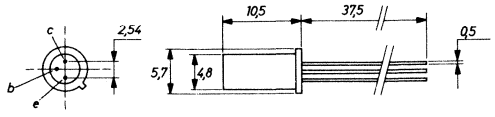

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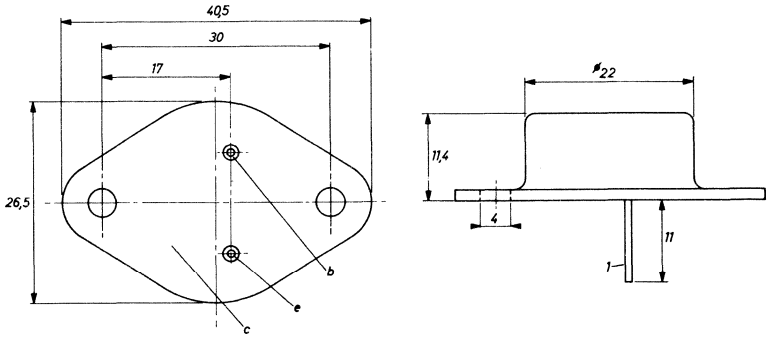

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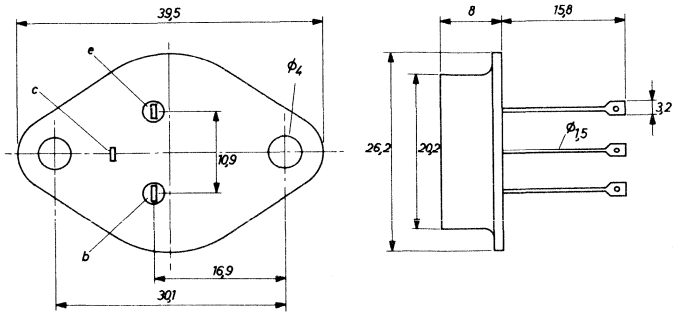

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
AD 133/IV	Si	P	G	50	20	10	15A	36W	100	30....60		5A				0,3		14	2
AD 133/V	Si	P	G	50	20	10	15A	36W	100	50...100		5A				0,3		14	2
AD 136/IV	Si	P	G	40	22	10	10A	11W	100	30....60		5A				0,3		6	2
AD 136/V	Si	P	G	40	22	10	10A	11W	100	50...100		5A				0,3		6	2
AD 139	Ph	P	G	32	16	10	1A	13W	100	30...110		1A						40	2
AD 142	At	P	G	80		10	10A	30W	100	30...200	2	1A				0,45		3	2
AD 143	At	P	G	40		10	10A	30W	100	30...200	2	1A				0,45		3	2
AD 143R	At	P	G	32	25	10	10A	30W	100	30...200	2	1A				0,45		3	2
AD 148/IV	Si	P	G	32	26	10	3,5A	13W	100	30....60		1A				0,46		40	2
AD 148/V	Si	P	G	32	26	10	3,5A	13W	100	50...100		1A				0,46		40	2
AD 149/IV	Si	P	G		30	20	3,5A	27W	100	30.....60		1A				0,50		3	2
AD 149/V	Si	P	G		30	20	3,5A	27W	100	50....100		1A				0,50		3	2
AD 150/IV	Si	P	G	32	30	10	3,5A	27W	100	30.....60		1A				0,45		3	2
AD 150/V	Si	P	G	32	30	10	3,5A	27W	100	50....100		1A				0,45		3	2
AD 152	Te	P	G	45	23	12	1A	6W	90	35....160	1	500						40	2
AD 155	Te	P	G	25	15	12	1A	6W	90	115	1	500						40	2
AD 161	Ph	N	G	32	20	10	1A	4W	100	80....320	1	500				3		40	2
AD 162	Ph	P	G	32	20	10	1A	6W	100	80....320	1	500				1,5		40	2
AD 163/II	Si	P	G	100	80	20	3A	30W	90	12,5...25		1A				0,35		3	2
AD 163/III	Si	P	G	100	80	20	3A	30W	90	20.....40		1A				0,35		3	2
AD 163/IV	Si	P	G	100	80	20	3A	30W	90	30.....60		1A				0,35		3	2
AD 164	Te	P	G	25	20	10	1A	6W	90	185	1	500						40	2
AD 165	Te	N	G	25	20	10	1A	5W	90	185	1	500						40	2
AD 262	At	P	G	35	20	10	4A	10W	100	30....100	2	500				0,3		40	2
AD 263	At	P	G	60	40	10	4A	10W	100	20....180	2	500				0,3		40	2
ADY 26	Ph	P	G	80	60	40	25A	100W	90	40....120		5A	1,6	12	1A			11	5
ADY 27/IV	Si	P	G	32	30	10	3A	27W	100	30.....60		1A				0,45		3	2
ADY 27/V	Si	P	G	32	30	10	3A	27W	100	50....100		1A				0,45		3	2
ADZ 11	Ph	P	G	50	40	30	15A	45W	90	40....120		1,2A						11	2
ADZ 12	Ph	P	G	80	60	50	15A	45W	90	40....120		1,2A						11	2
AF 106	At	P	G	25	18	0,3	10	60	90	20.....50	12	1				220	750	30	3,6
AF 106A	At	P	G	25	18	0,3	10	60	90	20	12	1				220	750	30	3,6
AF 109R	At	P	G	20	15	0,3	10	60	90	20.....50	12	1,5					750	30	3,6
AF 114	Ph	P	G	32	15		10	75	90				150	6	1	75	600	5	3
AF 115	Ph	P	G	32	15		10	75	90				150	6	1	75	600	5	3

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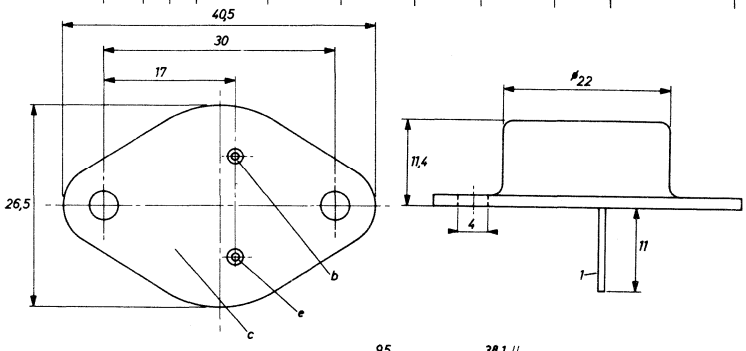

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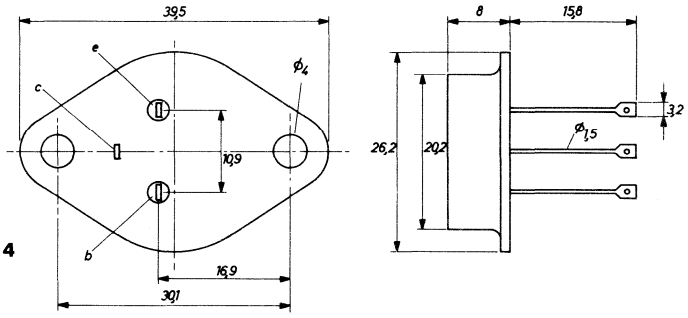

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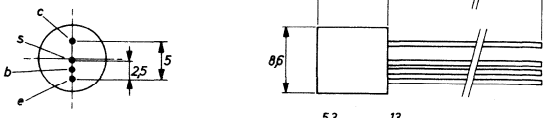

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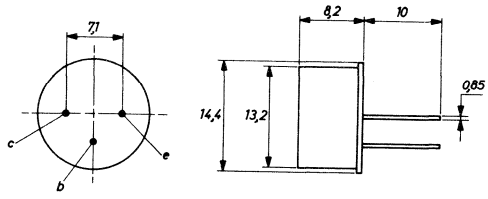

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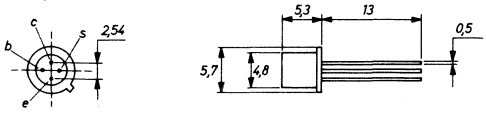

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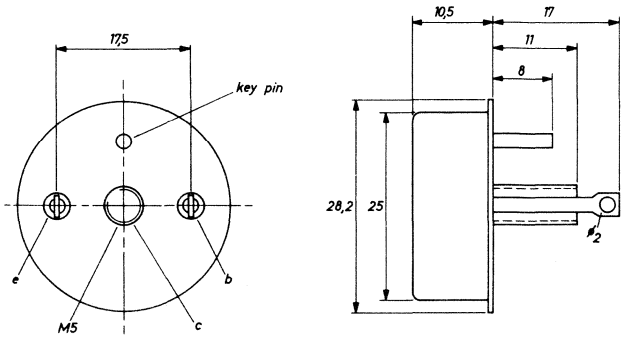

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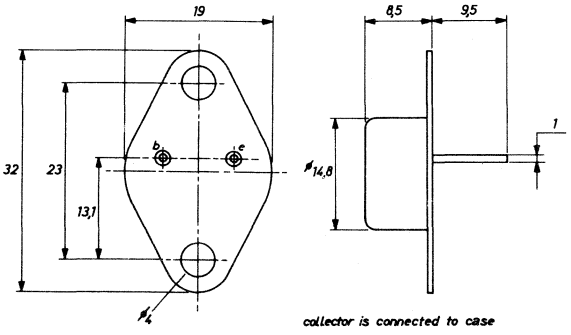
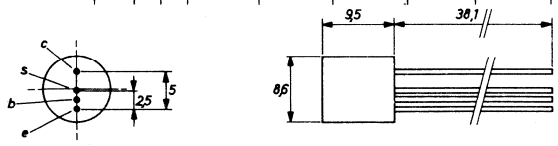


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
AF 116	Ph	P	G	32	15		10	75	90				150	6	1	75	600	5	3
AF 117	Ph	P	G	32	15		10	75	90				150	6	1	75	600	5	3
AF 118	Ph	P	G	70	20		30	375	90								250	5	3
AF 121	Ph	P	G	25			10	140	90							270	450	33	3
AF 124	Ph	P	G	32	15		10	60	90				150	6	1	75	750	31	3
AF 125	Ph	P	G	32	15		10	60	90				150	6	1	75	750	31	3
AF 126	Ph	P	G	32	15		10	60	90				150	6	1	75	750	31	3
AF 127	Ph	P	G	32	15		10	60	90				150	6	1	75	750	31	3
AF 134	Te	P	G	25		0,7		60	75				110	6	1	55	500	65	3
AF 135	Te	P	G	25		0,7		60	75				100	6	1	50	500	65	3
AF 136	Te	P	G	25		0,7		60	75				80	6	1	40	500	65	3
AF 137	Te	P	G	25		0,7		60	75				60	6	1	35	500	65	3
AF 138	Te	P	G	25		0,7		60	75				100	6	1	40	500	65	3
AF 139	Ph	P	G	20	15	0,3	10	60	90							550	750	30	3,6
AF 166	At	P	G	20		0,5	10	85	90	25....550	3	1					750	15	3
AF 170	At	P	G	20		0,5	10	85	90	25....550	3	1					750	15	3
AF 172	At	P	G	20		0,5	10	85	90	25....550	3	1					750	15	3
AF 178	Ph	P	G	25		0,5	10	75	90							180	600	8	3,6
AF 200	At	P	G	25		0,3	10	225	90				150	10	3		450	33	7
AF 201	At	P	G	25		0,3	10	225	90	20	10	3					450	33	7
AF 202	Si	P	G	25		0,3	30	225	90	85	10	3					450	65	6
AF 202L	At	P	G	32		0,3	30	225	90				150	10	3		450	33	7
AF 202S	Si	P	G	32		0,3	30	225	90	85	10	3					450	33	6
AF 239	Ph	P	G	20	15	0,3	15	60	90							650	750	30	3
AF 239S	Ph	P	G	20	15	0,3	15	60	90							780	750	30	3
AF 240	Ph	P	G	20	15	0,3	10	60	90	25	10	2				650	750	30	3
AF 256	Te	P	G	25	18	0,3	10	90	90	28	12	1				330	500	41	3
AF 267	Ph	P	G		15	0,3	10	60	90	10	10	2				780	600		3
AF 279	Te	P	G		15	0,3	10	60	90	50	10	2				780	600	19	3
AF 280	Te	P	G		15	0,3	10	60	90	25	10	2				550	600	19	3
AFY 11	Si	P	G	30	15	1	70	560	90							550	250	12	3
AFY 12	At	P	G	25	18	0,5	10	112	90	25....120	12	1				230	750	30	3
AFY 15 red	Te	P	G	22	12	8	50	110	85				30.....65	6	0,5	16	600	43	3
AFY 15 yel	Te	P	G	22	12	8	50	100	85				55.....100	6	0,5	16	600	43	3
AFY 15 grn	Te	P	G	22	12	8	50	100	85				80.....150	6	0,5	16	600	43	3
AFY 15 vio	Te	P	G	22	12	8	50	100	85				120....250	6	0,5	16	600	43	3
AFY 16	Ph	P	G	30	25	0,5	8	60	90							550	750	30	3
AFY 18C	Si	P	G	30		0,7	100	500	90	40....120	10	10				600	250	12	3
AFY 18D	Si	P	G	30		0,7	100	500	90	100...300	10	10				600	250	12	3
AFY 18E	Si	P	G	30		0,7	100	500	90	200...600	10	10				600	250	12	3

5



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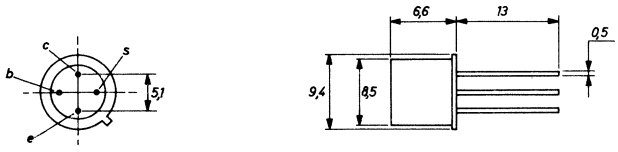

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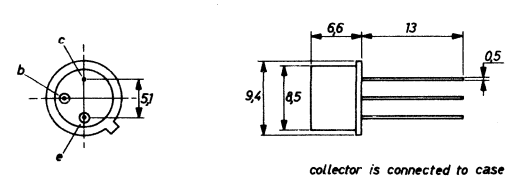
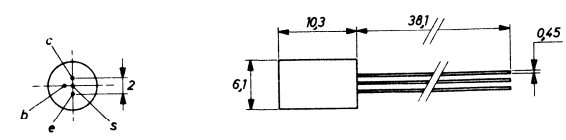


collector is connected to case

15



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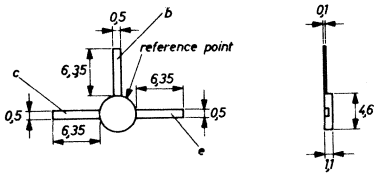

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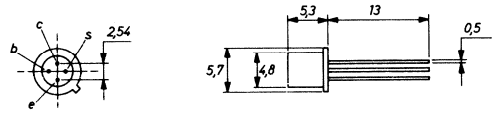

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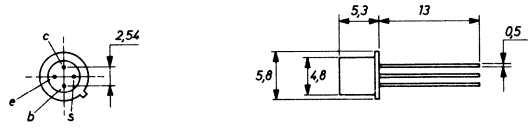

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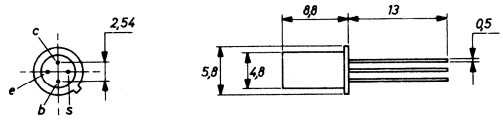

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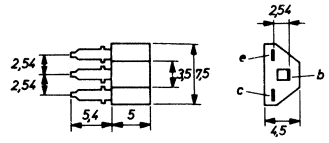

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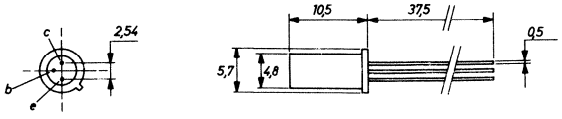

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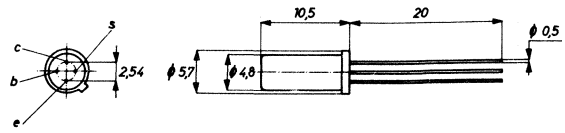
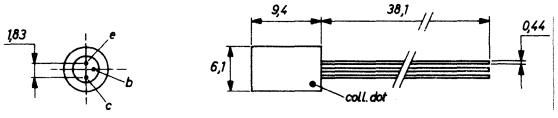


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
AFY 19	Ph	P	G	32			150	800	90							350	250	12	4
AFY 37	Si	P	G	32		0,3	20	112	90				40	12	2	600	750	30	3
AFY 39	Si	P	G	32		0,3	30	225	90	85	10	3				500	450	33	3
AFY 40	Ph	P	G	32	20	0,3	20	140	90							700	550	32	3
AFY 42	Si	P	G	30	25	0,3	10	112	90				50	10	2	700	750	30	3
AFZ 12	Ph	P	G	20	10	0,5	10	85	90				70	6	1	180	600	31	3
AL 100	At	P	G	130		2	10A	30W	100	40....250	2	1A				4		3	2
AL 102	At	P	G	130		2	6A	30W	100	40....250	2	1A				4		3	2
AL 103	At	P	G	100		1,5	6A	30W	100	40....250	2	1A				3		3	2
ASY 14	It	P	G	80	40	10	250	130	75	20.....40	0,5	250				1,5	400	65	5
ASY 26	Ph	P	G	30	15	20	200	150	85	45	1	10	50	5	2	8	400	4	5
ASY 27	Ph	P	G	25	15	20	200	150	85	80	1	10	90	5	2	14	400	4	5
ASY 28	Ph	N	G	30	15	20	200	150	85	43	1	10	50	5	2	14	400	4	5
ASY 29	Ph	N	G	25	15	20	200	150	85	113	1	10	90	5	2	20	400	4	5
ASY 31	Ph	P	G	25	15	20	100	125	75	30.....80		20				4	400	20	5
ASY 32	Ph	P	G	25	15	20	100	125	75	50....150		20				6	400	20	5
ASY 48/IV	Si	P	G	64	45	16	300	900	90	30.....60		100				1,2	300	1	5
ASY 48/V	Si	P	G	64	44	16	300	900	90	50....100		100				1,2	300	1	5
ASY 48/VI	Si	P	G	64	45	16	300	900	90	75....150		100				1,2	300	1	5
ASY 70/IV	Si	P	G	32	30	16	300	900	90	30.....60		100				1,5	300	1	5
ASY 70/V	Si	P	G	32	30	16	300	900	90	50....100		100				1,5	300	1	5
ASY 70/VI	Si	P	G	32	30	16	300	900	90	75....150		100				1,5	300	1	5
ASY 73	Ph	N	G	30	15	30	400	140	75	20		200				4	350	4	5
ASY 74	Ph	N	G	30	15	30	400	140	75	35		200				6	350	4	5
ASY 75	Ph	N	G	30	15	30	400	140	75	50		200				10	350	4	5
ASY 76	Ph	P	G	40		10	500	500	85	25....130		300				0,5	250	4	5
ASY 80	Ph	P	G	40		20	500	500	85	60....165		50				0,7	250	4	5
ASY 81	Se	P	G	60			500	225		30....100		100				2	250	12	1
ASY 90	At	P	G	40		24	250	430	90	25....130	0,5	10	30.....150	6	1		350	1	5
ASY 91	At	P	G	25		10	250	430	90	25....130	0,5	10	30.....150	6	1		350	1	5
ASZ 15	Ph	P	G	100	60	40	8A	30W	100	55	1	1A				0,2	45	3	5
ASZ 16	Ph	P	G	60	32	20	8A	30W	100	130	1	1A				0,25	45	3	5
ASZ 17	Ph	P	G	60	32	20	8A	30W	100	75	1	1A				0,2	45	3	5
ASZ 18	Ph	P	G	100	32	40	8A	30W	100	110	1	1A				0,2	45	3	5
ASZ 20	Ph	P	G	40			25	110	75				45	6	1		600	5	5

1



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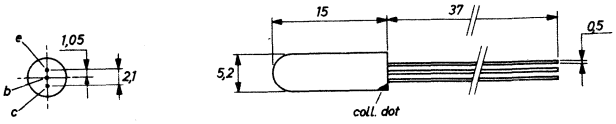

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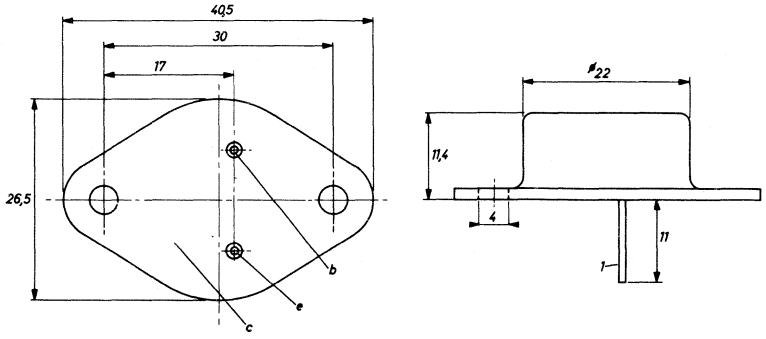

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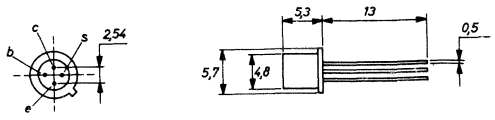

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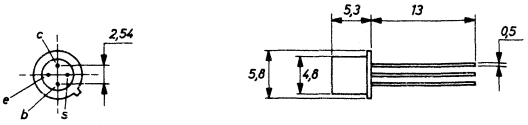

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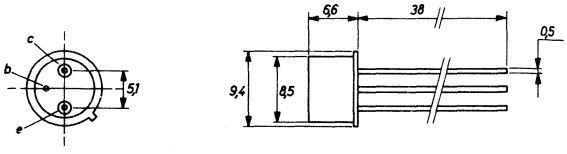

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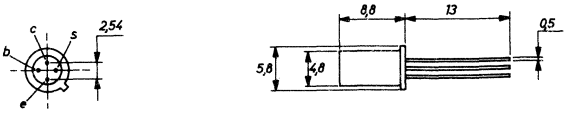

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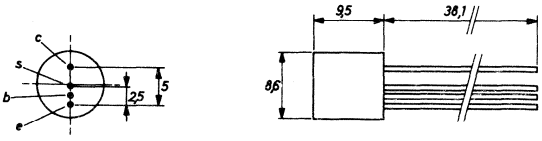

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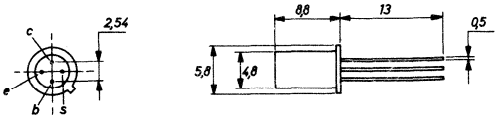

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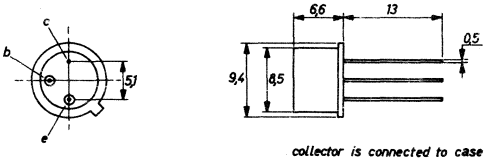
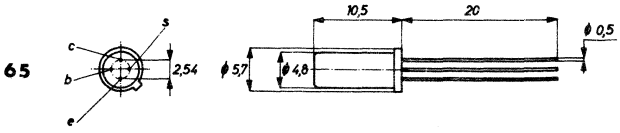


collector is connected to case

65



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
ASZ 21	Ph	P	G	20	15		30	120	85	50	1	30				300	500	9	8
AU 106	At	P	G	320		2	10A	5W	90	15.....80	1,3	6A				2	45	3	7
AU 107	At	P	G	200		2	10A	30W	90	35....120	2	700				2	45	3	7
AU 108	At	P	G	100		2	10A	30W	90	35....200	2	700					45	3	7
AU 108F	At	P	G	100		2	10A	30W	90	120...250	2	1A					45	3	7
AU 110	At	P	G	160		2	10A	30W	100	20.....90	2	1A					45	3	7
AU 111	At	P	G	320		2	10A	5W	90	15.....80	1,3	5A				2	45	3	7
AU 112	At	P	G	320		2	10A	5W	90	15.....40	1,3	6A				2	45	3	7
AU 113	At	P	G	250		3	10A	5W	90	15.....80	1,3	6A					45	3	7
AUY 10	Ph	P	G	70			700	6W	75	100	30	600				120	45	3	5
AUY 18/IV	Si	P	G	64	45	20	8A	11W	100	30.....60		5A				0,3		6	5
AUY 18/V	Si	P	G	64	45	20	8A	11W	100	50....100		5A				0,3		6	5
AUY 19/III	Si	P	G	64	45	20	3A	30W	90	30		1A				0,35	45	3	5
AUY 19/IV	Si	P	G	64	45	20	3A	30W	90	45		1A				0,35		3	5
AUY 19/V	Si	P	G	64	45	20	3A	30W	90	75		1A				0,35		3	5
AUY 20/III	Si	P	G	80	60	20	3A	30W	90	30		1A				0,35		3	5
AUY 20/IV	Si	P	G	80	60	20	3A	30W	90	45		1A				0,35		3	5
AUY 20/V	Si	P	G	80	60	20	3A	30W	90	75		1A				0,35	45	3	5
AUY 21/II	Si	P	G	65	32	20	10A	36W	100	32		500				0,3		14	5
AUY 21/III	Si	P	G	65	32	20	10A	36W	100	50		500				0,3		14	5
AUY 21/IV	Si	P	G	65	32	20	10A	36W	100	75		500				0,3		14	5
AUY 21A	At	P	G	65	45	20	10A	36W	100	12.....60	0,5	5A				0,3	45	3	5
AUY 22/II	Si	P	G	80	45	20	8A	36W	100	32		500				0,3		14	5
AUY 22/III	Si	P	G	80	45	20	8A	36W	100	50		500				0,3		14	5
AUY 22/IV	Si	P	G	80	45	20	8A	36W	100	75		500				0,3		14	5
AUY 22A	At	P	G	80	60	20	8A	36W	100	12.....60	0,5	5A				0,3	45	3	5
AUY 28	Te	P	G	90	65	25	6A	30W	90	33	1,5	5A				0,25	45	3	5
AUY 29/III	Si	P	G	50	20	10	15A	36W	100	50		500				0,3		14	5
AUY 29/IV	Si	P	G	50	20	10	15A	36W	100	75		500				0,3		14	5
AUY 29/V	Si	P	G	50	20	10	15A	36W	100	125		500				0,3		14	5
AUY 34/II	Si	P	G	100	80	20	3A	30W	90	19		1A				0,35	45	3	5
AUY 34/III	Si	P	G	100	80	20	3A	30W	90	30		1A				0,35	45	3	5
AUY 34/IV	Si	P	G	100	80	20	3A	30W	90	45		1A				0,35	45	3	5
AUY 35	At	P	G	70	25	2	10A	15W	100	35....260	1	5A				2,5	85	6	5
AUY 36	At	P	G	70	25	3	10A	15W	100	100	1	5A				3	85	6	5
AUY 37	At	P	G	100	60	40	10A	30W	100	30....110	2	1A				0,4	45	3	5
AUY 38	At	P	G	130	70	2	10A	30W	100	30....190	1	5A				4	45	3	5
B 144000	So	N	S	50	40	5	10			45.....90	10	3A				50		66	2
B 144001	So	N	S	50	40	5	10			70....140	10	3A				50		66	2
B 144002	So	N	S	50	40	5	10			120...240	10	3A				50		66	2

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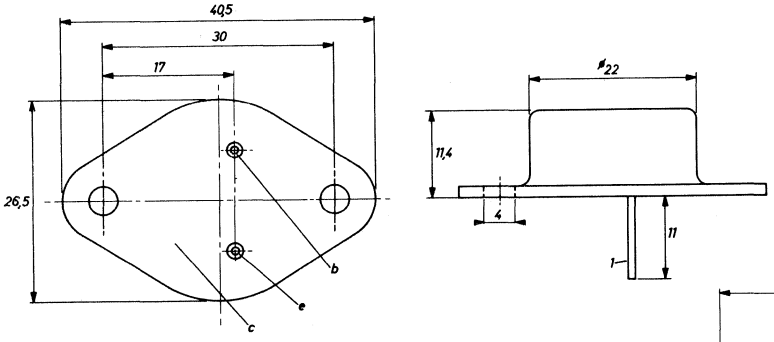

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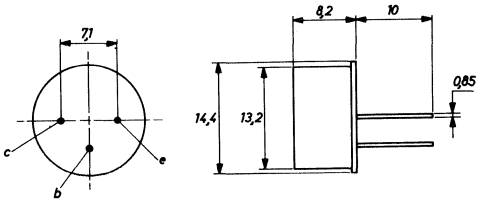

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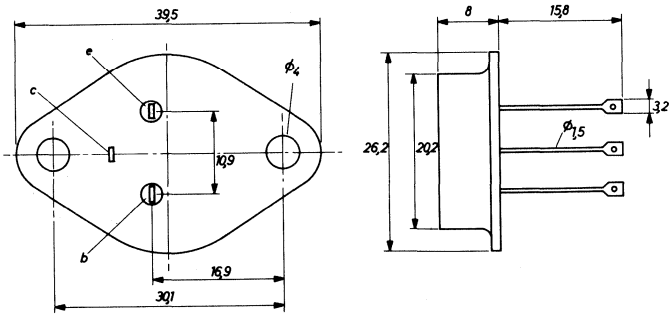

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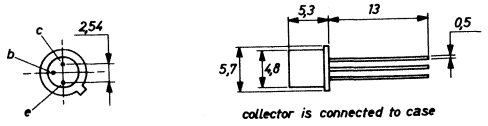

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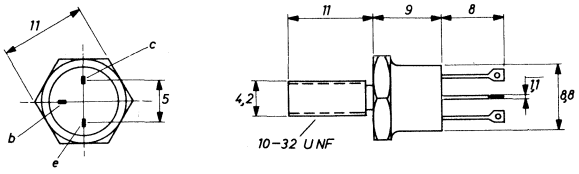
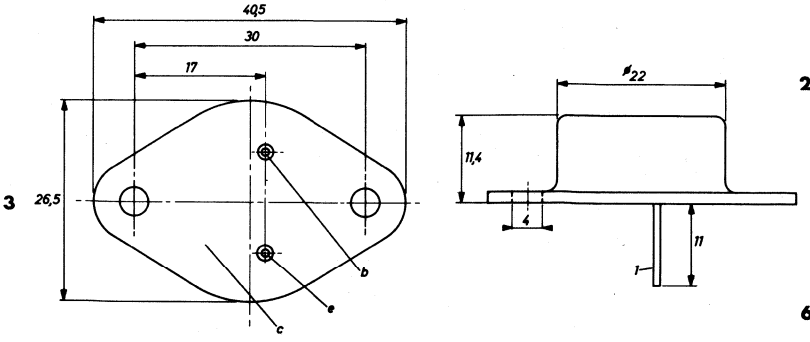


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
B 144003	So	N	S	70	60	5	10			45.....90	10	3A				50		66	2
B 144004	So	N	S	70	60	5	10			70....140	10	3A				50		66	2
B 144005	So	N	S	70	60	5	10			120...240	10	3A				50		66	2
B 144006	So	N	S	90	80	5	10			45.....90	10	3A				50		66	2
B 144007	So	N	S	90	80	5	10			70....140	10	3A				50		66	2
B 144008	So	N	S	90	80	5	10			120...240	10	3A				50		66	2
B 145000	So	N	S	50	40	5	10			45.....90	10	3A				50		27	2
B 145001	So	N	S	50	40	5	10			70....140	10	3A				50		27	2
B 148000	So	N	S	100	80	7	25			20	10	5A				35		27	2
B 148001	So	N	S	120	100	7	25			20	10	5A				35		27	2
B 148002	So	N	S	100	80	7	25			15	10	5A				35		27	2
B 148003	So	N	S	120	100	7	25			15	10	5A				35		27	2
B 148004	So	N	S	80	60	7	25			20	10	5A				35		27	2
B 148005	So	N	S	80	60	7	25			15	10	5A				35		27	2
B 170000	So	N	S	50	40	8	15			30	4	1A					45	3	2
B 170001	So	N	S	50	40	8	15			20	4	3A					45	3	2
B 170002	So	N	S	50	40	8	15			12	4	5A					45	3	2
B 170003	So	N	S	80	70	8	15A			30	4	1A					45	3	2
B 170004	So	N	S	80	70	8	15A			20	4	3A					45	3	2
B 170005	So	N	S	80	70	8	15A			12	4	5A					45	3	2
B 170006	So	N	S	100	100	8	15A			30	4	1A					45	3	2
B 170007	So	N	S	100	100	8	15A			20	4	3A					45	3	2
B 170008	So	N	S	100	100	8	15A			12	4	5A					45	3	2
B 170009	So	N	S	50	40	8	15A			30	4	1A					45	3	2
B 170010	So	N	S	50	40	8	15A			20	4	3A					45	3	2
B 170011	So	N	S	50	40	8	15A			12	4	5A					45	3	2
B 170012	So	N	S	80	70	8	15A			30	4	1A					45	3	2
B 170013	So	N	S	80	70	8	15A			20	4	3A					45	3	2
B 170014	So	N	S	80	70	8	15A			12	4	5A					45	3	2
B 170015	So	N	S	100	100	8	15A			30	4	1A					45	3	2
B 170016	So	N	S	100	100	8	15A			20	4	1A					45	3	2
B 170017	So	N	S	100	100	8	15A			12	4	5A					45	3	2
B 170018	So	N	S	50	40	8	15A			30	4	1A					45	3	2
B 170019	So	N	S	50	40	8	15A			20	4	3A					45	3	2
B 170020	So	N	S	50	40	8	15A			12	4	5A					45	3	2
B 170021	So	N	S	80	70	8	15A			30	4	1A					45	3	2
B 170022	So	N	S	80	70	8	15A			20	4	3A					45	3	2
B 170023	So	N	S	80	70	8	15A			12	4	1A					45	3	2
B 170024	So	N	S	100	100	8	15A			30	4	1A					45	3	2
B 170025	So	N	S	100	100	8	15A			20	4	3A					45	3	2
B 170026	So	N	S	100	100	8	15A			12	4	5A					45	3	2
B 176000	So	N	S	250	200	5	5A			25	5	100					45	3	2
B 176001	So	N	S	250	200	5	5A			20	5	500					45	3	2
B 176002	So	N	S	250	200	5	5A			10	5	1,5A					45	3	2
B 176003	So	N	S	250	200	5	5A			10	5	2,5A					45	3	2
B 176004	So	N	S	400	325	5	5A			25	5	100					45	3	2
B 176005	So	N	S	400	325	5	5A			20	5	500					45	3	2
B 176006	So	N	S	400	325	5	5A			10	5	1,5A					45	3	2
B 176007	So	N	S	400	325	5	5A			10	5	2,5A					45	3	2
B 176008	So	N	S	550	325	5	5A			25	5	100					45	3	2

3



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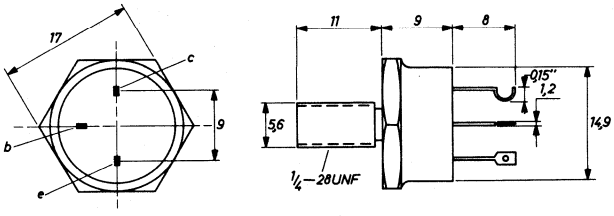

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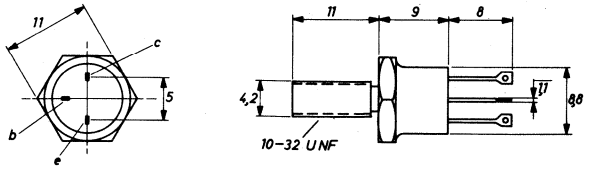

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
B 176009	So	N	S	550	325	5	5A			20	5	500					45	3	2
B 176010	So	N	S	550	325	5	5A			10	5	1,5A					45	3	2
B 176011	So	N	S	550	325	5	5A			10	5	2,5A					45	3	2
B 176012	So	N	S	650	325	5	5A			25	5	100					45	3	2
B 176013	So	N	S	650	325	5	5A			20	5	500					45	3	2
B 176014	So	N	S	650	325	5	5A			10	5	1,5A					45	3	2
B 176015	So	N	S	650	325	5	5A			10	5	2,5A					45	3	2
B 176024	So	N	S	400	325	5	5A			10	5	1,5A					45	3	2
B 176025	So	N	S	400	325	5	5A			10	5	2,5A					45	3	2
B 176026	So	N	S	550	325	5	5A			10	5	1,5A					45	3	2
B 176027	So	N	S	550	325	5	5A			10	5	2,5A					45	3	2
B 176028	So	N	S	650	325	5	5A			10	5	1,5A					45	3	2
B 176029	So	N	S	650	325	5	5A			10	5	2,5A					45	3	2
B 176030	So	N	S	800	500	5	5A			10	5	3A					45	3	2
BC 107	Ph	N	S	50	45	6	100	300	175				125....500	5	2	300	500	9	1,3
BC 107A	Ph	N	S	50	45	6	100	300	175	180	5	2	220	5	2	300	500	9	1,3
BC 107B	Ph	N	S	50	45	6	100	300	175	290	5	2	330	5	2	300	500	9	1,3
BC 108	Ph	N	S	30	20	5	100	300	175				125....900	5	2	300	500	9	1,3
BC 108A	Ph	N	S	30	20	5	100	300	175	180	5	2	220	5	2	300	500	9	1,3
BC 108B	Ph	N	S	30	20	5	100	300	175	290	5	2	330	5	2	300	500	9	1,3
BC 108C	Ph	N	S	30	20	5	100	300	175	520	5	2	600	5	2	300	500	9	1,3
BC 109	Ph	N	S	30	20	5	100	300	175				24.....900	5	2	300	500	9	1,3
BC 109B	Ph	N	S	30	20	5	100	300	175	290	5	2	330	5	2	300	500	9	1,3
BC 109C	Ph	N	S	30	20	5	100	300	175	520	5	2	600	5	2	300	500	9	1,3
BC 110	Te	N	S	80	80	8	50	300	175	90	5	2				100	500	9	1
BC 113	Ns	N	S	30	25	6	25			200...1000	10	1						67	1
BC 114	Ns	N	S	30	25	6	25			200...1000	10	1				60		67	1
BC 115	Ns	N	S	40	30	5	500			195	10	1						68	1
BC 116	Ns	P	S	60	40	5	500			50.....400	10	10				200		68	1
BC 118	Ns	N	S	45	45	4	100			60.....350	5	10				200		67	1
BC 121 whi	Si	N	S	5	5	5	50	260	125	75.....150	0,5	0,25	0,25			250		64	1
BC 121 yel	Si	N	S	5	5	5	50	260	125	125....260	0,5	0,25				250		64	1
BC 121 grn	Si	N	S	5	5	5	50	260	125	240....500	0,5	0,25				250		64	1
BC 121 blu	Si	N	S	5	5	5	50	260	125	470....900	0,5	0,25				250		64	1
BC 122 whi	Si	N	S	30	20	5	50	260	125	75.....150	0,5	0,25				250		64	1
BC 122 yel	Si	N	S	30	20	5	50	260	125	125....260	0,5	0,25				250		64	1
BC 122 grn	Si	N	S	30	20	5	50	260	125	240....500	0,5	0,25				250		64	1
BC 122 blu	Si	N	S	30	20	5	50	260	125	470....900	0,5	0,25				250		64	1
BC 123 whi	Si	N	S	45	30	5	50	260	125	75.....150	0,5	0,25				250		64	1
BC 123 yel	Si	N	S	45	30	5	50	260	125	125....260	0,5	0,25				250		64	1
BC 123 grn	Si	N	S	45	30	5	50	260	125	240....500	0,5	0,25				250		64	1
BC 125	Fa	N	S		30			300		30	0,5	150				40		68	1,5
BC 125B	Ns	N	S	60	30	6	500			45	1	10				200		67	1
BC 126	Ns	P	S	35		5	500			30.....120	1	150						67	1
BC 126A	Ns	P	S	40	40	5	500			50.....150	1	150						67	1
BC 129A	Te	N	S	50	45	6	100	135	175	180	5	2	125....260	5	2	300	950	9	1,3
BC 129B	Te	N	S	50	45	6	100	135	175	290	5	2	240....500	5	2	300	950	9	1,3
BC 130A	Te	N	S	30	20	5	100	135	175	180	5	2	125....260	5	2	300	950	9	1,3
BC 130B	Te	N	S	30	20	5	100	135	175	290	5	2	240....500	5	2	300	950	9	1,3
BC 130C	Te	N	S	30	20	5	100	135	175	520	5	2	450....900	5	2	300	950	9	1,3

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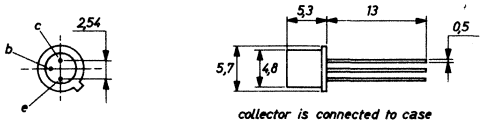

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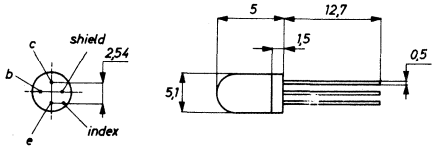

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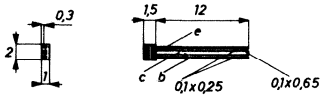

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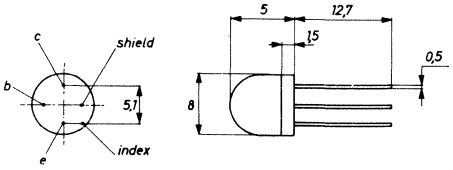

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BC 131B	Te	N	S	30	20	5	100	135	175	290	5	2	240...500	5	2	300	950	9	1,3
BC 131C	Te	N	S	30	20	5	100	135	175	520	5	2	450...900	5	2	300	950	9	1,3
BC 132	Ns	N	S	30	25	6				60....300	10	1				40		68	1
BC 136	Ns	N	S	60		5				30	10	10						67	1
BC 137	Ns	P	S	40	40	4	500			25.....50	4	50						67	1
BC 140	Te	N	S		40	7	1A	4W	175	40....250	1	100				50	200	12	2,5
BC 140-6	It	N	S	80	40	7	1A	4W	175	40....100	1	100				50	200	12	1,5
BC 140-10	It	N	S	80	40	7	1A	4W	175	63....160	1	100				50	200	12	1,5
BC 140-16	It	N	S	80	40	7	1A	4W	175	100...250	1	100				50	200	12	1,5
BC 141	Te	N	S	100	60	7	1A	4W	175	40....250	1	100				50	200	12	2,5
BC 141-6	It	N	S	100	60	7	1A	4W	175	40....100	1	100				50	200	12	1,5
BC 141-10	It	N	S	100	60	7	1A	4W	175	63....160	1	100				50	200	12	1,5
BC 141-16	It	N	S	100	60	7	1A	4W	175	100...250	1	100				50	200	12	1,5
BC 143	Ns	P	S	60	60	5	500			20....200	2	200				60		4	1
BC 146 red	Ph	N	S	20	20	4	50	50	125	80....200	0,5	0,2	130	0,5	0,2	150	1600	29	1
BC 146 yel	Ph	N	S	20	20	4	50	50	125	140...350	0,5	0,2	220	0,5	0,2	150	1600	29	1
BC 146 grn	Ph	N	S	20	20	4	50	50	125	280...550	0,5	0,2	380	0,5	0,2	150	1600	29	1
BC 147	Ph	N	S	50	45	6	100	250	125				125...500	5	2	300	400	41	1
BC 147A	Ph	N	S	50	45	6	100	250	125	180	5	2	220	5	2	300	400	41	1
BC 147B	Ph	N	S	50	45	6	100	250	125	290	5	2	330	5	2	300	400	41	1
BC 148	Ph	N	S	30	20	5	100	250	125				125...900	5	2	300	400	41	1
BC 148A	Ph	N	S	30	20	5	100	250	125	180	5	2	220	5	2	300	400	41	1
BC 148B	Ph	N	S	30	20	5	100	250	125	290	5	2	330	5	2	300	400	41	1
BC 148C	Ph	N	S	30	20	5	100	250	125	520	5	2	600	5	2	300	400	41	1
BC 149	Ph	N	S	30	20	5	100	250	125				240...900	5	2	300	400	41	1
BC 149B	Ph	N	S	30	20	5	100	250	125	290	5	2	330	5	2	300	400	41	1
BC 149C	Ph	N	S	30	20	5	100	250	125	520	5	2	600	5	2	300	400	41	1
BC 153	Ns	P	S	40	40	5				50....500	5	10	100...800	5	1			67	1
BC 154	Ns	P	S	40	40	5				50....500	5	10	100...800	5	1			67	1
BC 155A	Te	N	S	5	5	5	50	105	125				85....220	1	0,5	50	750	46	1
BC 155B	Te	N	S	5	5	5	50	105	125				200...500	1	0,5	50	750	46	1
BC 155C	Te	N	S	5	5	5	50	105	125				470...900	1	0,5	50	750	46	1
BC 156A	Te	N	S	5	5	5	50	50	125				85....220	1	0,5	50	1600	47	1
BC 156B	Te	N	S	5	5	5	50	50	125				200...500	1	0,5	50	1600	47	1
BC 156C	Te	N	S	5	5	5	50	50	125				470...900	1	0,5	50	1600	47	1
BC 157	Ph	P	S	50	45	5	100	250	125	140	5	2	75....260	5	2	150	400	41	1
BC 158	Ph	P	S	30	25	5	100	250	125				75....500	5	2	150	400	41	1
BC 158A	Ph	P	S	30	25	5	100	250	125	180	5	2	125...260	5	2	150	400	41	1
BC 158B	Ph	P	S	30	25	5	100	250	125	290	5	2	240...500	5	2	150	400	41	1
BC 159	Si	P	S		20	5	100	220	125	240..500	5	2				200	450	41	1
BC 159A	Ph	P	S	25	20	5	100	250	125	180	5	2	125...260	5	2	150	400	41	1
BC 159B	Ph	P	S	25	20	5	100	250	125	290	5	2	240...500	5	2	150	400	41	1
BC 160	Te	P	S		40	5	1A	3W	175	40...250	1	100				50	200	12	2,5
BC 160-6	It	P	S	40	40	5	1A	3W	175	40...100	1	100				50	200	12	1,5
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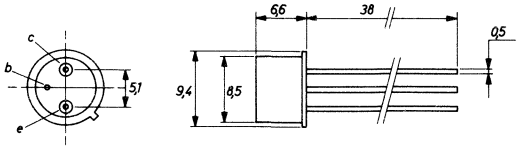

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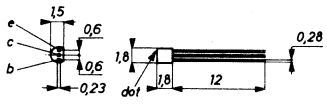

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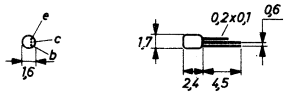

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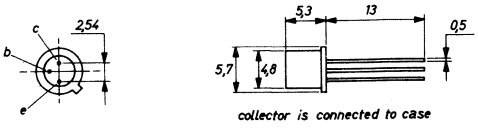

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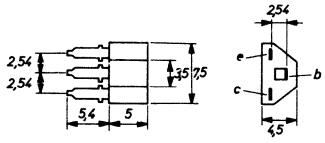

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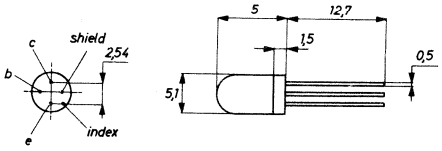

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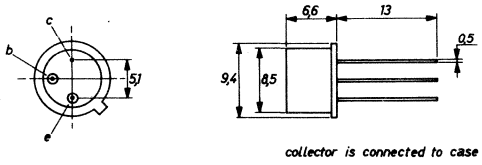

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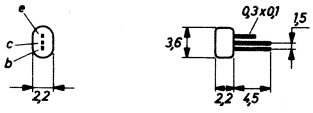

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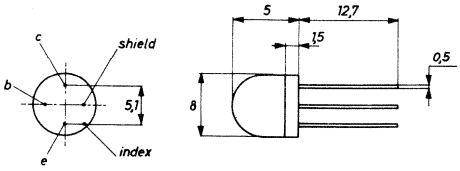
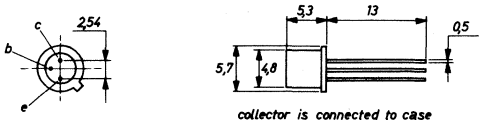


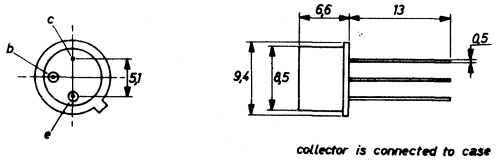
Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BC 160-16	It	P	S	40	40	5	1A	3W	175	100...250	1	100				50	200	12	1,5
BC 161	Te	P	S	60	60	5	1A	3W	175	40....250	1	100				50	200	12	1,5
BC 161-6	It	P	S	60	60	5	1A	3W	175	40....100	1	100				50	200	12	1,5
BC 161-10	It	P	S	60	60	5	1A	3W	175	63....160	1	100				50	200	12	1,5
BC 161-16	It	P	S	60	60	5	1A	3W	175	100...250	1	100				50	200	12	1,5
BC 167A	Si	N	S	50	45	6	100	180	125	125...260	5	2				300	450	34	1
BC 167B	Si	N	S	50	45	6	100	180	125	240...500	5	2				300	450	34	1
BC 168A	Si	N	S	30	20	5	100	180	125	125...260	5	2				300	450	34	1
BC 168B	Si	N	S	30	20	5	100	180	125	240...500	5	2				300	450	34	1
BC 168C	Si	N	S	30	20	5	100	180	125	450...900	5	2				300	450	34	1
BC 169B	Si	N	S	30	20	5	100	180	125	240...500	5	2				300	450	34	1
BC 169C	Si	N	S	30	20	5	100	180	125	450...900	5	2				300	450	34	1
BC 170A	Ns	N	S	20	20	5				35....100	1	1				500		67	3
BC 170B	Ns	N	S	20	20	5				80....250	1	1				500		67	3
BC 170C	Ns	N	S	20	20	5				200...600	1	1				500		67	3
BC 171A	Ns	N	S		45	5							125...260	5	2	150		67	3
BC 171B	Ns	N	S		45	5							240...500	5	2	150		67	3
BC 172A	Ns	N	S		20	5							125...260	5	2	150		67	3
BC 172B	Ns	N	S		20	5							240...500	5	2	150		67	3
BC 172C	Ns	N	S		20	5							450...900	5	2	150		67	3
BC 173B	Ns	N	S		20	5							240...500	5	2	150		67	3
BC 173C	Ns	N	S		20	5							450...900	5	2	150		67	3
BC 174A	It	N	S	70	64	5	100	300	150	170	5	2	125...260	5	2	250	420	34	3,5
BC 174B	It	N	S	70	64	5	100	300	150	290	5	2	240...500	5	2	250	420	34	3,5
BC 177	Ns	P	S	50	45	5	100						75....260	5	2			9	1
BC 177A	Te	P	S	50	45	5	100	300	175	180	5	2	125...260	5	2	130	500	9	1
BC 177B	Te	P	S	50	45	5	100	300	175	290	5	2	240...500	5	2	130	500	9	1
BC 177/V	Si	P	S	45	45	5	100	300	175	50....100	5	2				200	500	9	1
BC 177/VI	Ns	P	S	50	45	5	100						75....150	5	2			9	1
BC 178	Ns	P	S	30	25	5	100						75....500	5	2			9	1
BC 178/V	Si	P	S	20	20	5	100	300	175	20	5	10	50....100	5	2	200	500	9	1
BC 178/VI	Te	P	S	30	25	5	100	300	175	140	5	2	75....150	5	2	130	500	9	1
BC 178A	Ph	P	S	30	25	5	100	300	175	180	5	2	125...260	5	2	150	500	9	1
BC 178B	Ph	P	S	30	25	5	100	300	175	290	5	2	240...500	5	2	150	500	9	1
BC 178C	Te	P	S	30	25	5	100	300	175	520	5	2	450...900	5	2	130	500	9	1
BC 179	Si	P	S	20	20	5	100	300	175	20	5	10	240...500	5	2	200	500	9	1
BC 179A	Ph	P	S	25	20	5	100	300	175	180	5	2	125...260	5	2	150	500	9	1
BC 179B	Ph	P	S	25	20	5	100	300	175	290	5	2	240...500	5	2	150	500	9	1
BC 179C	Te	P	S	25	20	5	100	300	175	520	5	2	450...900	5	2	130	500	9	1
BC 181	Tx	P	S	40	25	5	200	300		60	5	50						69	1
BC 182	Tx	N	S	60	50	6	200	300	150	100...480	5	2	125...500	5	2	150		69	1
BC 182A	Tx	N	S	60	50	6	200	300	150	100...480	5	2	125...260	5	2	150		69	1
BC 182B	Tx	N	S	60	50	6	200	300	150	100...480	5	2	240...500	5	2	150		69	1
BC 182K	Ns	N	S	60	50	5				40	5	0,01				150		67	1
BC 182KA	Ns	N	S	60	50	5				100...480	5	2				150		67	1
BC 182KB	Ns	N	S	60	50	5				100	5	2				150		67	1
BC 183	Tx	N	S	45	30	6	200	300	150	100...850	5	2	125...900	5	2	150		69	1
BC 183A	Tx	N	S	45	30	6	200	300	150	100...850	5	2	125...260	5	2	150		69	1
BC 183B	Tx	N	S	45	30	6	200	300	150	100...850	5	2	240...500	5	2	150		69	1
BC 183C	Tx	N	S	45	30	6	200	300	150	100...850	5	2	450...900	5	2	150		69	1
BC 183K	Ns	N	S	45	30	5				100...850	5	2				150		67	1
BC 183KA	Ns	N	S	45	30	5				100...850	5	2				150		67	1
BC 183KB	Ns	N	S	45	30	5				100...850	5	2				150		67	1
BC 183KC	Ns	N	S	45	30	5				100...850	5	2				150		67	1
BC 184	Tx	N	S	45	30	6	200	300	150	250...400	5	2	240...900	5	2	150		69	1

9



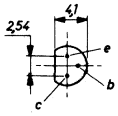
collector is connected to case

12



collector is connected to case

69



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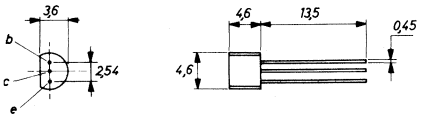

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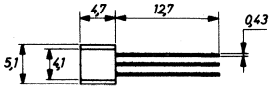
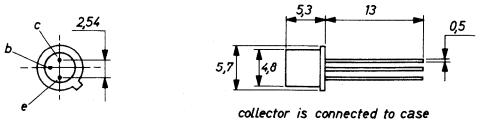


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BC 184B	Tx	N	S	45	30	6	200	300	150	250...400	5	2	240...500	5	2	150		69	1
BC 184C	Tx	N	S	45	30	6	200	300	150	250...400	5	2	450...900	5	2	150		69	1
BC 184K	Ns	N	S	45	30	5				250	5	2				150		67	1
BC 184KB	Ns	N	S	45	30	5				250	5	2				150		67	1
BC 184KC	Ns	N	S	45	30	5				250	5	2				150		67	1
BC 190A	It	N	S		64	5	100	300	175	170	5	2	125...260	5	2	250	500	9	1,5
BC 190B	It	N	S		64	5	100	300	175	290	5	2	240...500	5	2	250	500	9	1,5
BC 190C	It	N	S		64	5	100	300	175	500	5	2	450...900	5	2	250	500	9	1,5
BC 192	It	P	S	25	25	5	500	2W	200	60....180	5	50				100	440	9	1,5
BC 194	Te	N	S	40	25	5	800	105	125	40....250	10	10				100	750	46	1
BC 196/VI	Te	P	S	30	25	5	100	50	125	140	5	2	75....150	5	2	150	1600	47	1
BC 196A	Te	P	S	30	25	5	100	50	125	180	5	2	125...260	5	2	200	1600	47	1
BC 196B	Te	P	S	30	25	5	100	50	125	290	5	2	240...500	5	2	250	1600	47	1
BC 197A	Te	N	S	50	45	6	100	50	125	180	5	2	125...260	5	2	300	1600	47	1
BC 197B	Te	N	S	50	45	6	100	50	125	290	5	2	240...500	5	2	300	1600	47	1
BC 198A	Te	N	S	30	20	5	100	50	125	180	5	2	125...260	5	2	300	1600	47	1
BC 198B	Te	N	S	30	20	5	100	50	125	290	5	2	240...500	5	2	300	1600	47	1
BC 198C	Te	N	S	30	20	5	100	50	125	520	5	2	450...900	5	2	300	1600	47	1
BC 199B	Te	N	S	30	20	5	100	50	125	290	5	2	240...500	5	2	300	1600	47	1
BC 199C	Te	N	S	30	20	5	100	50	125	520	5	2	450...900	5	2	300	1600	47	1
BC 200 red	Ph	P	S	20	20	5	50	50	125	50....105	0,5	0,2	75	0,5	0,2	90	1600	29	1
BC 200 yel	Ph	P	S	20	20	5	50	50	125	85....200	0,5	0,2	140	0,5	0,2	90	1600	29	1
BC 200 grn	Ph	P	S	20	20	5	50	50	125	165...400	0,5	0,2	250	0,5	0,2	90	1600	29	1
BC 204	Fa	P	S		45					80		0,01	75....500		2			67	1
BC 204A	Fa	P	S		45					80		0,01	125...260		2			67	1
BC 204B	Fa	P	S		45					150		0,01	240...500		2			67	1
BC 205	Fa	P	S		30					80		0,01	75....500		2			67	1
BC 205A	Fa	P	S		30					80		0,01	125...260		2			67	1
BC 205B	Fa	P	S		30					150		0,01	240...500		2			67	1
BC 206	Fa	P	S		20					80		0,01	125...500		2			67	1
BC 206A	Fa	P	S		20					80		0,01	125...260		2			67	1
BC 206B	Fa	P	S		20					150		0,01	240...500		2			67	1
BC 207B	Fa	N	S		45					150		0,01	240...500		2			67	1
BC 208B	Fa	N	S		20					150		0,01	240...500		2			67	1
BC 208C	Fa	N	S		20					270		0,01	450...900		2			67	1
BC 209B	Fa	N	S		20					150		0,01	240...500		2			67	1
BC 209C	Fa	N	S		20					270		0,01	450...900		2			67	1
BC 212	Tx	P	S	60	50	5	200	300	150	60....300	5	2	60	5	2	200		69	1
BC 212A	Tx	P	S	60	50	5	200	300	150	60....300	5	2	100...300	5	2	200		69	1
BC 212B	Tx	P	S	60	50	5	200	300	150	60....300	5	2	200...400	5	2	200		69	1
BC 212K	Ns	P	S	60	50	5	500			60....300	5	2	60	5	2	200		67	1
BC 212KA	Ns	P	S	60	50	5	500			60....300	5	2	100...300	5	2	200		67	1
BC 212KB	Ns	P	S	60	50	5	500			60....300	5	2	200...400	5	2	200		67	1
BC 213	Tx	P	S	45	30	5	200	300	150	80....400	5	2	80	5	2	200		69	1
BC 213A	Tx	P	S	45	30	5	200	300	150	80....400	5	2	100...300	5	2	200		69	1
BC 213B	Tx	P	S	45	30	5	200	300	150	80....400	5	2	200...400	5	2	200		69	1
BC 213C	Tx	P	S	45	30	5	200	300	150	80....400	5	2	350...600	5	2	200		69	1
BC 213K	Ns	P	S	45	30	5	500			80....400	5	2	80	5	2	200		67	1
BC 213KA	Ns	P	S	45	30	5	500			80....400	5	2	100...300	5	2	200		67	1
BC 213KB	Ns	P	S	45	30	5	500			80	5	2				200		67	1

9



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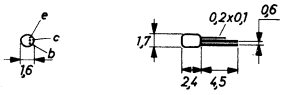

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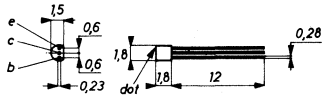

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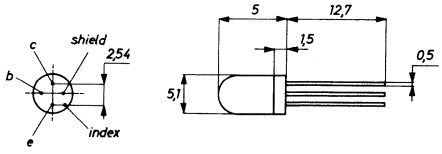

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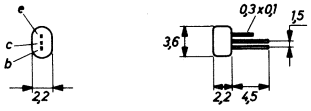

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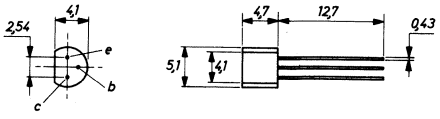
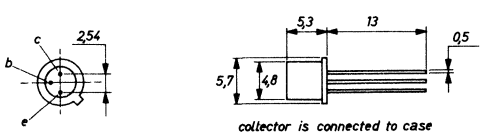


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
BC 213KC	Ns	P	S	45	30	5	500			80	5	2	350...600	5	2	200		67	1
BC 214	Tx	P	S	45	30	5	200	300	150	140...400	5	2	140	5	2	200		69	1
BC 214A	Tx	P	S	45	30	5	200	300	150	140...400	5	2	100...300	5	2	200		69	1
BC 214B	Tx	P	S	45	30	5	200	300	150	140...400	5	2	200...400	5	2	200		69	1
BC 214C	Tx	P	S	45	30	5	200	300	150	140...400	5	2	350...600	5	2	200		69	1
BC 214K	Ns	P	S	45	30	5	500			140...400	5	2				200		67	1
BC 214KA	Ns	P	S	45	30	5	500			140...400	5	2				200		67	1
BC 214KB	Ns	P	S	45	30	5	500			140...400	5	2				200		67	1
BC 214KC	Ns	P	S	45	30	5	500			140...400	5	2				200		67	1
BC 223	Tx	N	S	50	30	5	400	360	150	100...450	2	50						69	1
BC 224	Tx	P	S	30	30	6	30	250	150	150...450	5	1	150...800	5	1			34	1
BC 225	Fa	P	S		40					130		0,01	90		1			67	1
BC 231	Tx	P	S	40	30	5	400	625	150	100...450	5	50						34	1
BC 231A	Tx	P	S	40	30	5	400	625	150	100...300	5	50						34	1
BC 231B	Tx	P	S	40	30	5	400	625	150	200...450	5	50						34	1
BC 232	Tx	N	S	40	30	5	400	625	150	100...450	2	50						34	1
BC 232A	Tx	N	S	40	30	5	400	625	150	100...300	2	50						34	1
BC 232B	Tx	N	S	40	30	5	400	625	150	200...450	2	50						34	1
BC 237	Ph	N	S	50	45	6	100	300	125				125...500	5	2	300	330	69	1
BC 237A	Ph	N	S	50	45	6	100	300	125	180	5	2	220	5	2	300	330	69	1
BC 237B	Ph	N	S	50	45	6	100	300	125	290	5	2	330	5	2	300	330	69	1
BC 238	Ph	N	S	30	20	5	100	300	125				125...900	5	2	300	330	69	1
BC 238A	Ph	N	S	30	20	5	100	300	125	180	5	2	220	5	2	300	330	69	1
BC 238B	Ph	N	S	30	20	5	100	300	125	290	5	2	330	5	2	300	330	69	1
BC 238C	Ph	N	S	30	20	5	100	300	125	520	5	2	600	5	2	300	330	69	1
BC 239	Ph	N	S	30	20	5	100	300	125				240...900	5	2	300	330	69	1
BC 239C	Ph	N	S	30	20	5	100	300	125	520	5	2	600	5	2	300	330	69	1
BC 250A	It	P	S	20	20	5	100	300	175	35....100	1	1				180	500	9	1,5
BC 250B	It	P	S	20	20	5	100	300	175	80....250	1	1				180	500	9	1,5
BC 250C	It	P	S	20	20	5	100	300	175	200...600	1	1				180	500	9	1,5
BC 251A	Ns	P	S		45	5	20	200		40....400	1	1	5	5	10			67	1
BC 251B	Ns	P	S		45	5	20	200		240...500	5	2						67	1
BC 251CA	Ns	P	S		45	5	20	200		450...900	5	2						67	1
BC 252A	Ns	P	S		20	5	20	200		125...260	5	2						67	1
BC 252B	Ns	P	S		20	5	20	200		240...500	5	2						67	1
BC 252CA	Ns	P	S		20	5	20	200		450...900	5	2						67	1
BC 253A	Ns	P	S		20	5	20	200		40	5		125...260	5	2			67	1
BC 253B	Ns	P	S		20	5	20	200		40	5		240...500	5	2			67	1
BC 253CA	Ns	P	S		20	5	20	200		100	5		450...900	5	2			67	1
BC 254	Tx	N	S	100	55	6	30	250	150	50....600	5	1	45....800	5	1			34	1
BC 255	Tx	N	S	100	55	6	30	625	150	50....600	5	1	45....800	5	1			34	1
BC 256A	It	P	S		64	5	100	300	150	125...260	5	2				130	420	34	1,5
BC 256B	It	P	S		64	5	100	300	150	240...500	5	2				130	420	34	1,5
BC 260A	It	P	S	20	20	5	100	300	150	35....100	1	1				180	420	34	1,5
BC 260B	It	P	S	20	20	5	100	300	150	80....250	1	1				180	420	34	1,5
BC 260C	It	P	S	20	20	5	100	300	150	200...600	1	1				180	420	34	1,5
BC 261A	Ns	P	S		45		20	200					125...260	5	2			9	1
BC 261B	Ns	P	S		45		20	200					240...500	5	2			9	1
BC 262A	Ns	P	S		20	5	20	200					125...260	5	2			9	1
BC 262B	Ns	P	S		20	5	20	200					240...500	5	2			9	1
BC 263A	Ns	P	S		20	5	20	200		125...260	5	2						9	1
BC 263B	Ns	P	S		20	5	20	200		240...500	5	2						9	1
BC 266A	It	P	S		64	5	100	300	175	125...260	5	2				130	500	9	1
BC 266B	It	P	S		64	5	100	300	175	240...500	5	2				130	500	9	1
BC 267A	At	N	S	50	45	6	500	375	175				125...260	5	2	200	400	9	5,7

9



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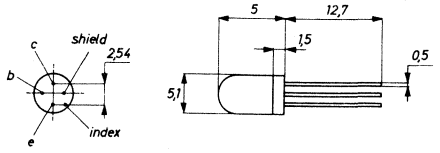

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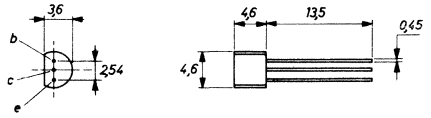

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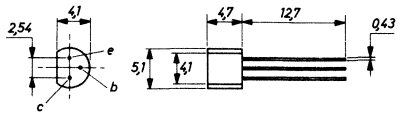

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BC 267B	At	N	S	50	45	6	500	375	175				240...500	5	2	200	400	9	5,7
BC 268A	At	N	S	30	20	6	500	375	175				125...260	5	2	200	400	9	5,7
BC 268B	At	N	S	30	20	6	500	375	175				240...500	5	2	200	400	9	5,7
BC 268C	At	N	S	30	20	6	500	375	175				450...900	5	2	200	400	9	5,7
BC 269B	At	N	S	30	20	6	500	375	175				240...500	5	2	200	400	9	5,7
BC 269C	At	N	S	30	20	6	500	375	175				450...900	5	2	200	400	9	5,7
BC 270/V	At	N	S	20	20	6	500	375	175				50....100	5	2	200	400	9	1,5
BC 270/VI	At	N	S	20	20	6	500	375	175				75....150	5	2	200	400	9	1,5
BC 270A	At	N	S	20	20	6	500	375	175				125...260	5	2	200	400	9	1,5
BC 270B	At	N	S	20	20	6	500	375	175				240...500	5	2	200	400	9	1,5
BC 270C	At	N	S	20	20	6	500	375	175				450...900	5	2	200	400	9	1,5
BC 297	At	P	S	50	45	5	1A	1W	175	75....260	1	100				150	400	9	1
BC 298/VI	At	P	S		25	5	1A	1W	175	75....150	1	100				150	400	9	1
BC 298/VII	At	P	S		25	5	1A	1W	175	125...260	1	100				150	400	9	1
BC 298/VIII	At	P	S		25	5	1A	1W	175	240...500	1	100				150	400	9	1
BC 300/IV	At	N	S	120	80	7	500	6W	175	40.....80	10	150	140	10	5	120	175	12	5
BC 300/V	At	N	S	120	80	7	500	6W	175	70....140	10	150	140	10	5	120	175	12	5
BC 300/VI	At	N	S	120	80	7	500	6W	175	120...240	10	150	140	10	5	120	175	12	5
BC 301	At	N	S	90	60	7	500	6W	175	40....240	10	150	140	10	5	120	175	12	5
BC 302/IV	At	N	S	60	45	7	500	6W	175	40.....80	10	150	140	10	5	120	175	12	5
BC 302/V	At	N	S	60	45	7	500	6W	175	70....140	10	150	140	10	5	120	175	12	5
BC 302/VI	At	N	S	60	45	7	500	6W	175	120...240	10	150	140	10	5	120	175	12	5
BC 303/IV	At	P	S	85	60	7	500	6W	175	40.....80	10	150	140	10	5	75	175	12	5
BC 303/V	At	P	S	85	60	7	500	6W	175	70....140	10	150	140	10	5	75	175	12	5
BC 303/VI	At	P	S	85	60	7	500	6W	175	120...240	10	150	140	10	5	75	175	12	5
BC 304/IV	At	P	S	60	45	7	500	6W	175	40.....80	10	150	140	10	5	75	175	12	5
BC 304/V	At	P	S	60	45	7	500	6W	175	70....140	10	150	140	10	5	75	175	12	5
BC 304/VI	At	P	S	60	45	7	500	6W	175	120...240	10	150	140	10	5	75	175	12	5
BC 307	Ph	P	S	50	45	5	100	300	125	140	5	2	75....250	5	2	150	330	69	1,7
BC 307/VI	Te	P	S	50	45	5	100	300	150	140	5	2	75....150	5	2	130	330	34	1
BC 307A	Te	P	S	50	45	5	100	300	150	180	5	2	125...260	5	2	130	330	34	1
BC 307B	Te	P	S	50	45	5	100	300	150	290	5	2	240...500	5	2	130	330	34	1
BC 308/VI	Te	P	S	30	25	5	100	300	150	140	5	2	75....150	5	2	130	330	34	1
BC 308A	Ph	P	S	30	25	5	100	300	125	180	5	2	125...260	5	2	150	330	69	1,7
BC 308B	Ph	P	S	30	25	5	100	300	125	190	5	2	240...500	5	2	150	330	69	1,7
BC 308C	Te	P	S	30	25	5	100	300	150	520	5	2	450...900	5	2	130	330	34	1
BC 309A	Ph	P	S	25	20	5	100	300	125	180	5	2	125...260	5	2	150	330	69	1,7
BC 309B	Ph	P	S	25	20	5	100	300	125	290	5	2	240...500	5	2	150	330	69	1,7
BC 309C	Te	P	S	25	20	5	100	300	150	520	5	2	450...900	5	2	130	330	34	1
BC 315	Tx	P	S	45	35	5	100	300	150	100...350	5	2	125	5	2	200		69	1
BC 317	Fa	N	S		45			625		90			125...500		2			90	1
BC 317A	Fa	N	S		45			625		90			125...260		2			90	1
BC 317B	Fa	N	S		45			625		150			240...500		2			90	1
BC 318	Fa	N	S		30			625		90			125...900		2			90	1
BC 318A	Fa	N	S		30			625		90			125...260		2			90	1
BC 318B	Fa	N	S		30			625		150			240...500		2			90	1
BC 318C	Fa	N	S		20			625		270			450...900		2			90	1
BC 319	Fa	N	S		20			625		150			240...900		2			90	1
BC 319B	Fa	N	S		20			625		150			250...500		2			90	1
BC 319C	Fa	N	S		20			625		270			450...900		2			90	1
BC 320	Fa	P	S		45			625		80			110...450		2			90	1
BC 320A	Fa	P	S		45			625		80			110...220		2			90	1
BC 320B	Fa	P	S		45			625		150			200...450		2			90	1
BC 321	Fa	P	S		30			625		80			110...800		2			90	1
BC 321A	Fa	P	S		30			625		80			110...220		2			90	1

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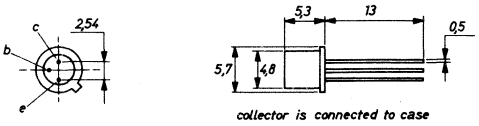

collector is connected to case

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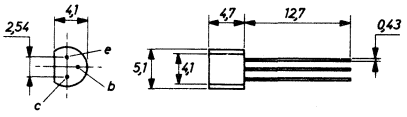

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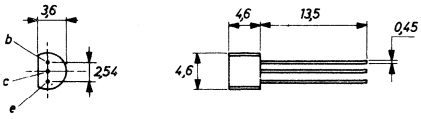

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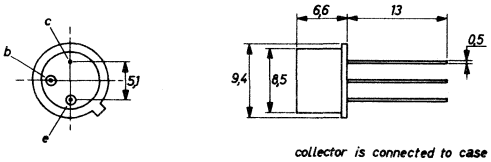

collector is connected to case

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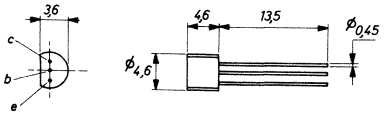

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BC 321B	Fa	P	S		30			625		150			200...450		2			90	1
BC 322	Fa	P	S		20			625		150			200...800		2			90	1
BC 322B	Fa	P	S		20			625		150			200...450		2			90	1
BC 327	Ph	P	S		45	5	500	625	150	100...600	1	500				100	250	84	1
BC 328	Ph	P	S		25	5	500	625	150	100...600	1	500				100	250	84	1
BC 329	Tx	N	S	60	60		30	250		220		2						61	1,5
BC 329B	Tx	N	S	60	60		30	250		240...500		2						61	1,5
BC 329C	Tx	N	S	60	60		30	250		450...900		2						61	1,5
BC 330	Tx	N	S	45	45		30	250		220		2						61	1,5
BC 330B	Tx	N	S	45	45		30	250		240...500		2						61	1,5
BC 330C	Tx	N	S	45	45		30	250		450...900		2						61	1,5
BC 331	Tx	N	S	60	60		30	250		100		2						61	1,5
BC 331A	Tx	N	S	60	60		30	250		120...260		2						61	1,5
BC 331B	Tx	N	S	60	60		30	250		240...500		2						61	1,5
BC 331C	Tx	N	S	60	60		30	250		450...900		2						61	1,5
BC 332	Tx	N	S	45	45		30	250		100		2						61	1,5
BC 332A	Tx	N	S	45	45		30	250		125...260		2						61	1,5
BC 332B	Tx	N	S	45	45		30	250		240...500		2						61	1,5
BC 332C	Tx	N	S	45	45		30	250		450...900		2						61	1,5
BC 337	Ph	N	S		45	5	500	625	150	100...600	1	100				200	250	84	1
BC 338	Ph	N	S		25	5	500	625	150	100...600	1	100				200	250	84	1
BC 340-6	It	N	S	40	40	5	500	3W	200	40....100	5	50				100	220	12	2,5
BC 340-10	It	N	S	40	40	5	500	3W	200	63....160	5	50				100	220	12	2,5
BC 340-16	It	N	S	40	40	5	500	3W	200	100...250	5	50				100	220	12	2,5
BC 341-6	It	N	S	60	60	5	500	3W	200	40....100	5	50				100	220	12	2,5
BC 341-10	It	N	S	60	60	5	500	3W	200	63....160	5	50				100	220	12	2,5
BC 360-6	It	P	S	40	40	5	500	3W	200	40....100	5	50				250	220	12	2,5
BC 360-10	It	P	S	40	40	5	500	3W	200	63....160	5	50				250	220	12	2,5
BC 360-16	It	P	S	40	40	5	500	3W	200	100...250	5	50				250	220	12	2,5
BC 361-6	It	P	S	60	60	5	500	3W	200	40....100	5	50				250	220	12	2,5
BC 361-10	It	P	S	60	60	5	500	3W	200	63....160	5	50				250	220	12	2,5
BC 370/V	At	P	S	20	20	5	500	375	175	50....100	5	10				150	400	9	1
BC 370/VI	At	P	S	20	20	5	500	375	175	75....150	5	10				150	400	9	1
BC 370A	At	P	S	20	20	5	500	375	175	240...500	5	10				150	400	9	1
BC 377/VI	At	N	S		45	6	1A	1W	175	75....150	1	100				200	400	9	2
BC 377/VII	At	N	S		45	6	1A	1W	175	125...260	1	100				200	400	9	2
BC 377/VIII	At	N	S		45	6	1A	1W	175	240...500	1	100				200	400	9	2
BC 378/VI	At	N	S		25	6	1A	1W	175	75....150	1	100				200	400	9	2
BC 378/VII	At	N	S		25	6	1A	1W	175	125...260	1	100				200	400	9	2
BC 378/VIII	At	N	S		25	6	1A	1W	175	240...500	1	100				200	400	9	2
BC 381	Tx	P	S	40	25	5	200	625	150	60	5	50						69	1
BC 382	Tx	N	S	50	45	6	100	300	150	100...480	5	2				150		69	1,5
BC 382B	Tx	N	S	50	45	6	100	300	150	240...500	5	2				150		69	1,5
BC 382C	Tx	N	S	50	45	6	100	300	150	450...900	5	2				150		69	1,5
BC 383	Tx	N	S	45	30	6	100	300	150	100...850	5	2				150		69	1,5
BC 383B	Tx	N	S	45	30	6	100	300	150	240...500	5	2				150		69	1,5
BC 383C	Tx	N	S	45	30	6	100	300	150	450...900	5	2				150		69	1,5
BC 384	Tx	N	S	45	30	6	100	300	150	250...400	5	2				150		69	1,5
BC 384B	Tx	N	S	45	30	6	100	300	150	240...500	5	2				150		69	1,5
BC 384C	Tx	N	S	45	30	6	100	300	150	450...900	5	2				150		69	1,5
BC 385	Tx	N	S	45	45	6	100	300	150	100...480	5	2	125...500	5	2	150		69	1,5
BC 385A	Tx	N	S	45	45	6	100	300	150	125...260	5	2	125...500	5	2	150		69	1,5
BC 385B	Tx	N	S	45	45	6	100	300	150	240...500	5	2	125...500	5	2	150		69	1,5
BC 386A	Tx	N	S	30	20	6	100	300	150	125...260	5	2	125...900	5	2	150		69	1,5
BC 386B	Tx	N	S	30	20	6	100	300	150	240...500	5	2	125...900	5	2	150		69	1,5

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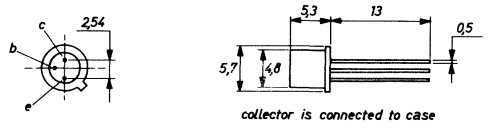

collector is connected to case

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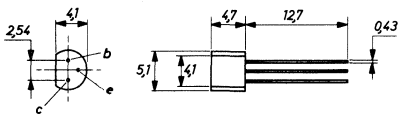

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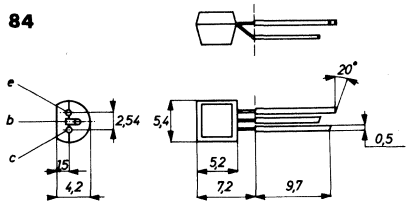

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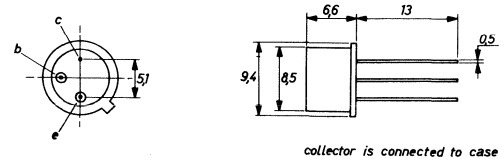

collector is connected to case

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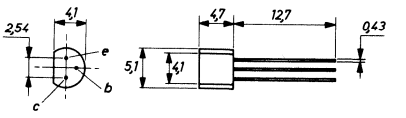

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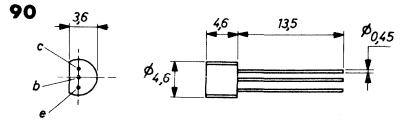

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BC 413B	Te	N	S	45	30	5	100	300	150	180...460	5	2	240...500	5	2	250	420	84	1
BC 413C	Te	N	S	45	30	5	100	300	150	380...800	5	2	450...900	5	2	250	420	84	1
BC 414B	Te	N	S	50	45	5	100	300	150	180...460	5	2	240...500	5	2	250	420	84	1
BC 414C	Te	N	S	50	45	5	100	300	150	380...800	5	2	450...900	5	2	250	420	84	1
BC 415A	Te	P	S	45	35	5	100	300	150	120...220	5	2	125...260	5	2	200	420	84	1
BC 415B	Te	P	S	45	35	5	100	300	150	180...460	5	2	240...500	5	2	200	420	84	1
BC 415C	Te	P	S	45	35	5	100	300	150	380...800	5	2	450...900	5	2	200	420	84	1
BC 416A	Te	P	S	50	45	5	100	300	150	120...200	5	2	125...260	5	2	200	420	84	1
BC 416B	Te	P	S	50	45	5	100	300	150	180...460	5	2	240...500	5	2	200	420	84	1
BC 416C	Te	P	S	50	45	5	100	300	150	380...800	5	2	450...900	5	2	200	420	84	1
BC 429	Tx	N	S		45		1A	8W		50....250		150						39	1
BC 429A	Tx	N	S		60		1A	8W		50....160		150						39	1
BC 430	Tx	P	S		45		1A	8W		50....250		150						39	1
BC 430A	Tx	P	S		60		1A	8W		50....160		150						39	1
BC 512	Tx	P	S	50	45		200	300		60....300		2						61	1,5
BC 513	Tx	P	S	30	25		200	300		80....400		2						61	1,5
BC 514	Tx	P	S	30	20		200	300		140...400		2						61	1,5
BC 582	Tx	N	S	50	45		200	300		100...480		2						61	1,5
BC 583	Tx	N	S	30	20		200	300		100...850		2						61	1,5
BCW 10	Fe	N	S	25	25	5	500	300		50....300	6	10				150		85	3
BCW 11	Fe	P	S	25	25	5	500	300		50....300	6	10				150		85	3
BCW 12	Fe	N	S	35	35	5	500	300		50....300	6	10				150		85	3
BCW 13	Fe	P	S	35	35	5	500	300		50....300	6	10				150		85	3
BCW 14	Fe	N	S	35	35	5	500	300		100...300	6	10				150		85	3
BCW 15	Fe	P	S	35	35	5	500	300		100...300	6	10				150		85	3
BCW 16	Fe	N	S	45	45	5	500	300		50....300	6	10				150		85	3
BCW 17	Fe	P	S	45	45	5	500	300		50....300	6	10				150		85	3
BCW 18	Fe	N	S	70	70	5	500	300		50....300	6	10				150		85	3
BCW 19	Fe	P	S	70	70	5	500	300		50....300	6	10				150		85	3
BCW 20	Fe	N	S	30	30	5	500	300		100...400	6	0,1				30		85	3,5
BCW 21	Fe	P	S	30	30	5	500	300		100...400	6	0,1				30		85	3,5
BCW 22	Fe	N	S	45	45	5	500	300		40....120	6	0,01				30		85	3,5
BCW 23	Fe	P	S	45	45	5	500	300		40....120	6	0,01				30		85	3,5
BCW 46	Ph	N	S	80	60	6	100	200	150	110...450	5	2	125...500	5	2	300	500	42	1,5
BCW 46A	Ph	N	S	80	60	6	100	200	150	110...220	5	2	125...260	5	2	300	500	42	1,5
BCW 46B	Ph	N	S	80	60	6	100	200	150	200...450	5	2	240...500	5	2	300	500	42	1,5
BCW 47	Ph	N	S	50	45	6	100	200	150	110...450	5	2	125...500	5	2	300	500	42	1,5
BCW 47A	Ph	N	S	50	45	6	100	200	150	110...220	5	2	125...260	5	2	300	500	42	1,5
BCW 47B	Ph	N	S	50	45	6	100	200	150	200...450	5	2	240...500	5	2	300	500	42	1,5
BCW 48	Ph	N	S	30	20	5	100	200	150	110...800	5	2	125...900	5	2	300	500	42	1,5
BCW 48A	Ph	N	S	30	20	5	100	200	150	110...220	5	2	125...260	5	2	300	500	42	1,5
BCW 48B	Ph	N	S	30	20	5	100	200	150	200...450	5	2	240...500	5	2	300	500	42	1,5
BCW 48C	Ph	N	S	30	20	5	100	200	150	420...800	5	2	450...900	5	2	300	500	42	1,5
BCW 49	Ph	N	S	30	20	5	100	200	150	200...800	5	2	240...900	5	2	300	500	42	1,5
BCW 49B	Ph	N	S	30	20	5	100	200	150	200...450	5	2	240...500	5	2	300	500	42	1,5
BCW 49C	Ph	N	S	30	20	5	100	200	150	420...800	5	2	450...900	5	2	300	500	42	1,5
BCW 51	Tx	N	S	50	30		200	300		100		0,1						61	1,5
BCW 52	Tx	P	S	50	30		200	300		150...350		20						61	1,5
BCW 56A	Ph	P	S	80	60	6	100	200	150	110...220	5	2	125...260	5	2	150	500	42	1,5
BCW 57A	Ph	P	S	50	45	6	100	200	150	110...220	5	2	125...260	5	2	150	500	42	1,5
BCW 58	Ph	P	S	30	20	5	100	200	150	110...450	5	2	125...500	5	2	150	500	42	1,5
BCW 58A	Ph	P	S	30	20	5	100	200	150	110...220	5	2	125...260	5	2	150	500	42	1,5
BCW 58B	Ph	P	S	30	20	5	100	200	150	200...450	5	2	240...500	5	2	150	500	42	1,5
BCW 59	Ph	P	S	30	20	5	100	200	150	110...450	5	2	125...500	5	2	150	500	42	1,5
BCW 59A	Ph	P	S	30	20	5	100	200	150	110...220	5	2	125...260	5	2	150	500	42	1,5

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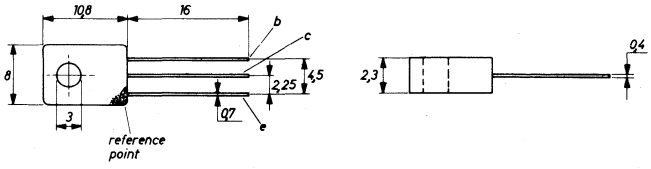

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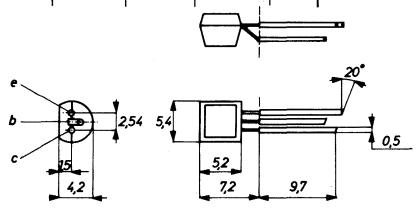

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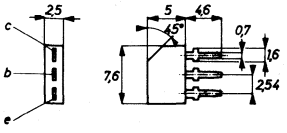

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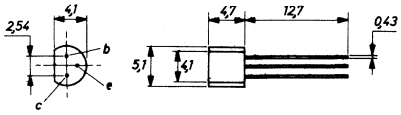

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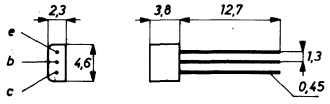

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BCW 59B	Ph	P	S	30	20	5	100	200	150	200...450	5	2	240...500	5	2	150	500	42	1,5
BCW 60A	Si	N	S		32	5	100	150	150	120...220	5	2	125...250	5	2	250	450	89	1,5
BCW 60B	Si	N	S		32	5	100	150	150	180...310	5	2	175...350	5	2	250	450	89	1,5
BCW 60C	Si	N	S		32	5	100	150	150	250...460	5	2	250...500	5	2	250	450	89	1,5
BCW 60D	Si	N	S		32	5	100	150	150	380...630	5	2	350...700	5	2	250	450	89	1,5
BCW 61A	Si	P	S		32	5	100	150	150	120...220	5	2	125...250	5	2	180	450	89	1,5
BCW 61B	Si	P	S		32	5	100	150	150	180...310	5	2	175...350	5	2	180	450	89	1,5
BCW 61C	Si	P	S		32	5	100	150	150	250...460	5	2	250...500	5	2	180	450	89	1,5
BCW 61D	Si	P	S		32	5	100	150	150	280...630	5	2	350...700	5	2	180	180	89	1,5
BCW 62	Tx	P	S	60	50		200	225		60....300		2						88	1,5
BCW 63	Tx	P	S	45	30		200	225		80....400		2						88	1,5
BCW 64	Tx	P	S	45	30		200	225		140...400		2						88	1,5
BCW 82	Tx	N	S	60	50		200	225		100...480		2						88	1
BCW 83	Tx	N	S	45	30		200	225		100...850		2						88	1
BCW 84	Tx	N	S	45	30		200	225		250		2						88	1
BCW 85	Tx	P	S	90	60	6	200	300	150	150...350	5	2	80....300	5	2	200		69	5
BCW 86	Tx	P	S	70	50	6	200	300	150	150...350	5	2	150...400	5	2	200		69	5
BCY 10	Ph	P	S	32		12	250	415	150	24	2	30	40	6	10	1,5	400	20	1
BCY 11	Ph	P	S	60		12	250	415	150	24	2	30	40	6	10	1,5	400	20	1
BCY 12	Ph	P	S	32		12	250	415	150	40	2	30	40	6	10	1,5	400	20	1
BCY 30	Ph	P	S	64	50	45	50	250	150	10.....35	4,5	20	15.....35	6	1	1,2	500	4	5
BCY 31	Ph	P	S	64	50	45	50	250	150	15.....60	4,5	20	25.....80	6	1	1,7	500	4	5
BCY 32	Ph	P	S	64	50	32	50	250	150	20.....70	4,5	20	35.....80	6	1	2,5	500	4	5
BCY 33	Ph	P	S	32	25	16	50	250	150	10.....35	4,5	20	15.....35	6	1,5	1,5	500	4	5
BCY 34	Ph	P	S	32	25	16	50	250	150	15.....60	4,5	20	25.....60	6	1	2,4	500	4	5
BCY 38	Ph	P	S	32	24	12	250	410	150	20	1	30	15....100	6	10	1,5	300	4	5
BCY 39	Ph	P	S	64	60	12	250	410	150	30	1	30	15....100	6	10	1,5	300	4	5
BCY 40	Ph	P	S	32	24	12	250	410	150	35	1	30	30....160	6	10	2,5	300	4	5
BCY 42	Fe	N	S	40	25	5	200	300		45.....90	6	10				100		9	3
BCY 43	Fe	N	S	40	25	5	200	300		75....150	6	10				100		9	3
BCY 54	Ph	P	S	50	50	12	250	410	150	20....100	1	30	20....120	6	10	2	300	4	5
BCY 56	Ph	N	S	45	45	5	100	300	175	100...450	5	2	125...500	5	2	250	500	9	5
BCY 57	Ph	N	S	25	20	5	100	300	175	200...800	5	2	240...900	5	2	350	500	9	5
BCY 58A	It	N	S	32	32	7	200	1W	200	120...220	5	2	125...250	5	2	250	450	9	1,5
BCY 58B	It	N	S	32	32	7	200	1W	200	180...310	5	2	175...350	5	2	250	450	9	1,5
BCY 58C	It	N	S	32	32	7	200	1W	200	380...630	5	2	350...700	5	2	250	450	9	1,5
BCY 58/VII	Ph	N	S		32	7	200	1W	200	120...220	5	2	125...250	5	2	280	450	9	1,5
BCY 58/VIII	Ph	N	S		32	7	200	1W	200	180...310	5	2	175...350	5	2	280	450	9	1,5
BCY 58/IX	Ph	N	S		32	7	200	1W	200	250...460	5	2	250...500	5	2	280	450	9	1,5
BCY 58/X	Ph	N	S		32	7	200	1W	200	380...630	5	2	350...700	5	2	280	450	9	1,5
BCY 59A	It	N	S	45	45	7	200	1W	200	120...220	5	2	125...250	5	2	250	450	9	1,5
BCY 59B	It	N	S	45	45	7	200	1W	200	180...310	5	2	175...350	5	2	250	450	9	1,5
BCY 59C	It	N	S	45	45	7	200	1W	200	250...460	5	2	250...500	5	2	250	450	9	1,5
BCY 59D	It	N	S	45	45	7	200	1W	200	380...630	5	2	350...700	5	2	250	450	9	1,5
BCY 59/VII	Ph	N	S		45	7	200	1W	200	120...220	5	2	125...250	5	2	280	450	9	1,5
BCY 59/VIII	Ph	N	S		45	7	200	1W	200	180...310	5	2	175...350	5	2	280	450	9	1,5
BCY 59/IX	Ph	N	S		45	7	200	1W	200	250...460	5	2	250...500	5	2	280	450	9	1,5
BCY 59/X	Ph	N	S		45	7	200	1W	200	380...630	5	2	350...700	5	2	280	450	9	1,5
BCY 65E	Si	N	S		60	7	100	1W	200	120...460	5	2	125...500	5	2	250	450	9	1,5
BCY 65/VII	Si	N	S		60	7	100	1W	200	120...250	5	2	125...250	5	2	250	450	9	1,5

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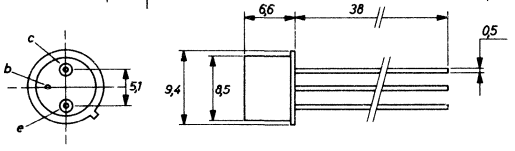

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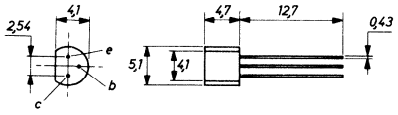

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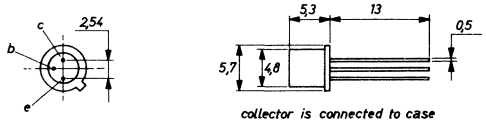

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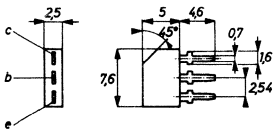

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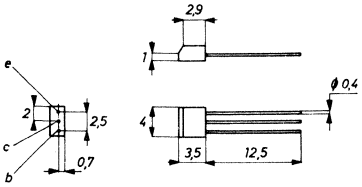

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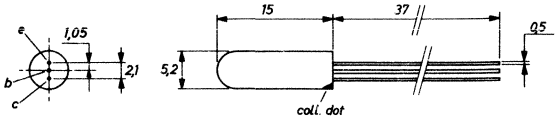

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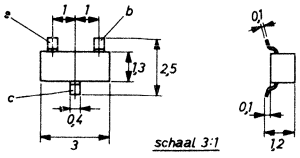
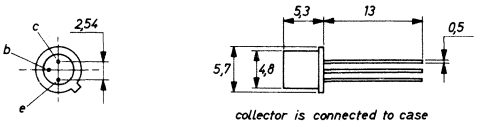


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BCY 65/VIII	Si	N	S		60	7	100	1W	200	180...310	5	2	175...350	5	2	250	450	9	1,5
BCY 65/IX	Si	N	S		60	7	100	1W	200	250...460	5	2	250...500	5	2	250	450	9	1,5
BCY 66	Si	N	S		45	7	50	1W	200	180...630		2	175...700	5	2	250	450	9	1
BCY 67	Si	N	S		45	5	50	1W	200	180...630		2	175...700	5	2	180	450	9	1
BCY 69	Se	N	S		20								600...900		2	150		9	3
BCY 70	Ph	P	S	50	40	5	200	350	200	50	1	10				250	500	9	1
BCY 71	Ph	P	S	45	45	5	200	350	200	100...600	1	10	100...400	10	1	250	500	9	1
BCY 71A	Ns	P	S	45	45		20	200		100...600	1	10	100...400	10	1	300		9	1
BCY 72	Ph	P	S	25	25	5	200	350	200	50	1	10				200	500	9	1
BCY 77/VII	Si	P	S		60	5	100	1W	200	120...220	5	2	125...250	5	2	180	450	9	1
BCY 77/VIII	Si	P	S		60	5	100	1W	200	180...310	5	2	175...350	5	2	180	450	9	1
BCY 77/IX	Si	P	S		60	5	100	1W	200	250...460	5	2	250...300	5	2	180	450	9	1
BCY 78A	It	P	S	32	32	5	200	770	200	120...220	5	2	125...250	5	2	180	500	9	1,5
BCY 78B	It	P	S	32	32	5	200	770	200	180...310	5	2	175...350	5	2	180	500	9	1,5
BCY 78C	It	P	S	32	32	5	200	770	200	250...460	5	2	250...500	5	2	180	500	9	1,5
BCY 78D	It	P	S	32	32	5	200	770	200	380...630	5	2	350...700	5	2	180	500	9	1,5
BCY 78/VII	Si	P	S		32	5	200	1W	200	120...220	5	2	125...250	5	2	180	450	9	1
BCY 78/VIII	Si	P	S		32	5	200	1W	200	180...310	5	2	175...350	5	2	180	450	9	1
BCY 78/IX	Si	P	S		32	5	200	1W	200	250...460	5	2	250...300	5	2	180	450	9	1
BCY 78/X	Si	P	S		32	5	200	1W	200	380...630	5	2	350...700	5	2	180	450	9	1
BCY 79A	It	P	S	45	45	5	200	770	200	120...220	5	2	125...250	5	2	180	500	9	1,5
BCY 79B	It	P	S	45	45	5	200	770	200	180...310	5	2	175...350	5	2	180	500	9	1,5
BCY 79C	It	P	S	45	45	5	200	770	200	250...500	5	2	250...500	5	2	180	500	9	1,5
BCY 79/VII	Te	P	S		45	5	200	770	200	120...220	5	2	125...250	5	2	200	500	9	1
BCY 79/VIII	Te	P	S		45	5	200	770	200	180...310	5	2	175...350	5	2	200	500	9	1
BCY 79/IX	Te	P	S		45	5	200	770	200	250...460	5	2	250...500	5	2	200	500	9	1
BCY 85	Tx	N	S	100	60	7	200	300	150	100...400	5	2	100...500	5	2	200		69	5
BCY 85A	Tx	N	S	100	60	7	200	300	150	100...300	5	2				200		69	5
BCY 85B	Tx	N	S	100	60	7	200	300	150	250...400	5	2				200		69	5
BCY 86	Tx	N	S	80	50	7	200	300	150	100...600	5	2	250...800	5	2	200		69	5
BCY 86A	Tx	N	S	80	50	7	200	300	150	250...450	5	2				200		69	5
BCY 86B	Tx	N	S	80	50	7	200	300	150	400...600	5	2				200		69	5
BCZ 10	Ph	P	S	25	25	20	50	250	150				20	6	1		500	20	1
BCZ 11	Ph	P	S	25	25	20	50	250	150				35	6	1		500	20	1
BCZ 12	Ph	P	S	60	60	30	50	250	150				15	6	1		500	20	1
BD 106A	It	N	S	36	36	5	2A	11W	175	50....150	2	500				100		40	2
BD 106B	It	N	S	36	36	5	2A	11W	175	100...300	2	500				100		40	2
BD 107A	It	N	S	64	64	5	2A	11W	175	50....150	2	500				100		40	2
BD 107B	It	N	S	64	64	5	2A	11W	175	100...300	2	500				100		40	2
BD 109	Si	N	S	60	40	5	3A	18W	175	40....250	1	1A				30		40	2,5
BD 115	Ph	N	S	245	180	5	150	6W	200	60	100	50				145	200	12	2,7
BD 124	Ph	N	S	70	45	6	2A	15W	175	75	5	500				120		40	2
BD 127	Te	N	S	300	250	5	500	17W	150	50	15	1						39	2
BD 128	Te	N	S	350	300	5	500	17W	150	50	15	1						39	2
BD 129	Te	N	S	400	350	5	500	17W	150	50	15	1						39	2

9



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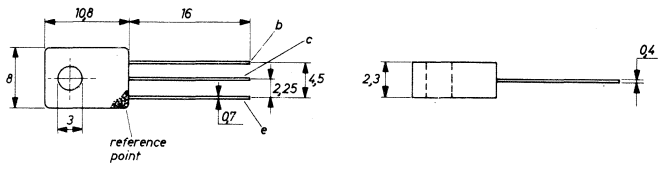

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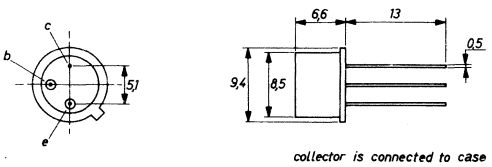

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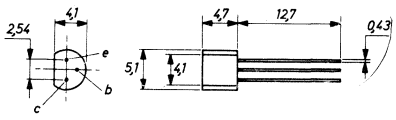

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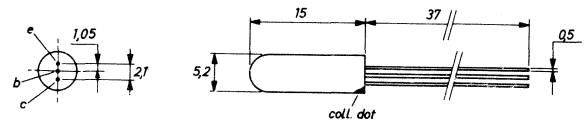

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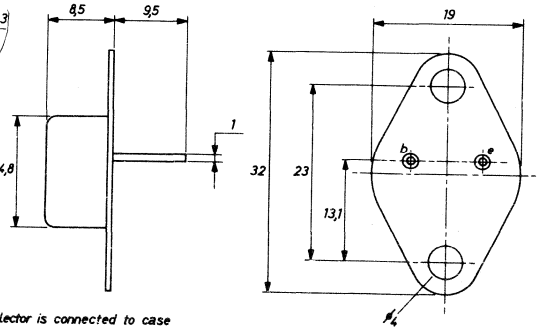
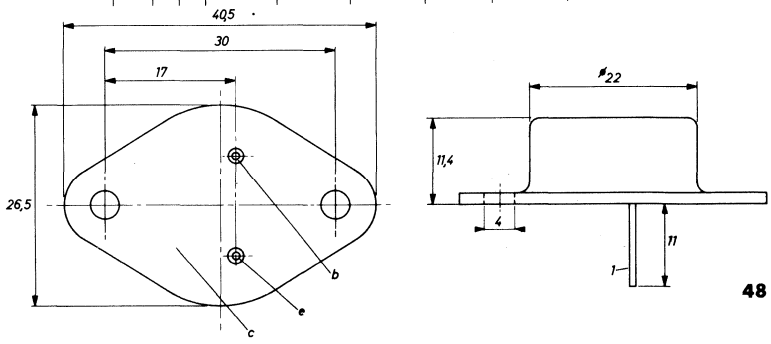


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BD 131	Ph	N	S	70	45	6	3A	11W	125	40	12	500				60		39	2
BD 132	Ph	P	S	45	45	4	3A	11W	125	40	12	500				60		39	2
BD 133	Ph	N	S	90	60	6	3A	11W	125	40	12	500				60		39	2
BD 135	Ph	N	S	45	45	5	500	6W	125	40....250	2	150				250	100	39	2, 7
BD 136	Ph	P	S	45	45	5	500	6W	125	40....250	2	150				75	100	39	2, 7
BD 137	Ph	N	S	60	60	5	500	6W	125	40....160	2	150				250	100	39	2, 7
BD 138	Ph	P	S	60	60	5	500	6W	125	40....160	2	150				75	100	39	2, 7
BD 139	Ph	N	S	100	80	5	500	6W	125	40....160	2	150				250	100	39	2, 7
BD 140	Ph	P	S	100	80	5	500	6W	125	40....160	2	150				75	100	39	2, 7
BD 141	At	N	S	140	120	7	8A	117W	200	20.....70	4	2A						3	2
BD 142	At	N	S	50	40	5	15A	117W	200	60....145	4	500				1, 3		3	2
BD 162	At	N	S	40	20	7	4A	19W	200	40....180	2	500				1, 75		40	2, 5
BD 163	At	N	S	60	40	7	4A	19W	200	40....180	2	500				1, 75		40	2, 5
BD 165	Te	N	S	45	45	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 166	Te	P	S	45	45	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 167	Te	N	S	60	60	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 168	Te	P	S	60	60	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 169	Te	N	S	80	80	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 170	Te	P	S	80	80	5	1A	20W	150	40	2	150				3	100	39	2, 7
BD 181	Ph	N	S	55	45	7	10A	78W	200	40	4	3A					45	3	2
BD 182	Ph	N	S	70	60	7	15A	117W	200	20.....70	4	4A					45	3	2
BD 183	Ph	N	S	85	80	7	15A	117W	200	40	4	3A					45	3	2
BD 213/45	Te	N	S	45	45	7	15A	90W	150	25	2	5A				3		48	2
BD 213/60	Te	N	S	60	60	7	15A	90W	150	25	2	5A				3		48	2
BD 213/80	Te	N	S	80	80	7	15A	90W	150	15	2	5A				3		48	2
BD 214/45	Te	P	S	45	45	7	15A	90W	150	25	2	5A				3		48	2
BD 214/60	Te	P	S	60	60	7	15A	90W	150	25	2	5A				3		48	2
BD 214/80	Te	P	S	80	80	7	15A	90W	150	15	2	5A				3		48	2
BD 215	At	N	S		300	6	500	21W	175	40	10	100				10		40	2, 7
BD 226	Ph	N	S	45	45	5	1, 5A	12W	150	40....270	2	150				125	100	39	7
BD 227	Ph	P	S	45	45	5	1, 5A	12W	150	40....250	2	150				50	100	39	7
BD 228	Ph	N	S	60	60	5	1, 5A	12W	150	40....160	2	150				125	100	39	7
BD 229	Ph	P	S	60	60	5	1, 5A	12W	150	40....160	2	150				50	100	39	7
BD 230	Ph	N	S	100	80	5	1, 5A	12W	150	40....160	2	150				125	100	39	7
BD 231	Ph	P	S	100	80	5	1, 5A	12W	150	40....160	2	150				50	100	39	7
BD 233	Te	N	S	45	45	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 234	Te	P	S	45	45	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 235	Te	N	S	60	60	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 236	Te	P	S	60	60	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 237	Te	N	S	80	80	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 238	Te	P	S	80	80	5	2A	25W	150	40	2	150				3	100	39	2, 7
BD 239	Tx	N	S		45		2A	30W		40		200						49	2
BD 239A	Tx	N	S		60		2A	30W		40		200						49	2
BD 239B	Tx	N	S		80		2A	30W		15		1A						49	2
BD 239C	Tx	N	S		100		2A	30W		15		1A						49	2

3



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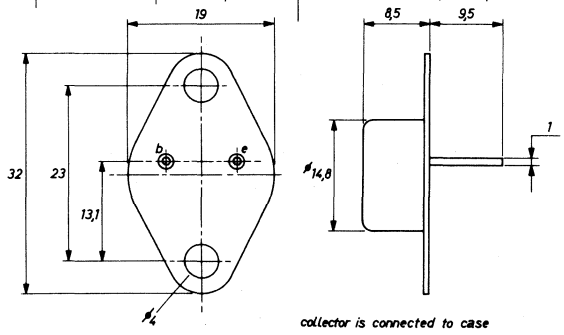

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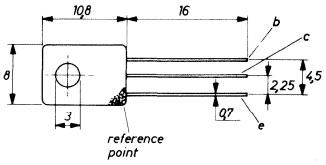

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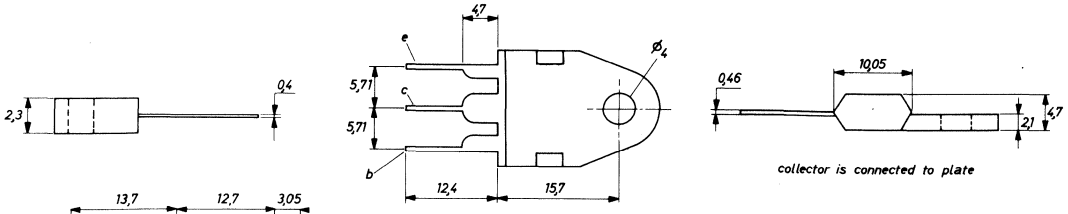

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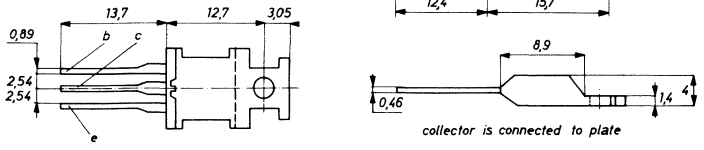

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
BD 240	Tx	P	S		45		2A	30W		40		200						49	2
BD 240A	Tx	P	S		60		2A	30W		40		200						49	2
BD 240B	Tx	P	S		80		2A	30W		15		1A						49	2
BD 240C	Tx	P	S		100		2A	30W		15		1A						49	2
BD 241	Tx	N	S		45		3A	40W		25		1A						49	2,5
BD 241A	Tx	N	S		60		3A	40W		25		1A						49	2,5
BD 241B	Tx	N	S		80		3A	40W		10		3A						49	2,5
BD 241C	Tx	N	S		100		3A	40W		10		3A						49	2,5
BD 242	Tx	P	S		45		3A	40W		25		1A						49	2,5
BD 242A	Tx	P	S		60		3A	40W		25		1A						49	2,5
BD 242B	Tx	P	S		80		3A	40W		10		3A						49	2,5
BD 242C	Tx	P	S		100		3A	40W		10		3A						49	2,5
BD 243	Tx	N	S		45		6A	65W		30		300						49	2,5
BD 243A	Tx	N	S		60		6A	65W		30		300						49	2,5
BD 243B	Tx	N	S		80		6A	65W		15		3A						49	2,5
BD 243C	Tx	N	S		100		6A	65W		15		3A						49	2,5
BD 244	Tx	P	S		45		6A	65W		30		300						49	2,5
BD 244A	Tx	P	S		60		6A	65W		30		300						49	2,5
BD 244B	Tx	P	S		80		6A	65W		15		3A						49	2,5
BD 244C	Tx	P	S		100		6A	65W		15		3A						49	2,5
BD 245	Tx	N	S		45		10A	80W		40		1A						48	2,5
BD 245A	Tx	N	S		60		10A	80W		40		1A						48	2,5
BD 245B	Tx	N	S		80		10A	80W		20		3A						48	2,5
BD 245C	Tx	N	S		100		10A	80W		20		3A						48	2,5
BD 246	Tx	P	S		45		10A	80W		40		1A						48	2,5
BD 246A	Tx	P	S		60		10A	80W		40		1A						48	2,5
BD 246B	Tx	P	S		80		10A	80W		20		3A						48	2,5
BD 246C	Tx	P	S		100		10A	80W		20		3A						48	2,5
BD 249	Tx	N	S		45		25A	125W		25		1,5A						48	2,5
BD 249A	Tx	N	S		60		25A	125W		25		1,5A						48	2,5
BD 249B	Tx	N	S		80		25A	125W		10		15A						48	2,5
BD 249C	Tx	N	S		100		25A	125W		10		15A						48	2,5
BD 250	Tx	P	S		45		25A	125W		25		1,5A						48	2,5
BD 250A	Tx	P	S		60		25A	125W		25		1,5A						48	2,5
BD 250B	Tx	P	S		80		25A	125W		10		15A						48	2,5
BD 250C	Tx	P	S		100		25A	125W		10		15A						48	2,5
BD 400	Tx	N	S		100		1A	20W		40		500						39	7
BD 410	Tx	N	S		325		1A	20W		30....240		50						39	7
BD 461	Tx	N	S		30		4A	30W		80....320		500						39	2,5
BD 462	Tx	P	S		30		4A	30W		80....320		500						39	2,5
BD 463	Tx	N	S		35		4A	30W		60....330		500						39	2,5
BD 464	Tx	P	S		35		4A	30W		60....320		500						39	2,5
BD 466	Tx	P	S		45		1A	8W										39	2,5
BD 477	Tx	N	S		45		1A	8W										39	2,5
BD 585	Te	N	S	45	45	5	4A	42W	150	40	2	500				3		49	2
BD 586	Te	P	S	45	45	5	4A	42W	150	40	2	500				3		49	2
BD 587	Te	N	S	60	60	5	4A	42W	150	40	2	500				3		49	2
BD 588	Te	P	S	60	60	5	4A	42W	150	40	2	500				3		49	2
BD 589	Te	N	S	80	80	5	4A	42W	150	30	2	500				3		49	2
BD 590	Te	P	S	80	80	5	4A	42W	150	30	2	500				3		49	2
BD 595	Te	N	S	45	45	5	8A	55W	150	40	2	1A				3		49	2
BD 596	Te	P	S	45	45	5	8A	55W	150	40	2	1A				3		49	2
BD 597	Te	N	S	60	60	5	8A	55W	150	40	2	1A				3		49	2
BD 598	Te	P	S	60	60	5	8A	55W	150	40	2	1A				3		49	2
BD 599	Te	N	S	80	80	5	8A	55W	150	30	2	1A				3		49	2

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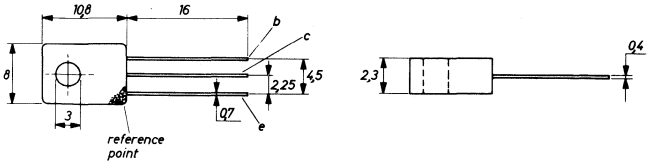

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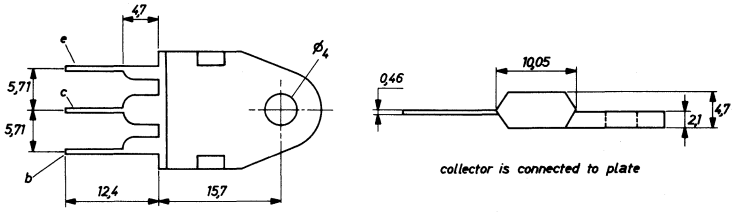

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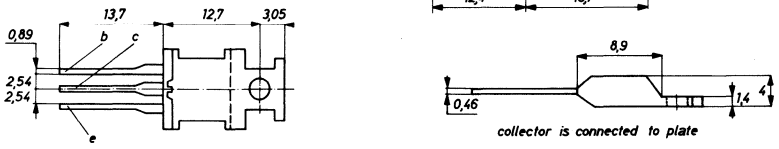
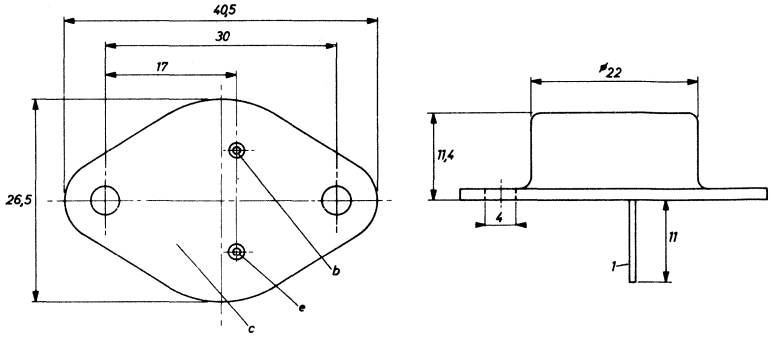


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BD 600	Te	P	S	80	80	5	8A	55W	150	30	2	1A				3		49	2
BDX 10/IV	At	N	S	100	60	7	15A	117W	200	20.....50	4	500				1,3		3	2,5
BDX 10/V	At	N	S	100	60	7	15A	117W	200	35.....75	4	500				1,3		3	2,5
BDX 10/VI	At	N	S	100	60	7	15A	117W	200	60....145	4	500				1,3		3	2,5
BDX 10/VII	At	N	S	100	60	7	15A	117W	200	120...250	4	500				1,3		3	2,5
BDX 11	At	N	S	160	140	7	10A	117W	200	20.....70	4	3A						3	5
BDX 12	At	N	S	140	120	7	5A	100W	200	20.....70	4	2A						3	5
BDX 13/IV	At	N	S	50	40	5	15A	117W	200	20.....50	4	500				1,3		3	2
BDX 13/V	At	N	S	50	40	5	15A	117W	200	35.....75	4	500				1,3		3	2
BDX 13/VI	At	N	S	50	40	5	15A	117W	200	60....145	4	500				1,3		3	2
BDX 13/VII	At	N	S	50	40	5	16A	117W	200	120...250	4	500				1,3		3	2
BDY 12-6	Si	N	S		40	5	3A	26W	175	40....100	1	1A				70		40	2
BDY 12-10	Si	N	S		40	5	3A	26W	175	63....160	1	1A				70		40	2
BDY 12-16	Si	N	S		40	5	3A	26W	175	100...250	1	1A				70		40	2
BDY 13-6	Si	N	S		60	5	3A	26W	175	40....100	1	1A				70		40	2
BDY 13-10	Si	N	S		60	5	3A	26W	175	63....160	1	1A				70		40	2
BDY 13-16	Si	N	S		60	5	3A	26W	175	100...250	1	1A				70		40	2
BDY 15A	It	N	S	36	36	5	2A	11W	175	50....150	2	500				100		40	2,5
BDY 15B	It	N	S	36	36	5	2A	11W	175	100...300	2	500				100		40	2,5
BDY 15C	It	N	S	36	36	5	2A	11W	175	200...600	2	500				100		40	2,5
BDY 16A	It	N	S	64	64	5	2A	11W	175	50....150	2	500				100		40	2,5
BDY 16B	It	N	S	64	64	5	2A	11W	175	100...300	2	500				100		40	2,5
BDY 20	Ph	N	S	100	60	7	15A	115W	200	20.....70	4	4A				1	40	3	2
BDY 23	Se	N	S	60	60		6A	85W		15....180		2A				10		3	2
BDY 24	Se	N	S	100	90			85W		15....180		2A				10		3	2
BDY 25	Se	N	S	200	180			85W		15....180		2A				10		3	2
BDY 26	Se	N	S	300	180			85W		15....180		2A				10		3	2
BDY 27	Se	N	S	300	200			85W		15....180		2A				10		3	2
BDY 28	Se	N	S	500	250			85W		15....180		2A				10		3	2
BDY 34	Te	N	S	45	40	5,5	3A	21W	150	30....300	2	2A				80		39	2
BDY 38	Ph	N	S	50	40	7	6A	115W	200	30	4	2A				1	40	3	2
BDY 39	Si	N	S	100	60	7	15A	115W	200	25....100	4	4A				1,1		3	2
BDY 55	Se	N	S	100	60			115W		20.....70		4A				10		3	2
BDY 56	Se	N	S	180	120			115W		20.....70		4A				10		3	2
BDY 57	Se	N	S	120	80			150W		20.....60		10A				10		3	2
BDY 58	Se	N	S	180	125			150W		20.....60		10A				10		3	2
BDY 60	Ph	N	S	60	60	5	5A	15W	175	40	2	1A				100	40	3	2,5
BDY 61	Ph	N	S	60	60	5	5A	15W	175	38	2	1A				100	40	3	2,5
BDY 71	Se	N	S	80	55			29W		80....200		500				0,8		40	2
BDY 72	Se	N	S	150	120			25W		60....180		500				0,8		40	2
BDY 73	Se	N	S	100	60			117W		50....150		4A				0,8		3	2
BDY 74	Se	N	S	150	120			117W		50....150		3A				0,8		3	2
BDY 75	Se	N	S	60	40			150W		40....120		15A				0,8		3	2
BDY 76	Se	N	S	100	60		20A	150W		40....120		10A				0,8		3	2
BDY 77	Se	N	S	150	120		15A	150W		40....120		8A				0,8		3	2
BDY 78	Se	N	S	90	55		4A	25W		25....100		500				0,8		40	2
BDY 79	Se	N	S	150	120		4A	25W		25....100		500				0,8		40	2
BDY 90	Ph	N	S	120	100	6	10A	40W	175	30....120	5	5A				70	40	3	5
BDY 91	Ph	N	S	100	80	6	10A	40W	175	30....120	5	5A				70	40	3	5
BDY 92	Ph	N	S	80	60	6	10A	40W	175	30....120	5	5A				70	40	3	5

3



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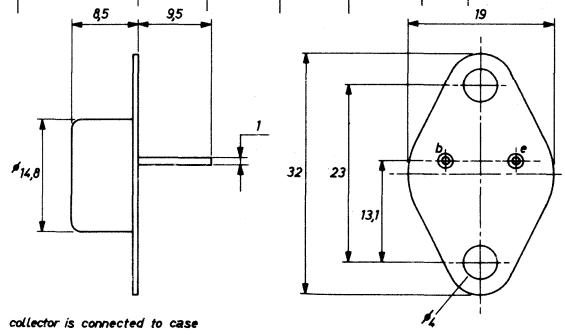

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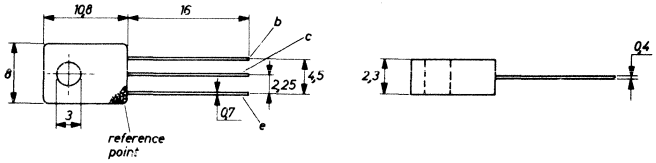

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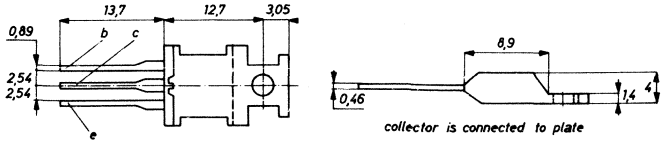
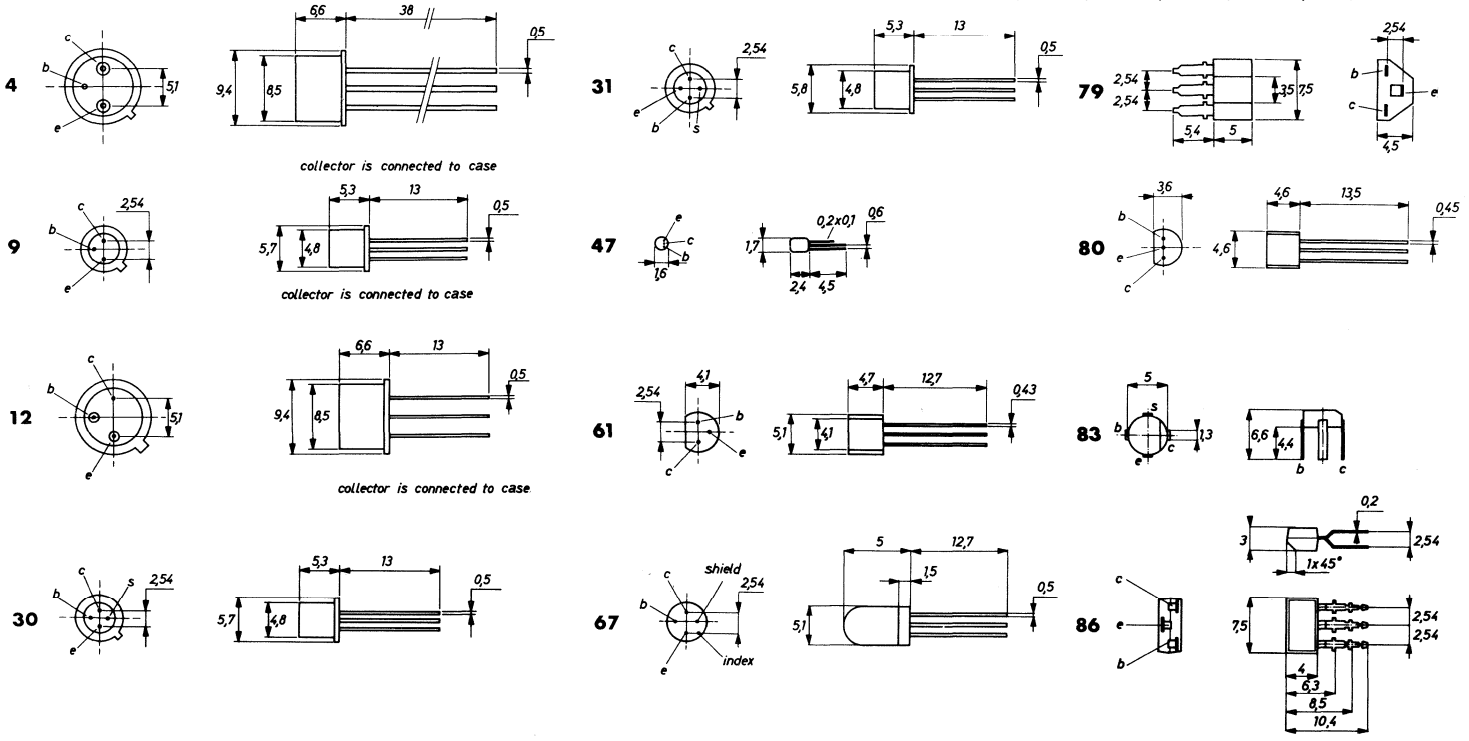


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)	Case	Use
BF 110	Si	N	S		160	5	40	2W	200	30		10				150	250	12	7
BF 115	Ph	N	S	50	30	5	30	145	175	45....165	10	1				230	900	31	3
BF 117	It	N	S	140	140	5	100	1,3W	175				30.....90	0,5	0,2	80			
BF 120	It	N	S		220	5	50	750	175	20	10	10					500	9	7
BF 121	It	N	S		30	4	25	330	125	80	10	4				350	300	83	6
BF 123	It	N	S		30	4	30	330	125	90	10	7				550	300	83	6
BF 125	It	N	S		30	4	30	330	125	90	10	7				450	300	83	6
BF 127	It	N	S		30	4	25	330	125	80	10	4				350	300	83	6
BF 137	It	N	S	160	160	5	100	1,3W	175	25	10	30				95	220	12	7
BF 153	Ns	N	S	30	12	2	20	200		20	6	3				300		67	3
BF 160	Ns	N	S	30	12	2	20	200		20	10	3				400		67	3
BF 167	Ph	N	S	40	30	4	25	130	175							350	1000	31	3
BF 173	Ph	N	S	40	25	4	25	260	175							550	500	31	3
BF 177	Ph	N	S	100	60	5	50	600	200	20	10	15				120	220	12	7
BF 178	Ph	N	S	185	115	5	50	600	200	20	20	30				120	220	12	7
BF 179	Ph	N	S	250	115	5	50	600	200	20	15	20				120	220	12	7
BF 179A	Te	N	S	185		5	50	600	200	20	15	20				120	220	4	6
BF 179B	Te	N	S	220		5	50	600	200	20	15	20				120	220	4	6
BF 179C	Te	N	S	250		5	50	600	200	20	15	20				120	220	4	6
BF 180	Ph	N	S	30	20	3	20	150	175							675	1000	30	6
BF 181	Ph	N	S	30	20	3	20	150	175							600	1000	30	6
BF 182	Ph	N	S	25	20	3	15	150	175							650	1000	30	6
BF 183	Ph	N	S	25	20	3	15	150	175							800	1000	30	6
BF 184	Ph	N	S	30	20	5	30	145	175	115	10	1				300	900	31	6
BF 185	Ph	N	S	30	20	5	30	145	175	67	10	1				220	900	31	6
BF 194	Ph	N	S	30	20	5	30	250	125	115	10	1				260	400	79	3
BF 195	Ph	N	S	30	20	5	30	250	125	67	10	1				200	400	79	3
BF 196	Ph	N	S	40	30	4	25	250	125							400	400	79	7
BF 197	Ph	N	S	40	25	4	25	250	125							550	400	79	7
BF 198	Ph	N	S	40	30	4	25	500	150							400	250	80	7
BF 199	Ph	N	S	40	25	4	25	500	150							550	250	80	7
BF 200	Ph	N	S	30	20	3	20	150	175							650	1000	30	6
BF 223	Te	N	S	35	25	4	40	360	150	79	10	15				750	350	86	6
BF 224	Tx	N	S	45	30	4	50	250	150	30	10	7				700		61	3,6
BF 225	Tx	N	S	50	40	4	50	250	150	75	10	4				700		61	3,6
BF 227	Te	N	S	40	25	4	25	50	125	100	10	3				600	1600	47	3
BF 228	Te	N	S	100		7	50	50	125	30	10	2				50	1600	47	3
BF 229	Te	N	S	30	20	5	30	50	125	67....220	10	1				260	1600	47	3
BF 230	Te	N	S	30	20	5	30	50	125	36....125	10	1				200	1600	47	3
BF 237	Tx	N	S	45	30	4	30	250	150				30.....90	10	1			61	1



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BF 238	Tx	N	S	45	30	4	30	250	150				60	10	1			61	1
BF 240	Te	N	S	40	40	4	25	300	150	67. . . . 220	10	1				430	350	87	3
BF 241	Te	N	S	40	40	4	25	300	150	36. . . . 125	10	1				400	350	87	3
BF 254	Ph	N	S	30	20	5	30	300	125	115	10	1				260	330	61	3, 6
BF 255	Ph	N	S	30	20	5	30	300	125	67	10	1				200	330	61	3, 6
BF 257	Tx	N	S	160	160	5	100	5W	175	25	10	30				90		12	2, 7
BF 258	Tx	N	S	250	250	5	100	5W	175	25	10	30				90		12	2, 7
BF 259	Tx	N	S	300	300	5	100	5W	175	25	10	30				90		12	2, 7
BF 260	At	N	S	45	30	4	50	230	175	70	6	1				800	1000	31	3
BF 261	At	N	S	40	30	4	50	230	175	70	6	1				730	1000	31	3
BF 297	Tx	N	S	160	160	5	100	625	150	30. . . . 150	10	30				95		69	1
BF 298	Tx	N	S	250	250	5	100	625	150	30. . . . 150	10	30				95		69	1
BF 299	Tx	N	S	300	300	5	100	625	150	30. . . . 150	10	30				95		69	1
BF 302	At	N	S	40	30	4	50	230	175	35. . . . 125	6	1				650	1000	31	3
BF 303	At	N	S	40	30	4	50	230	175	110. . . 220	6	1				500	1000	31	3
BF 304	At	N	S	40	30	4	50	230	175	35. . . . 120	6	1				500	1000	31	3
BF 305	At	N	S	185	150		100	2W	200	75	20	30				100	220	12	6
BF 306	At	N	S	40	25	4	25	230	175							1000		31	7
BF 310	Te	N	S	30	30	4	25	300	150	29	10	4				580	350	84	3
BF 311	Te	N	S	35	25	4	40	360	150	79	10	15				750	350	87	3
BF 314	Te	N	S	30	30	4	25	300	150	29	10	4				450	350	84	3
BF 329	At	N	S	40	30	4	50	250	125	70	6	1				730	400	41	6
BF 330	At	N	S	40	25	4	25	250	125							1000	400	41	6
BF 332	At	N	S	30	20	5	30	250	125							600	0,4	41	6
BF 333	At	N	S	30	20	5	30	250	125							400	0,4	41	6
BF 334	Ph	N	S	40	30	4	25	250	125	65. . . . 125	10	1				370	400	79	3
BF 335	Ph	N	S	40	30	4	25	250	125	35. . . . 125	10	1				370	400	79	3
BF 336	Ph	N	S	185	180	5	100	3W	200	60	10	30				130	220	12	7
BF 337	Ph	N	S	250	200	5	100	3W	200	60	10	30				130	220	12	7
BF 338	Ph	N	S	300	225	5	100	3W	200	60	10	30				130	220	12	7
BF 340	Tx	P	S	35	32	5	50	250	150	30	9	1				80		61	3
BF 341	Tx	P	S	35	32	5	50	250	150	45. . . . 150	9	1				80		61	3
BF 342	Tx	P	S	35	32	5	50	250	150	60. . . . 150	9	1				80		61	3
BF 343	Tx	P	S	35	32	5	50	250	150	30	9	1				80		61	3
BF 344	At	N	S	30	20	4	50	230	175	90. . . . 220	10	1				500		9	3
BF 345	At	N	S	30	20	4	50	230	175	40. . . . 115	10	1				500		9	3
BF 357	Tx	N	S	30	15	3	50	200	150				20. . . . 350	6	5	1600		69	3
BF 377	Te	N	S	30	15	2, 5	25	300	150	25. 90	1	2				1300	350	84	3
BF 378	Te	N	S	30	15	2, 5	25	300	150	25. 90	1	2				1300	350	87	3
BF 379	Te	P	S	40	25	4	25	300	150	80	10	1				520	350	84	3
BF 384	Tx	N	S	30	20	5	30	250	150	75. . . . 750	10	1				800		61	3
BF 385	Tx	N	S	30	20	5	30	250	150	34. . . . 140	10	1				800		61	3
BF 390	At	N	S	310	180	5	100	2W	175	110	15	20				120	180	12	7
BF 397A	Tx	P	S	90	90	6	100	625	150	40. . . . 150	10	10						69	1
BF 397B	Tx	P	S	90	90	6	100	625	150	130. . . 250	10	10						69	1

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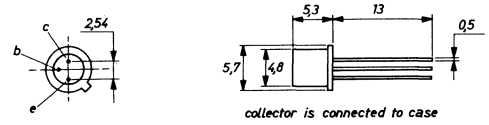

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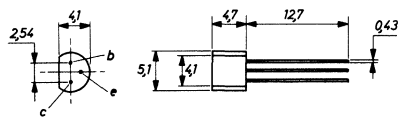

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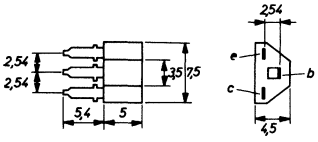

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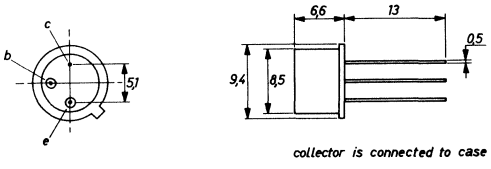

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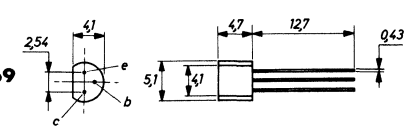

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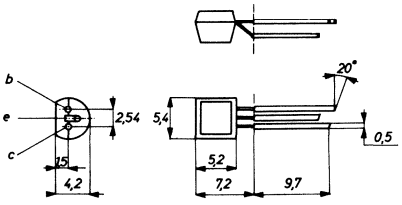

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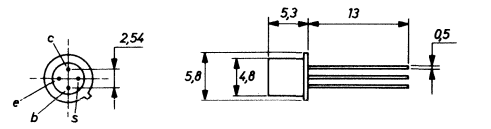

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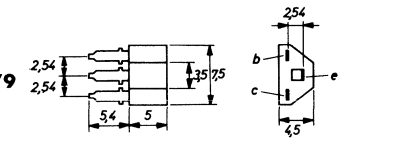

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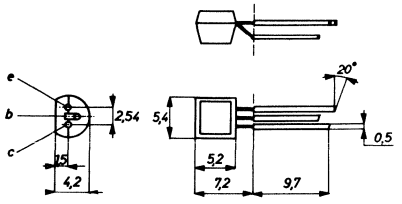
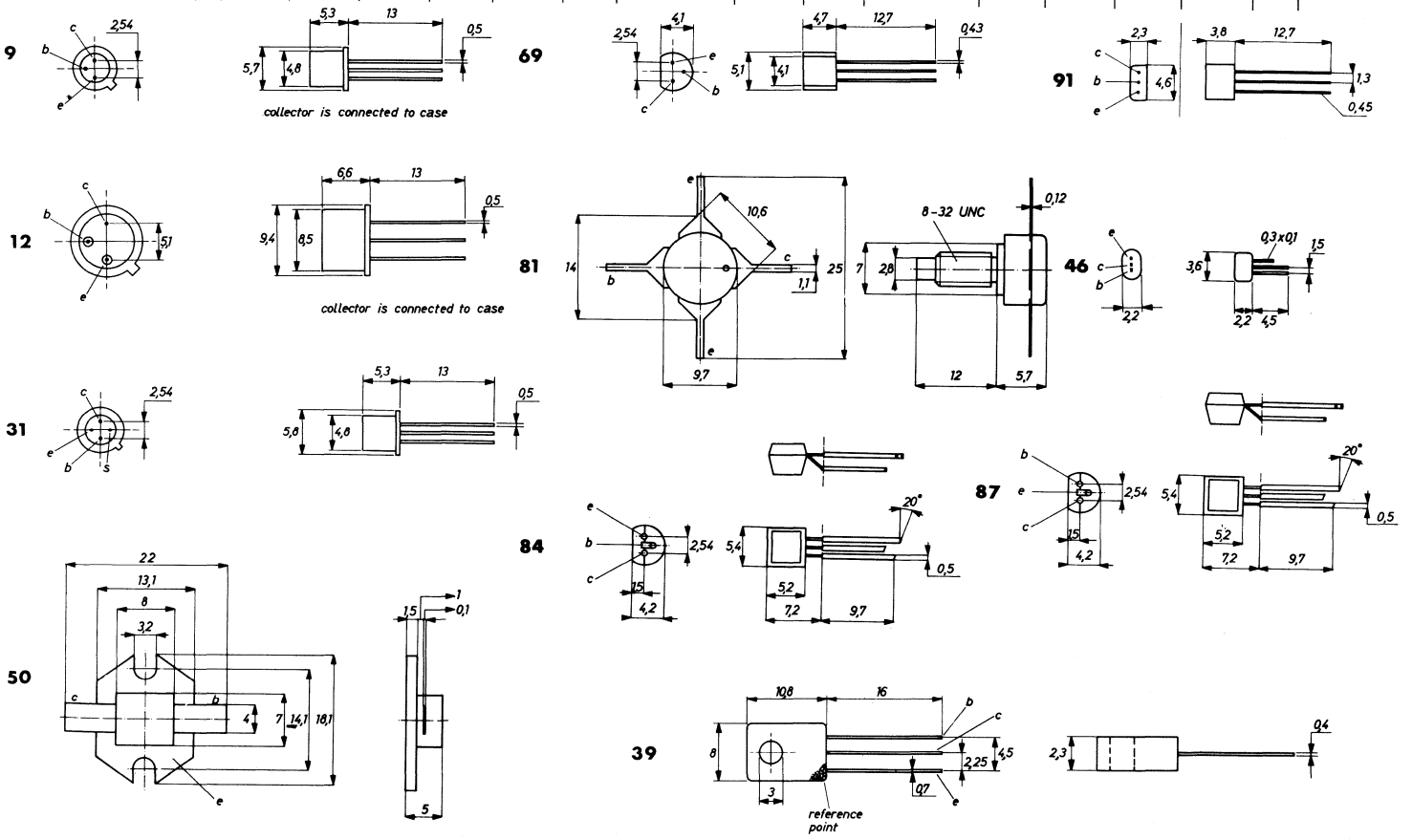
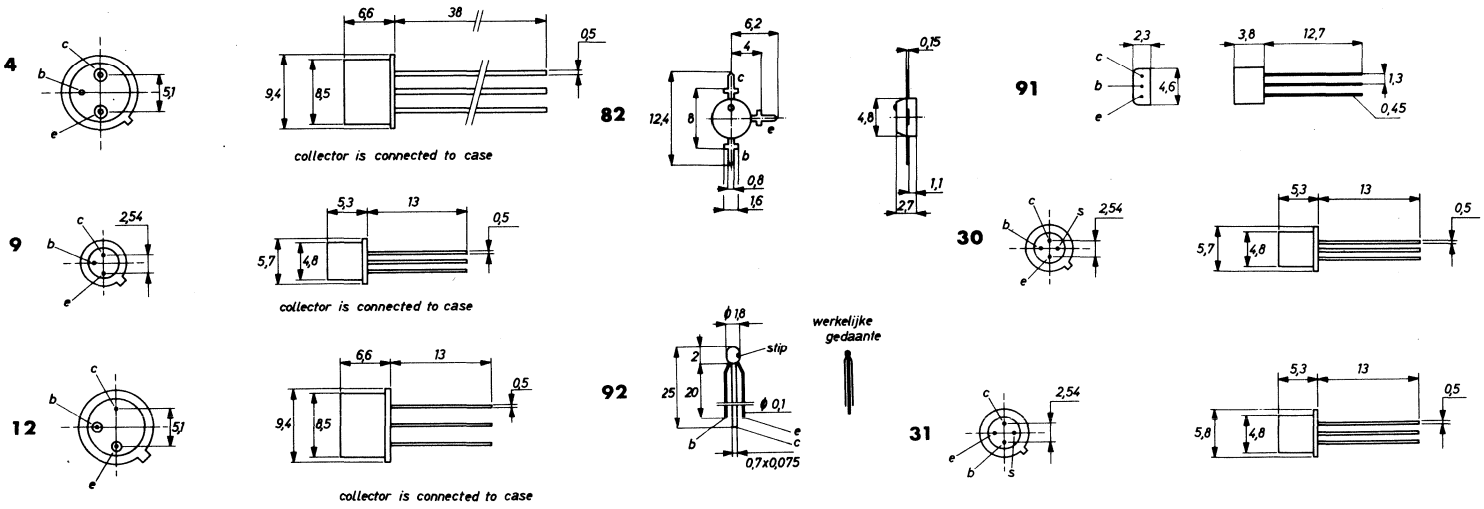


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BF 398A	Tx	P	S	150	150	6	100	625	150	30....100	10	10						69	1
BF 398B	Tx	P	S	150	150	6	100	625	150	80....200	10	10						69	1
BF 414	Te	P	S	40	30	4	25	300	150	80	10	1				560	350	84	3
BF 440	Te	P	S	40	40	4	25	300	150	60....220	10	1				250	350	87	3
BF 441	Te	P	S	40	40	4	25	300	150	30....125	10	1				250	350	87	3
BF 457	Tx	N	S	160	160		200	12W		25		30				90		39	7
BF 458	Tx	N	S	250	250		200	12W		25		30				90		39	7
BF 459	Tx	N	S	300	300		200	12W		25		30				90		39	7
BF 523	Tx	N	S	50	45		50	625		30		15						69	6
BF 540	Tx	P	S	50	45		50	250		60		1						69	3
BF 541	Tx	P	S	50	45		50	250		45		1						69	3
BF 542	Tx	P	S	50	45		50	250		25		1						69	3
BF 594	Tx	N	S	35	25		30	250		65....220		1						69	3
BF 595	Tx	N	S	35	25		30	250		35....125		1						69	3
BFR 22	At	N	S	120	65	7	1A	5W	200	40....120	10	150				175	175	12	5
BFR 23	At	P	S	90	65	7	1A	7W	200	40....140	10	150	3	10	50		165	12	5
BFR 24	At	P	S	60	40	7	1A	7W	200	50....250	10	150	3	10	50		165	12	5
BFR 25	At	N	S	120	120	6		375	175	20	1	20				50	400	9	5
BFR 63	Ph	N	S		25	3,5	200	3,5W	150	25	5	50				1000		81	4
BFR 64	Ph	N	S		25	3,5	200	3,5W	150	25	5	50				1200		81	4
BFR 65	Ph	N	S		25	3,5	400	5W	200	30	20	200				1200		81	4
BFS 11	At	N	S	45	30	4	50	230	175	40....170	6	1				800	1000	31	6
BFS 22A	Ph	N	S		18	4	750	8W	200	5	5	500				700		12	4
BFS 23A	Ph	N	S		36	4	500	8W	200	5	5	500				500		12	4
BFS 50	Te	N	S	36	18	3,5	400	3W	200	10	5	120				600		12	3
BFS 51	Te	N	S	40	20	4	750	5W	200	15	15	500				450		12	3
BFS 59	Fe	N	S	60	30	5		500		40....300		150				150		91	2,5
BFS 60	Fe	N	S	60	40	5		500		100...300		150				150		91	2,5
BFS 61	Fe	N	S	80	60	5		500		40....160		150				150		91	2,5
BFS 62	Te	N	S	40	25	4	25	260	175	90	10	7				580	650	31	3
BFS 69	Te	P	S	30	25	5	100	100	125	100	5	2				50	1000	46	3
BFS 86	Te	N	S	50	30	3	300	3W	150	20	5	60				1000		50	3
BFS 89	Tx	N	S	300	300	5	150	5W	175	25	10	50				90		12	2,5
BFS 90A	Tx	P	S	140	140	6	100	5W	200	30....110	10	10						12	2,5
BFS 90B	Tx	P	S	140	140	5	100	5W	200	90	10	10						12	2,5



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{cbo} (V)	I_c (mA)	P tot (mW)	T j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f T (MHz)	Rthj-a (°C/W)	Case	Use
BFS 91A	Tx	P	S	80	80	6	100	5W	200	40	10	10						12	2,5
BFS 91B	Tx	P	S	80	80	6	100	5W	200	100	10	10						12	2,5
BFS 92	Ph	P	S	100	60	6	1A	5W	200	20	10	10	100	5	10	70	220	12	4
BFS 93	Ph	P	S	100	60	6	1A	5W	200	50	10	10	100	5	10	70	220	12	4
BFS 94	Ph	P	S	80	40	6	1A	5W	200	30	10	10	100	5	10	70	220	12	4
BFS 95	Ph	P	S	40	35	6	1A	5W	200	50	10	10	100	5	10	70	220	12	4
BFS 96	Fe	P	S	60	30	5		500		40....300	10	150				150		91	2,5
BFS 97	Fe	P	S	60	40	5		500		100...300	10	150				150		91	2,5
BFS 98	Fe	P	S	80	60	5		500		40....160	10	150				150		91	2,5
BFS 99	At	N	S	120	90	5		300	175	20	1	20					500	9	5
BFW 16A	Ph	N	S		25	2	150	1W	200	25	5	50				1200	250	12	4
BFW 17A	Ph	N	S		25	2	150	1W	200	25	5	50				1100	250	12	4
BFW 30	Ph	N	S		10	2,5	50	250	200	25	5	25				1600		30	3,6
BFW 45	Ph	N	S	165	130	5	50	2,5W	200	20....120	20	50				120	200	12	4
BFW 92	Ph	N	S		15	2,5	25	130	125	20....150	1	2				1600	400	82	4,6
BFW 97	Fe	N	S	30	15	3		250		20	1	3				600		91	3
BFX 29	Ns	P	S	60	60		500	500		50	10	10						4	1
BFX 33	Te	N	S	55	30	3,5	400	3W	200	25	15	80				600	220	12	3
BFX 34	Ph	N	S	120	60	6	2A	5W	200	40....150	2	2A				100	200	12	5
BFX 44	Ph	N	S	40	15	4	125	360	200	40....120	1	10				500	480	9	4
BFX 55	Si	N	S	60	40	3,5	400	2W	175	30....160	5	50				500	220	12	6
BFX 59	Si	N	S	30	20	3	100	370	175				30....200	10	10	1000	650	30	6
BFX 59F	Si	N	S	30	20	3	100	370	175				30....200	10	10	1050	650	30	6
BFX 60	Si	N	S	40	25	4	25	370	175	50	10	7				550	650	31	6
BFX 62	Si	N	S	30	20	4	12	130	175	40	10	2				675	1000	30	6
BFX 65	Ns	P	S	45	45	6		350		100	5	1						9	1
BFX 84	Fe	N	S	100	60	6	1A	2W		20		10				50		4	2,5
BFX 85	Fe	N	S	100	60	6	1A	2W		50		10				50		4	2,5
BFX 86	Ns	N	S	40	35	5	500	800		50	10	10				50		12	2
BFX 87	Ns	P	S	50	50	4	500	500		40	10	10				100		4	2
BFX 88	Ns	P	S	40	40	4	500	500		40	10	10				100		4	2
BFX 89	Ph	N	S		15	2,5	25	200	200	20....150	1	2				1200	880	30	6
BFY 22	It	N	S	5	5	3	50	50	125	50	0,5	50	30.....90	0,5	0,2	20		92	1
BFY 23	It	N	S	5	5	3	50	50	125	70	0,5	50	70....220	0,5	0,2	20		92	1
BFY 24	It	N	S	5	5	3	50	50	125				45....130	0,5	0,2	20		92	1
BFY 29	It	N	S	45	30	5	50	50	125	50	0,5	50				20		92	1
BFY 30	It	N	S	45	30	5	50	50	125	70	0,5	50				20		92	1
BFY 33	Si	N	S	50	24	7	500	3W	200	40	10	150				100	220	12	4
BFY 34	Si	N	S	75	30	7	500	3W	200	40....120	10	150				100	220	12	4
BFY 39	Ns	N	S	45	25	5	50	350					35....400	10	10	150		9	3
BFY 39-1	Ns	N	S	45	25	5	50	350		35....110	10	10				150		9	3
BFY 39-2	Ns	N	S	45	25	5	50	350		100...200	10	10				150		9	3
BFY 39-3	Ns	N	S	45	25	5	50	350		180...400	10	10				150		9	3
BFY 44	Ph	N	S	80	60	4	1A	5W	200	20	10	150				200		12	3
BFY 45	Si	N	S		90	5	30	2W	200	60	10	10				130	250	12	5
BFY 46	Si	N	S	75	30	7	500	3W	200	65	10	10				120	220	12	4
BFY 50	Ph	N	S	80	35	6	1A	5W	200	112	10	150	90	5	10	140	220	12	4
BFY 51	Ph	N	S	60	30	6	1A	5W	200	123	10	150	100	5	10	160	220	12	4
BFY 52	Ph	N	S	40	20	6	1A	5W	200	142	10	150	110	5	10	185	220	12	4
BFY 55	Ph	N	S	80	35	7	1A	4W	200	40....120	10	150				60	220	12	4



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BFY 56	Ns	N	S	80	45	5	500	800		30....150	1	150				40		12	2
BFY 63	Tx	N	S	30	15			320								250		12	3
BFY 65	Te	N	S	100	80	7	100	1W	175	30	2	15				50	230	12	5
BFY 67	Ph	N	S	60	40		1A	700		40						60		12	2
BFY 68	Ph	N	S	60	40		1A	700		100						70		12	2
BFY 69 yel	Te	N	S	25	15	5	100	105	125	50	5	2	55.....95	1	0,5	50	750	46	1,3
BFY 69 grn	Te	N	S	25	15	5	100	105	125	50	5	2	85....140	1	0,5	50	750	46	1,3
BFY 69 vio	Te	N	S	25	15	5	100	105	125	50	5	2	130...200	1	0,5	50	750	46	1,3
BFY 69 whi	Te	N	S	25	15	5	100	105	125	50	5	2	190...310	1	0,5	50	750	46	1,3
BFY 69 gre	Te	N	S	25	15	5	100	105	125	50	5	2	290...520	1	0,5	50	750	46	1,3
BFY 69A yel	Te	N	S	25	15	5	100	105	125	50	5	2	55.....95	1	0,5	50	750	46	1,3
BFY 69A grn	Te	N	S	25	15	5	100	105	125	50	5	2	85....140	1	0,5	50	750	46	1,3
BFY 69A vio	Te	N	S	25	15	5	100	105	125	50	5	2	130...200	1	0,5	50	750	46	1,3
BFY 69A whi	Te	N	S	25	15	5	100	105	125	50	5	2	190...310	1	0,5	50	750	46	1,3
BFY 69A gre	Te	N	S	25	15	5	100	105	125	50	5	2	290...520	1	0,5	50	750	46	1,3
BFY 70	Ph	N	S	60	40	4	1A	5W	200	20	10	150				210		12	3
BFY 72	Ns	N	S	50	28	5	500	500		40....150	10	150				250		4	2,5
BFY 76	Ns	N	S	45		6	25	350		140	5	1	80....550	5	1	2		9	1
BFY 80	Te	N	S	100	80	7	100	1W	175	30	2	15				50	500	9	5
BFY 87 yel	Te	N	S	25	15	5	100	50	125	50	5	2	55.....95	1	0,5		1600	47	1,3
BFY 87 grn	Te	N	S	25	15	5	100	50	125	50	5	2	85....140	1	0,5		1600	47	1,3
BFY 87 vio	Te	N	S	25	15	5	100	50	125	50	5	2	130...200	1	0,5		1600	47	1,3
BFY 87 whi	Te	N	S	25	15	5	100	50	125	50	5	2	190...310	1	0,5		1600	47	1,3
BFY 87 gre	Te	N	S	25	15	5	100	50	125	50	5	2	290...520	1	0,5		1600	47	1,3
BFY 87A yel	Te	N	S	25	15	5	100	50	125	50	5	2	55.....95	1	0,5		1600	47	1,3
BFY 87A grn	Te	N	S	25	15	5	100	50	125	50	5	2	85....140	1	0,5		1600	47	1,3
BFY 87A vio	Te	N	S	25	15	5	100	50	125	50	5	2	130...200	1	0,5		1600	47	1,3
BFY 87A whi	Te	N	S	25	15	5	100	50	125	50	5	2	190...310	1	0,5		1600	47	1,3
BFY 87A gre	Te	N	S	25	15	5	100	50	125	50	5	2	290...520	1	0,5		1600	47	1,3
BFY 88	Te	N	S	40	25	3,5	25	175	175	40	1	5				850	750	31	3
BFY 90	Ph	N	S	30	15	2,5	25	200	200	25....150	1	2				1400	880	30	3
BLX 13	Ph	N	S	65	36	4	3A	62W	200	10....100	5	1A				500		94	4
BLX 14	Ph	N	S	85	36	4	4A	88W	200	15....100	6	1,4A				250		95	4
BLX 69	Ph	N	S	36	18	4	3A	50W	200	30	5	1A				1000		94	4
BLY 14	Ph	N	S	80	55	4	1A	9W	200	11	10	150				190		26	4

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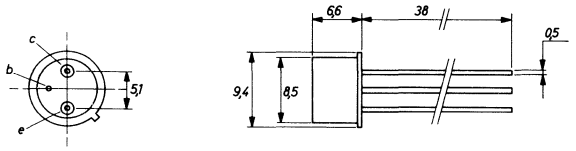

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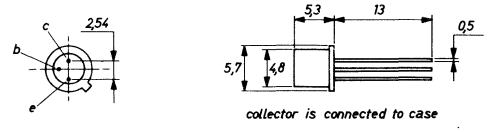

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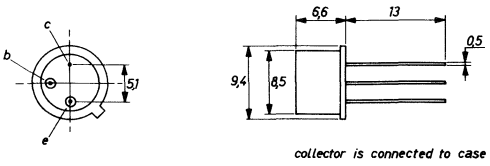

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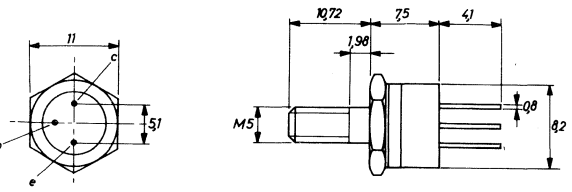

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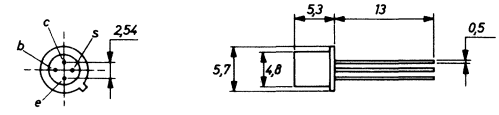

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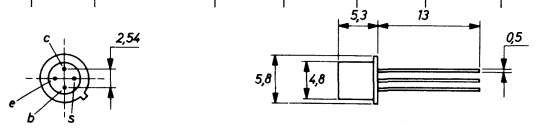

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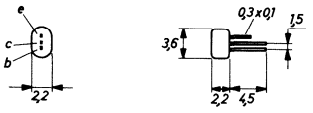

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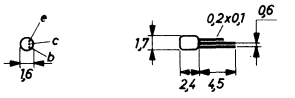

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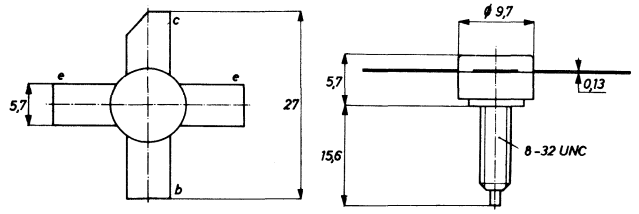

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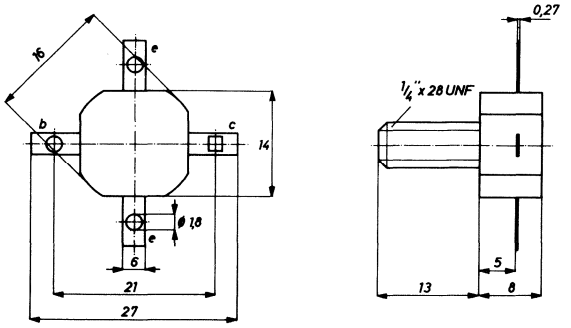
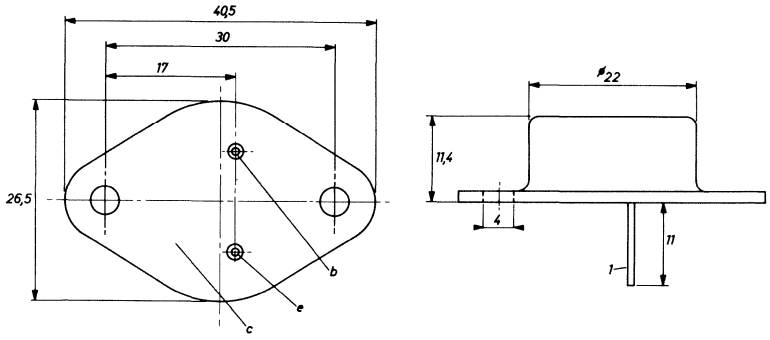


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BLY 15	It	N	S	90	64	3	2A	15W	175	20	10	500				200		3	2
BLY 16	It	N	S	64	64	3	1A		175	10	10	1A				250		40	2
BLY 17	Ph	N	S	100	100	4	10A	100W	175	25		1A				70		11	4
BLY 47	Tx	N	S	100	100	8	5A	40W	175							25		3	5
BLY 47A	Tx	N	S	100	100	8	5A	40W	175							25		40	5
BLY 48	Tx	N	S	100	100	8	5A	40W	175							25		3	5
BLY 48A	Tx	N	S	100	100	8	5A	40W	175							25		40	5
BLY 49	Tx	N	S	250	250	8	5A	40W	175							25		3	5
BLY 49A	Tx	N	S	250	250	8	5A	40W	175							25		40	5
BLY 50	Tx	N	S	250	250	8	5A	40W	175							25		3	5
BLY 50A	Tx	N	S	250	250	8	5A	40W	175							25		40	5
BLY 83	Ph	N	S	66	33	4		12W		60	5	1A				450		81	4
BLY 84	Ph	N	S	40	20	4		12W		60	5	1A				450		81	4
BLY 87A	Ph	N	S	36	18	4	1A	18W	200	5	5	500				700		94	4
BLY 88A	Ph	N	S	36	18	4	2A	32W	200	5	5	500				700		94	4
BLY 89A	Ph	N	S	36	18	4	5A	70W	200	10....120	5	1A				650		94	4
BLY 90	Ph	N	S	36	18	4	8A	130W	200	50	5	1A				550		95	4
BLY 91A	Ph	N	S	65	36	4	750	17W	200	5	5	500				500		94	4
BLY 92A	Ph	N	S	65	36	4	1A	32W	200	5	5	500				500		94	4
BLY 93A	Ph	N	S	65	36	4	3A	70W	200	10....120	5	1A				500		94	4
BLY 94	Ph	N	S	65	36	4	6A	130W	200	10....120	5	1A				500		95	4
BSS 10	At	N	S	40	15	6	500	1W	175	40....150	1	10				830	500	9	5
BSS 11	At	N	S	40	15	4,5	200	1W	200	120	1	10				500	500	9	5
BSS 12	At	N	S	30	12	5	200	1W	200	30	0,35	10				400	500	9	5
BSS 13	At	N	S	60	35	5		5W	200	35	1	500				350	175	12	5

3



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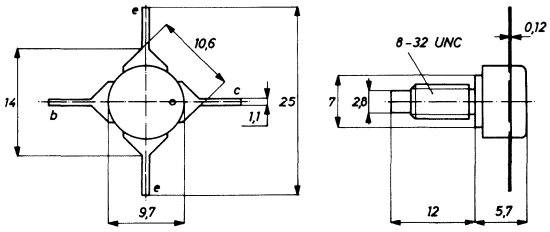

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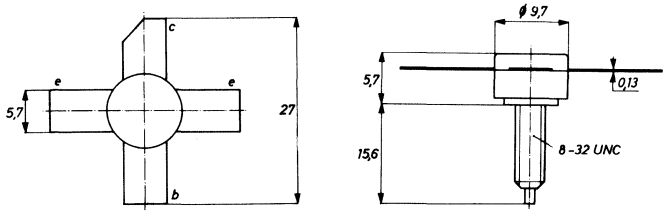

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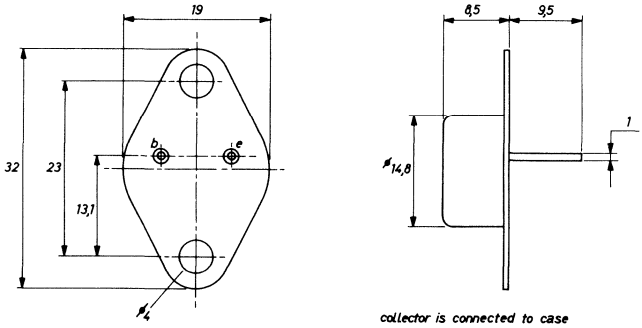

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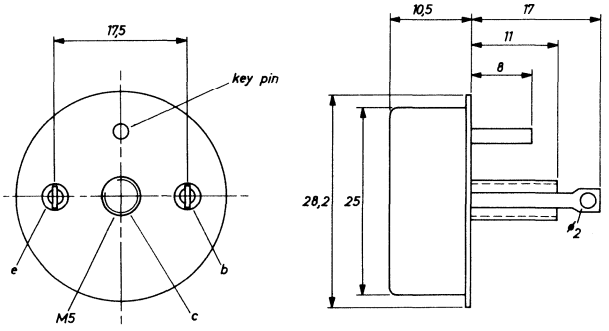

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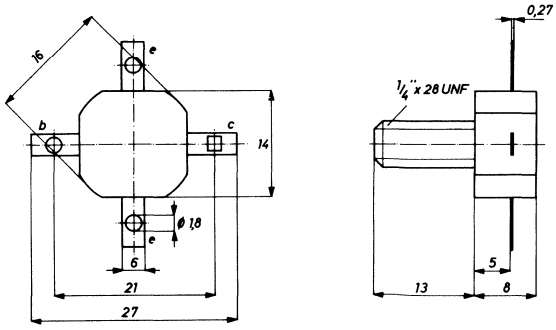

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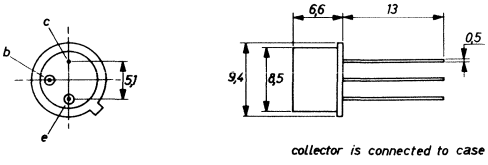

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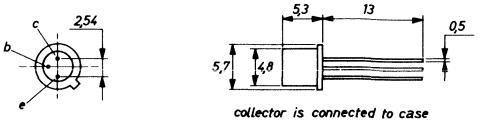

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BSS 14	At	N	S	75	50	5	2A	5W	200	65	1	500				350	175	12	5
BSS 15	At	N	S	100	75	7	2A	10W	200	30....130	4	500				50	175	12	2
BSS 16	At	N	S	75	50	5	2A	10W	200	40....250	4	500				50	175	12	2
BSS 17	At	P	S	100	75	7	2A	10W	200	30....130	4	500				50	175	12	2
BSS 18	At	P	S	75	50	5	2A	10W	200	20....250	4	500				50	175	12	2
BSS 19	Tx	N	S	120	120		50	225		30		4						88	5
BSS 20	Tx	N	S	160	160		50	225		30		4						88	5
BSS 27	Ph	N	S	70	45	5	1A	800	200	18.....60	1	800				400	225	12	5
BSS 28	Ph	N	S	50	30	5	1A	800	200	40	1	150				400	225	12	5
BSS 29	Ph	N	S	50	30	5	1A	800	200	25	1	150				400	225	12	5
BSV 15-6	Te	P	S		40	5	1A	3W	175	40....100	1	100				50	200	12	1,5
BSV 15-10	Te	P	S		40	5	1A	3W	175	63....160	1	100				50	200	12	1,5
BSV 15-16	Te	P	S		40	5	1A	3W	175	100...250	1	100				50	200	12	1,5
BSV 16-6	Te	P	S		60	5	1A	3W	175	40....100	1	100				50	200	12	1,5
BSV 16-10	Te	P	S		60	5	1A	3W	175	63....160	1	100				50	200	12	1,5
BSV 16-16	Te	P	S		60	5	1A	3W	175	100...250	1	100				50	200	12	1,5
BSV 17-6	Si	P	S		80	5	1A	5W	200	40....100	1	100				50	200	12	5
BSV 17-10	Si	P	S		80	5	1A	5W	200	63....160	1	100				50	200	12	5
BSV 23	Fe	N	S	25	20	3		300		20		10				200		91	5
BSV 24	Fe	N	S	20	15	5		300		50....200		10				200		91	5
BSV 25	Fe	N	S	30	12	5		300		40		10				400		91	5
BSV 26	Fe	N	S	40	15	5		300		40....120		10				500		91	5
BSV 27	Fe	N	S	40	15	5		300		40....120		10				500		91	5
BSV 28	Fe	N	S	100	100	5	100	300		30	6	2						91	5
BSV 29	Fe	N	S	120	120	5	100	300		30	6	2						91	5
BSV 33	Fe	P	S	12	12	4		300		40....150	6	30				400		91	5
BSV 51	Te	N	S	100	80	7	200	250	150	30	10	2				50	500	42	5
BSV 60	Te	N	S	45	40	5	3A	6W	200	50....150	2	2A				50		12	5
BSV 64	Ph	N	S	100	60	5	2A	5W	175	40	2	2A				100		12	5
BSV 68	Ph	P	S	110	100	6	100	250	150	30	5	10				95	500	9	5
BSV 69	Te	N	S	45	40	6	1A	3W	200	75	1	100						12	5
BSV 86	Ph	N	S	75	30	7	400	220	150	100...300	10	150	70....300	10	5	100	450	42	5
BSV 87	Ph	N	S	75	30	7	400	220	150	40....120	10	150	35....150	10	5	100	450	42	5
BSV 88	Ph	N	S	60	25	5	400	220	150	35	10	150				100	450	42	5
BSV 96	Ph	P	S	30	30	5	300	220	150	100...250	2	150				75	450	42	5
BSV 97	Ph	P	S	30	30	5	300	220	150	40....120	2	150				75	450	42	5
BSV 98	Ph	P	S	30	30	5	300	220	150	30	2	150				75	450	42	5
BSW 11	Te	N	S	25	15	5	30	50	125	50	1	10				400	1600	47	5
BSW 12	Te	N	S	40	20	5	200	50	125	40....150	1	10				200	1600	47	5
BSW 13	Si	N	S	20	15	5	50	160	125	40....300	0,35	10				280	500	93	5
BSW 19	Te	P	S	35	30	5	100	300	175	50	1	50				150	500	9	5
BSW 20	Te	P	S	35	30	5	100	280	150	50	1	50				150	450	90	5
BSW 20/IV	Te	P	S	35	30	5	100	280	150	40....120	1	10				150	450	90	5
BSW 20A	Te	P	S	35	30	5	100	280	150	100...300	1	10				150	450	90	5
BSW 21	Se	P	S		25		200	300		75....225		2				150		9	1
BSW 21A	Se	P	S		50		200	300		75....225		2				150		9	1
BSW 22	Se	P	S		25		200	300		180...540		2				150		9	1
BSW 22A	Se	P	S		50		200	300		180...540		2				150		9	1
BSW 26	Tx	N	S	50	40	4	1A	2W	200	20	2	100						9	5
BSW 27	Tx	N	S	60	50	4	1A	3W	200	20	2	100						12	5

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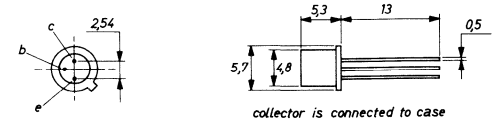

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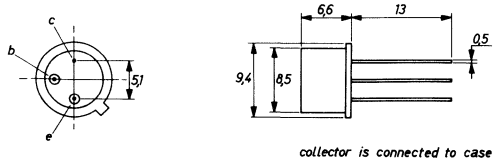

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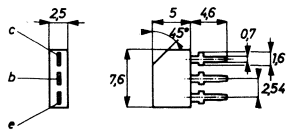

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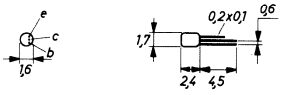

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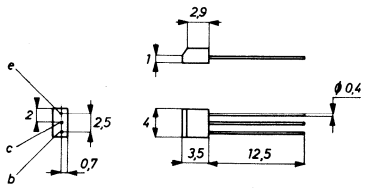

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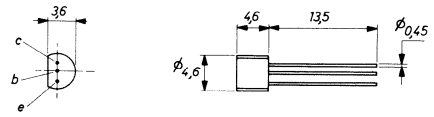

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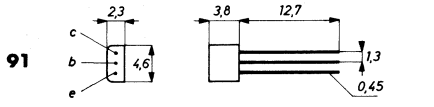

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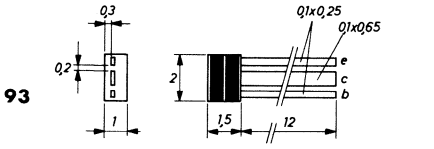

schaal 3:1

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
BSW 28	Tx	N	S	60	50	4	1A	3W	200	20	2	100						12	5
BSW 29	Tx	N	S	40	30	4	1A	5W	200	20	2	100						12	5
BSW 32	Tx	N	S	100	80	6	30	250	150	40	5	10						34	5
BSW 42	Se	N	S		25		200	300		70....225		2				150		100	1
BSW 42A	Se	N	S		50		200	300		70....225		2				150		100	1
BSW 42B	Se	N	S		60		200	300		70....225		2				150		100	1
BSW 43	Se	N	S		25		200	300		180...540		2				150		100	1
BSW 43A	Se	N	S		50		200	300		180...540		2				150		100	1
BSW 44	Se	P	S		25		200	300		75....225		2				150		100	1
BSW 44A	Se	P	S		50		200	300		75....225		2				150		100	1
BSW 45	Se	P	S		25		200	300		180...540		2				150		100	1
BSW 45A	Se	P	S		50		200	300		180...540		2				150		100	1
BSW 66	Ph	N	S	100	100	6	1A	5W	200	30	5	10				80	220	12	5
BSW 67	Ph	N	S	120	120	6	1A	5W	200	30	5	10				80	220	12	5
BSW 68	Ph	N	S	150	150	6	1A	5W	200	30	5	10				80	220	12	5
BSW 69	Ph	N	S	150		6	50	125	125	30	2	4				130	600	97	5
BSW 72	It	P	S	40	25	5	500	2W	200	40....120	10	150				150	440	9	3,5
BSW 73	It	P	S	40	25	5	500	2W	200	100...300	10	150				150	440	9	3,5
BSW 74	It	P	S	75	40	5	500	2W	200	40....120	10	150				150	440	9	3,5
BSW 75	It	P	S	75	40	5	500	2W	200	100...300	10	150				150	440	9	3,5
BSW 82	It	N	S	40	25	5	500	2W	175	40....120	10	150				200	300	9	3,5
BSW 83	It	N	S	40	25	5	500	2W	175	100...300	10	150				200	300	9	3,5
BSW 84	It	N	S	75	40	5	500	2W	175	40....120	10	150				200	300	9	3,5
BSW 85	It	N	S	75	40	5	500	2W	175	100...300	10	150				200	300	9	3,5
BSW 88A	Te	N	S	35	30	5	100	300	150	100...300	1	10				200	350	34	5
BSW 88B	Te	N	S	35	30	5	100	300	150	250...750	1	10				200	350	34	5
BSW 89A	Te	N	S	35	30	5	100	300	150	100...300	1	10				200	350	90	5
BSW 89B	Te	N	S	35	30	5	100	300	150	250...750	1	10				200	350	90	5
BSX 12	Ph	N	S	25	12	4	1A	3W	200	60	0,5	300				620	300	12	5
BSX 12A	Ph	N	S	25	15	4	1A	3W	200	60	0,5	300				620	300	12	5
BSX 19	Ph	N	S	40	15	4,5		360	200	20.....60	1	10				400	480	9	5
BSX 20	Ph	N	S	40	15	4,5		360	200	40....120	1	10				500	480	9	5
BSX 21	Ph	N	S	120	80	5	100	300	175	80	1	4				160	500	9	5
BSX 22	It	N	S	40	32	5	1A	6W	175	35	2	500				100	190	12	2,5
BSX 23	It	N	S	90	65	5	1A	6W	175	35	2	500				100	190	12	2,5
BSX 25	Te	N	S	40	25	5	300	2W	200	30	10	5				50	480	9	5
BSX 26	Fa	N	S		15			1W		40....120	0,3	10				500		9	5
BSX 29	Fa	P	S		12			1W		30....120	0,2	30				400		9	5
BSX 38A	Te	N	S	35	30	5	100	1000	200	100...300	1	10				200	450	9	5
BSX 38B	Te	N	S	35	30	5	100	1000	200	250...750	1	10				200	450	9	5
BSX 39	Fa	N	S		20			680		40....120	0,2	30				350		9	5
BSX 45-6	Ns	N	S	80	40	7	500	800		40....100	1	100				60		12	1
BSX 45-10	Ns	N	S	80	40	7	500	800		63....160	1	100				60		12	1
BSX 45-16	Ns	N	S	80	40	7	500	800		100...250	1	100				60		12	1
BSX 46-6	Ns	N	S	100	60	7	500	800		40....100	1	100				60		12	1
BSX 46-10	Ns	N	S	100	60	7	500	800		63....160	1	100				60		12	1
BSX 46-16	Ns	N	S	100	60	7	500	800		100...250	1	100				60		12	1
BSX 47-6	Si	N	S		80	7	1A	5W	200	40....100		100				50	200	12	2,5
BSX 47-10	Si	N	S		80	7	1A	5W	200	63....160		100				50	200	12	2,5
BSX 48	Si	N	S	50	25	5	600	1W	200	37	1	10				400	500	9	5
BSX 49	Si	N	S	60	40	5	600	1W	200	37	1	10				400	500	9	5
BSX 51	Se	N	S		25		200	300		75....225		2				150		9	1
BSX 51A	Se	N	S		50		200	300		75....225		2				150		9	1
BSX 51B	Se	N	S		60		200	300		75....225		2				150		9	1
BSX 52	Se	N	S		25		200	300		180...540		2				150		9	1

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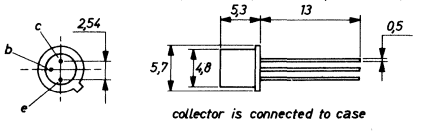

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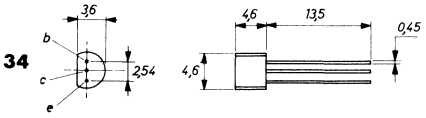

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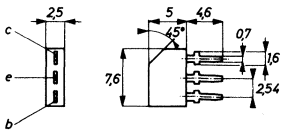

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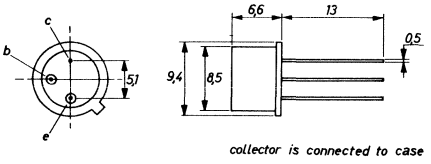

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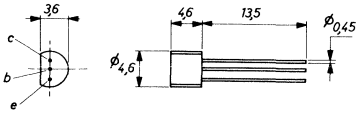

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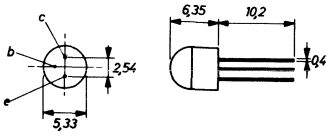

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
BSX 52A	Se	N	S		50		200	300		180...540		2				150		9	1
BSX 59	Ph	N	S	70	45	5	1A	1W	200	30	1	500				450	220	12	5
BSX 60	Ph	N	S	70	30	5	1A	1W	200	30	1	500				475	220	12	5
BSX 61	Ph	N	S	70	45	5	1A	1W	200	30	1	500				475	220	12	5
BSX 62-6	Si	N	S		40	5	3A	5W	200	40....100	1	1A				70	200	12	2,5
BSX 62-10	Si	N	S		40	5	3A	5W	200	63....160	1	1A				70	200	12	2,5
BSX 62-16	Si	N	S		40	5	3A	5W	200	100...250	1	1A				70	200	12	2,5
BSX 63-6	Si	N	S		60	5	3A	5W	200	40....100	1	1A				70	200	12	2,5
BSX 63-10	Si	N	S		60	5	3A	5W	200	63....160	1	1A				70	200	12	2,5
BSX 68	Te	N	S	30	15	5	100	125	125	30....300		10				175	600	42	5
BSX 69	Te	N	S	30	20	5	100	125	125	60....180		10				175	600	42	5
BSX 72	Te	N	S	40	25	5	1A	4W	175	40....250	10	150				100	185	12	3,5
BSX 75	Te	N	S	40	25	5	1A	1W	175	40....250	10	150				100	300	9	3,5
BSX 79A	Te	N	S	50	45	5	100	1W	200	100...300	1	10				200	450	9	5
BSX 79B	Te	N	S	50	45	5	100	1W	200	250...750	1	10				200	450	9	5
BSX 80	Te	N	S	35	15	5	230	150	125	30.....70	1	10				200	450	42	5
BSX 81A	Te	N	S	35	30	5	100	300	150	100...300	1	10				200	350	42	5
BSX 81B	Te	N	S	35	30	5	100	300	150	250...750	1	10				200	350	42	5
BSX 88	Ns	N	S	40	15	5	100	350		30....120	1	10				300		9	5
BSY 10	Ph	N	S	60	60		50	260					40			60		4	3
BSY 11	Ph	N	S	45	45		50	260					55			60		4	3
BSY 17	Si	N	S	20	12	5	200	1W	200	20.....60	0,35	10				280	500	9	5
BSY 18	Si	N	S	20	12	5	200	1W	200	40....120	0,35	10				280	500	9	5
BSY 19	It	N	S	40	15	5	200	1W	200	30....120	1	10					480	9	5
BSY 20	It	N	S	25	15	5	50	1W	175	20.....60	1	10					500	9	5
BSY 21	It	N	S	40	15	5	500	1W	200	30....120	1	10					480	9	5
BSY 22	It	N	S	45	25	5	200	1W	200				40....200	5	1		480	9	5
BSY 23	It	N	S	40		5	200	1W	175	25	1	10					500	9	5
BSY 34	Si	N	S	60	40	5	600	3W	200	37	1	10				400	220	12	5
BSY 38	Ph	N	S	20		5	100	300	175	30.....60	0,35	10				350	500	9	5
BSY 39	Ph	N	S	20		5	100	300	175	40....120	0,35	10				350	500	9	5
BSY 51	It	N	S	60	25	5	500	3W	200	40....120	10	150	30....100	5	1	100	220	12	2,5
BSY 52	It	N	S	60	25	5	500	3W	200	100...300	10	150	50....200	5	1	130	220	12	2,5
BSY 53	It	N	S	75	30	7	750	3W	200	40....120	10	150	30....100	5	1	100	220	12	2,5
BSY 54	It	N	S	75	30	7	750	3W	200	100...300	10	150	50....250	5	1	145	220	12	2,5
BSY 55	It	N	S	120	80	7	500	3W	200	40....120	10	150	30....150	5	1	100	220	12	2,5
BSY 56	It	N	S	120	80	7	500	3W	200	100...300	10	150	60....280	5	1	145	220	12	2,5
BSY 58	Si	N	S	50	25	5	600	3W	200	37	1	10				400	220	12	5
BSY 59	Si	P	S		30	5	800	480	150	63....400	0,7	100				100	450	41	5
BSY 62A	Si	N	S	25	15	5	200	1W	200	20.....60	1	10				200	500	9	5
BSY 62B	Si	N	S	25	15	5	200	1W	200	30....300	1	10				200	500	9	5
BSY 63	Si	N	S	40	15	5	200	1W	200	30....120	1	10				300	500	9	5
BSY 72	It	N	S	25	18	5	30	155	200	80....250	1	1	150	5	1	170		9	3
BSY 73	It	N	S	25	18	5	100	155	200	35....100	1	1	80	5	1	145		9	3,5
BSY 74	It	N	S	25	18	5	100	155	200	80....250	1	1	150	5	1	170		9	3,5
BSY 75	It	N	S	40	32	7	250	155	200	35....100	1	1	90	5	1	145		9	3,5
BSY 76	It	N	S	40	32	7	250	155	200	80....250	1	1	150	5	1	170		9	3,5
BSY 77	It	N	S	80	64	7	250	155	200	35....100	1	1	90	5	1	145		9	5
BSY 78	It	N	S	80	64	7	250	155	200	80....250	1	1	150	5	1	170		9	5
BSY 79	It	N	S	120		5	30	155	200	60	1	1				100		9	5
BSY 80	It	N	S	25	18	5	100	155		200...600	1	1	375	5	1	210		9	3
BSY 81	It	N	S	40	18	5	1A	5W	200	40....120	10	150				100	194	4	2,5
BSY 82	It	N	S	40	18	5	1A	5W	200	100...300	10	150				120	194	4	2,5
BSY 83	It	N	S	80	35	7	1A	5W	200	40....120	10	150				100	194	4	2,5
BSY 84	It	N	S	80	35	7	1A	5W	200	100...300	10	150				120	194	4	2,5

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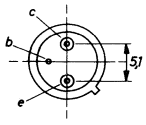

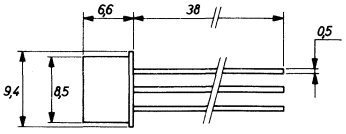

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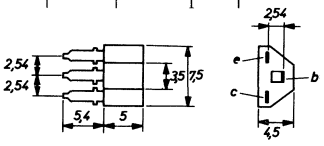
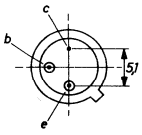
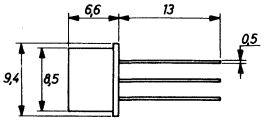


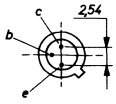
12

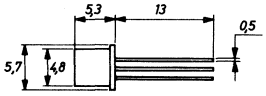




collector is connected to case

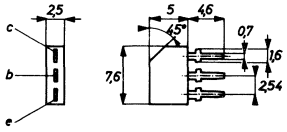
9





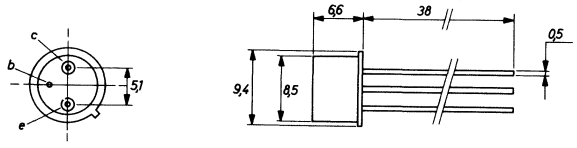
collector is connected to case

42



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
BSY 85	It	N	S	120	64	7	1A	5W	200	40....120	10	150				110	194	4	2,5
BSY 86	It	N	S	120	64	7	1A	5W	200	100...300	10	150				130	194	4	2,5
BSY 87	It	N	S	100	60	7	500	3W	200	40....120	10	150	30....150	5	1	100	220	4	2,5
BSY 88	It	N	S	100	60	7	500	3W	200	100...300	10	150	60....280	5	1	145	220	4	2,5
BSY 90	It	N	S	60	25	5	500	3W	200	425	10	10	200...550	5	1	170	220	4	2,5
BSY 92	Te	N	S	60	45	5	300	2W	200	60	2	10				50	220	12	3,5
BSY 93	Te	N	S	60	40	5	300	2W	200	60	2	10				50	480	9	3,5
BSY 95A	Fe	N	S	20	20	5		300		50....200		10				200		9	5
BU 103A	Se	N	S		80		1A	30W		50....200		100				6,5		40	2
BU 104	Se	N	S		400		5A	85W		10.....50		5A				10		3	2
BU 105	Tx	N	S		1500		3A	10W								7		3	2
BU 106	Tx	N	S	325	325	8	10A	50W	175	15	5	4A						3	7
BU 107	Tx	N	S	300	300	8	10A	50W	175	10	1,5	7A						3	7
BU 108	Tx	N	S		1500		5A	12W										3	2
BU 109	Se	N	S		330		5A	85W		15.....45		5A				10		3	2
BU 115	At	N	S	800		10	15A	50W	150	20....100	5	5						3	7
BU 116	At	N	S	400		10	15A	50W	150	20....100	5	5						3	7
BU 117	At	N	S	250		10	15A	50W	150	20....100	5	5						3	7
BU 120	At	N	S		250	8	5A	50W	150	35....165	5	1A				10		3	7
BU 121	At	N	S		200	8	10A	50W	150	7	5	6A				6		3	7
BU 122	At	N	S		150	8	5A	50W	150	25....250	5	1A				10		3	7
BU 123	At	N	S		120	8	5A	50W	150	20....250	5	1A				10		3	7
BUY 20	Tx	N	S	200	200	8	10A	85W	175	20....300	5	3A				25		3	5
BUY 21	Tx	N	S	300	300	8	10A	85W	175	20....300	5	3A				25		3	5
BUY 22	Tx	N	S	450	450	8	10A	85W	175	20....300	5	3A				25		3	5
BUY 23	Tx	N	S	600	600	8	10A	85W	175	20....200	5	2,5A				25		3	5
BUY 23A	Tx	N	S	700	700	8	10A	85W	175	20....200	5	2,5A				25		3	5
BUY 23B	Tx	N	S		400		10A	85W		20....200		2,5A				15		3	2
BUY 43-6	Si	N	S		40	7	4A	31W	200	40....100	1,5	500				1		40	2,5
BUY 32-10	Si	N	S		40	7	4A	31W	200	63....160	1,5	500				1		40	2,5
BUY 43-16	Si	N	S		40	7	4A	31W	200	100...250	1,5	500				1		40	2,5
BUY 44	Si	N	S		150	6	7A	30W	200	8	1,5	6A				15		3	5
BUY 46	At	N	S	90	55	7	4A	24W	200	25....100	4	500						40	2
BUY 46-4	Si	N	S		55	7	4A	31W	200	25.....63	1,5	500				0,8		40	2,5
BUY 69A	Tx	N	S		500		10A	100W		15		1A						3	5
BUY 69B	Tx	N	S		400		10A	100W		15		1A						3	5
BUY 69C	Tx	N	S		250		10A	100W		15		1A						3	5
BUY 70A	Tx	N	S		500		10A	75W		15		1A						3	5
BUY 70B	Tx	N	S		400		10A	75W		15		1A						3	5
BUY 70C	Tx	N	S		200		10A	75W		15		1A						3	5
CDT 1311	It	P	G	60	35	30	5A	33W	95	40....120	2	2A				30		3	2,5
CDT 1313	It	P	G	100	55	50	5A	33W	95	40....120	2	2A				30		3	2,5
CTP 1500	It	P	G	100	60	80	15A	50W	95	30.....75	2	5A				30		3	2,5
CTP 1503	It	P	G	80	50	60	15A	50W	95	30.....75	2	5A				30		3	2,5
CTP 1504	It	P	G	60	35	40	15A	50W	95	30.....75	2	5A				30		3	2,5

4



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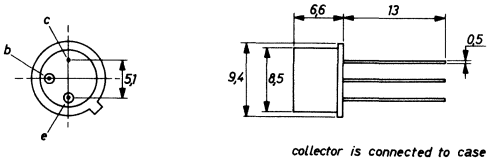
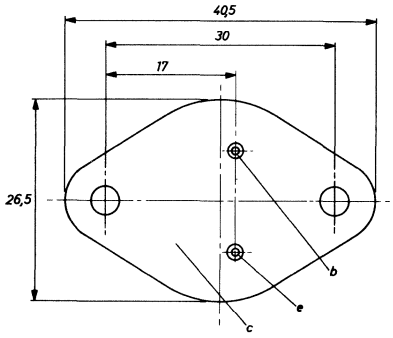
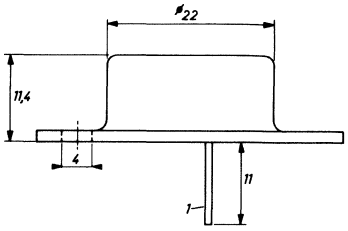


collector is connected to case

3





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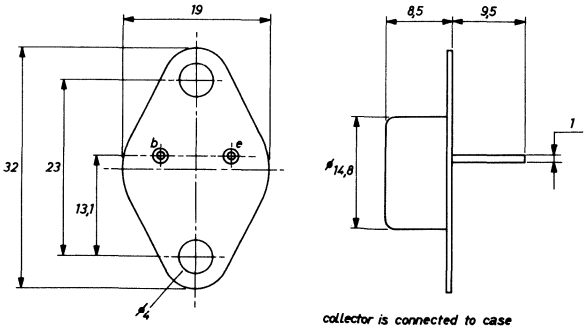
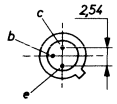
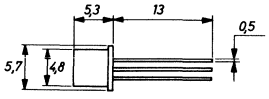


collector is connected to case

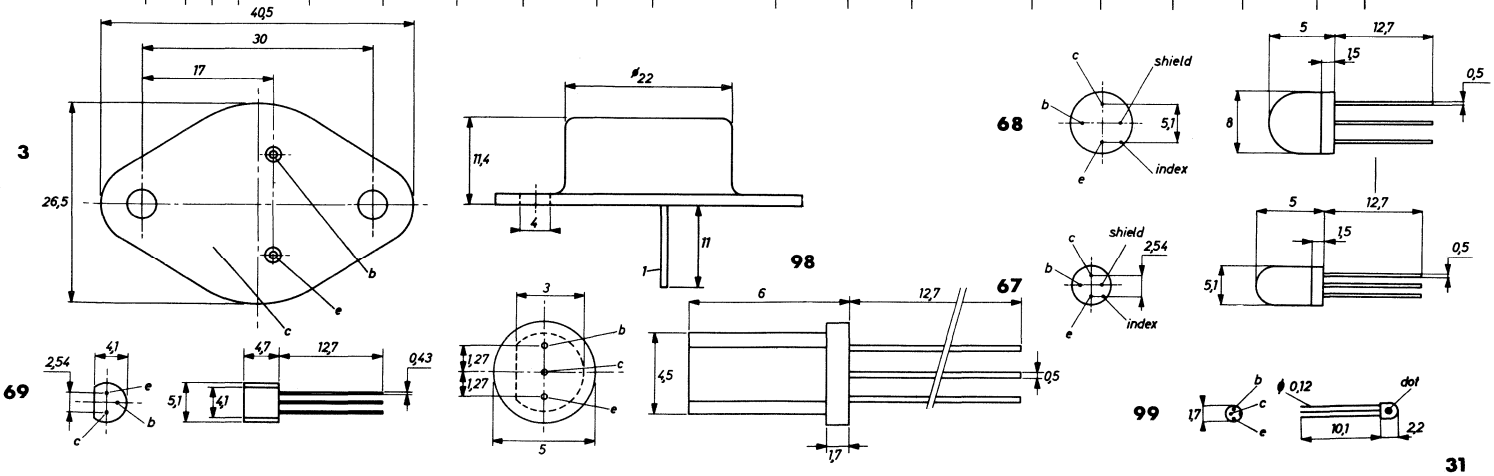
9





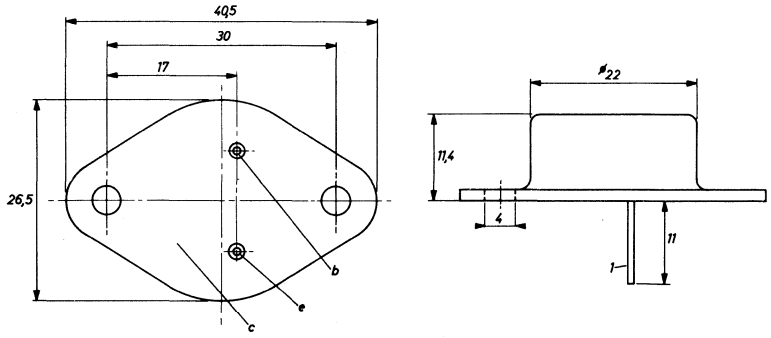
collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fc} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
CTP 1508	It	P	G	40	20	20	15A	50W	95	30.....75	2	5A					30	3	2,5
CTP 1544	It	P	G	60	30	30	25A	50W	95	25....125	2	25A					30	3	2,5
CTP 1545	It	P	G	80	40	30	25A	50W	95	25....125	2	25A					30	3	2,5
CTP 1552	It	P	G	40	20	30	25A	50W	95	25....125	2	25A					30	3	2,5
CTP 1553	It	P	G	100	50	30	25A	50W	95	25....125	2	25A					30	3	2,5
D16 G6	Ge	N	S	30	12	3	25	200	100	20	10	5				500		98	6
D26 C1	Ge	N	S	25	25	5		90	100	30.....90	5	10						99	5
D26 C3	Ge	N	S	25	25	5		90	100	140...300	5	10						99	5
D26 C4	Ge	N	S	25	25	5		90	100	250...500	5	10						99	5
D26 C5	Ge	N	S	25	25	5		90	100	400...800	5	10						99	5
D26 E1	Ge	N	S	45	45	5		90	100	600	5	10	150...600	5	1			99	5,7
D26 E2	Ge	N	S	40	40	5		90	100	40.....90	2,5	0,1						99	5,7
D26 E3	Ge	N	S	40	40	5		90	100	70....145	2,5	0,1						99	5,7
D26 E4	Ge	N	S	40	40	5		90	100	115...220	2,5	0,1						99	5,7
D26 E5	Ge	N	S	40	40	5		90	100	180...330	2,5	0,1						99	5,7
D26 E6	Ge	N	S	40	40	5		90	100	40....330	2,5	0,1						99	5,7
D26 G1	Ge	N	S	30	15	3		90	100	20	1	3	6	10	4			99	5,7
D 29 E1	Ge	P	S	35	25	5	750	1000	150	60....200	2	2				100		98	7
D29 E2	Ge	P	S	35	25	5	750	1000	150	150...500	2	2				135		98	7
D29 E4	Ge	P	S	50	40	5	750	1000	150	60....120	2	2				80		98	7
D29 E5	Ge	P	S	50	40	5	750	1000	150	100...200	2	2				120		98	7
D29 E6	Ge	P	S	50	40	5	750	1000	150	150...300	2	2				135		98	7
D29 E7	Ge	P	S	50	40	5	750	1000	150	250...500	2	2				150		98	7
D29 E9	Ge	P	S	70	60	5	750	1000	150	60....120	2	2				80		98	7
D29 E10	Ge	P	S	70	60	5	750	1000	150	100...200	2	2				120		98	7
D29 F1	Ge	P	S	40	40	4	100	360	150	60....120	5	2				90		98	7
D29 F2	Ge	P	S	40	40	4	100	360	150	100...200	5	2				90		98	7
D29 F3	Ge	P	S	40	40	4	100	360	150	150...300	5	2				90		98	7
D29 F4	Ge	P	S	40	40	4	100	360	150	250...500	5	2				90		98	7
D29 F5	Ge	P	S	40	40	4	100	360	150	60....120	5	2				90		98	7
D29 F6	Ge	P	S	40	40	4	100	360	150	100...200	5	2				90		98	7
D29 F7	Ge	P	S	40	40	4	100	360	150	150...300	5	2				90		98	7
D30 A1	Ge	P	S	25	25	5		90	100	30.....90	5	10						99	1,5
D30 A2	Ge	P	S	25	25	4		90	100	60....180	5	10						99	1,5
D30 A3	Ge	P	S	25	25	4		90	100	140...300	5	10						99	1,5
D30 A4	Ge	P	S	25	25	4		90	100	250...500	5	10						99	1,5
D30 A5	Ge	P	S	25	25	4		90	100	400...800	5	10						99	1,5
D32 P1	Ge	N	S	40	30	4	50	360	125	40.....80	5	2	65	10	1	300		69	3
D32 P2	Ge	N	S	40	30	4	50	360	125	60....120	5	2	95	10	1	350		69	3
D32 P3	Ge	N	S	40	30	4	50	360	125	100...200	5	2	160	10	1	400		69	3
D32 P4	Ge	N	S	40	30	4	50	360	125	150...300	5	2	240	10	1	450		69	3
D33 D21	Ge	N	S	35	25	5	750	1000	150	60....200	2	2				100		98	7
D33 D22	Ge	N	S	35	25	5	750	1000	150	150...500	2	2				135		98	7
D33 D24	Ge	N	S	50	40	5	750	1000	150	60....120	2	2				80		98	7
D33 D25	Ge	N	S	50	40	5	750	1000	150	100...200	2	2				120		98	7
D33 D26	Ge	N	S	50	40	5	750	1000	150	150...300	2	2				135		98	7
D33 D27	Ge	N	S	50	40	5	750	1000	150	250...500	2	2				150		98	7
D33 D29	Ge	N	S	70	60	5	750	1000	150	60....120	2	2				80		98	7
D33 D30	Ge	N	S	70	60	5	750	1000	150	100...200	2	2				120		98	7
EN 697	Ns	N	S	60	30	5	500	300		40....120	10	150				50		68	1,5
EN 722	Ns	P	S	50	35		500	200		30.....90	10	150				60		67	1,5
EN 918	Ns	N	S	30	15	3	20	200		20	1	3				600		67	3
EN 930	Ns	N	S	45	45	5	25	200		600	5	10				30		67	1
EN 956	Ns	N	S	75	40	7	500	200		100...300	10	150				70		67	1,5
EN 1132	Ns	P	S	50	35		500	300		30.....90	10	150				60		68	1,5



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
EN 2219	Ns	N	S	60	30	5	500	300		100...300	10	150				250		68	1,5
EN 2222	Ns	N	S	60	30	5	500	200		100...300	10	150				250		67	1,5
EN 2484	Ns	N	S	60	60	6	25	200		250	5	1				60		67	1
EN 2905	Ns	P	S	60	40		500	300		100...300	10	150				150		68	1,5
EN 2907	Ns	P	S	60	40	5	500	200		100...300	10	150				150		67	1,5
EN 3502	Ns	P	S	45	45	5	500	300		115...300	1	50				150		68	1,5
EN 3504	Ns	P	S	45	45	5	500	200		115...300	1	50				150		67	1,5
GET 929	Ge	N	S	70	50	5	100	360	125	90	5	0,5				350		69	1
GET 930	Ge	N	S	70	50	5	100	360	125	150	5	0,5				350		69	1
GET 2221	Ge	N	S	60	30	5	400	1W	125	40....120	10	150				250		69	1,5
GET 2221A	Ge	N	S	75	40	5	400	1W	125	40....120	10	150				250		69	1
GET 2222	Ge	N	S	60	30	5	400	1W	125	100...300	10	150				250		69	1,5
GET 2222A	He	N	S	75	40	5	400	1W	125	100...300	10	150				300		69	1,5
GET 2484	Ge	N	S	60	60	6	100	360	125	250	5	1	150...900	5	1			69	1
GET 2904	Ge	P	S	60	40	5	350	700	125	40....120	10	150						69	1,5
GET 2905	Ge	P	S	60	40	5	350	700	125	100...300	10	150						69	1,5
GET 2906	Ge	P	S	60	40	5	350	700	125	40....120	10	150						69	1,5
GET 2907	Ge	P	S	60	40	5	350	700	125	100...300	10	150						69	1,5
GET 3563	Ge	N	S	30	12	2	50	500	125	20....200	10	8	20....250	10	8			69	3
GET 3638	Ge	P	S	25	25	4	350	700	125	70	1	50	25	10	10	100		69	3
GET 3638A	Ge	P	S	25	25	4	350	700	125	100	1	50	100	10	10	100		69	3
MJ 400	Mo	N	S	350	325	5	250	6,6W	175	30....300	10	50	25	10	50	15		40	7
MJ 413	Mo	N	S	400		5	10A	125W	150	20.....80	5	500				2,5		3	5
MJ 420	Mo	N	S	275	250	6	100	2,5W	175	25....250	20	30	25	20	10	14		4	7
MJ 421	Mo	N	S	350	325	6	100	2,5W	175	25....250	20	30	25	20	10	14		4	7
MJ 423	Mo	N	S	400		5	10A	125W	150	5	1A					2,5		3	5
MJ 430	Mo	P	S		40		1A	6W		25....150		250				2		4	2
MJ 431	Mo	N	S	400		5	10A	125W	150	15.....35	5	2,5A				2,5		3	5
MJ 440	Mo	N	S		40		1A	6W		25....150		250				3		4	2
MJ 450	Mo	P	S	40	40	5	30A	150W	200	20	2	10A				2		3	5
MJ 480	Mo	N	S	40	40	5	4A	87W	200	30....200	2	1A				4		3	2
MJ 481	Mo	N	S	60	60	5	4A	87W	200	30....200	2	1A				4		3	2
MJ 490	Mo	P	S	40	40	5	4A	87W	200	30....200	2	1A				4		3	2
MJ 491	Mo	P	S	60	60	5	4A	87W	200	30....200	2	1A				4		3	2
MJ 500	Mo	P	S	60	60	5	7A	60W	200	25....180	2	2A				30		66	2,5
MJ 501	Mo	P	S	80	80	5	7A	60W	200	25....180	2	2A				30		66	2,5
MJ 802	Mo	N	S		90	4	30A	200W	200	25....100	2	7,5A				2		3	2
MJ 1800	Mo	N	S		250	5	5A	100W	150	40....120	5	400						3	7
MJ 2249	Mo	N	S	60	60	6	2A	20W	175	25....200	4	100				10		40	2,5
MJ 2250	Mo	N	S	80	80	6	2A	20W	175	25....200	4	100				10		40	2,5

3



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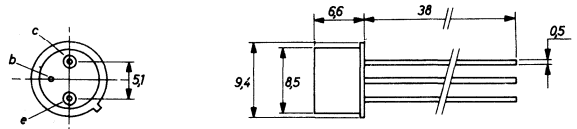

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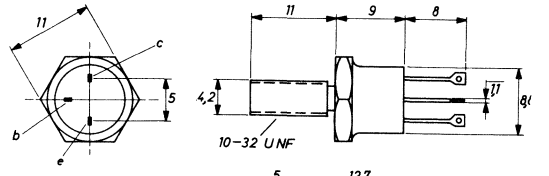

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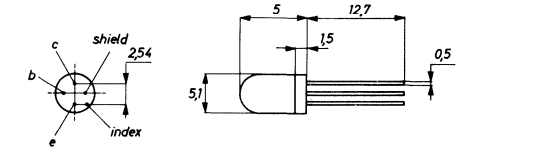

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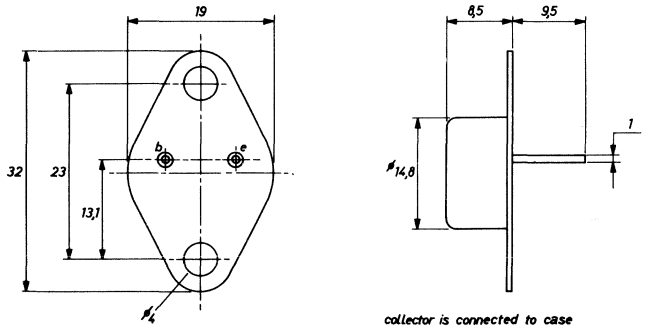

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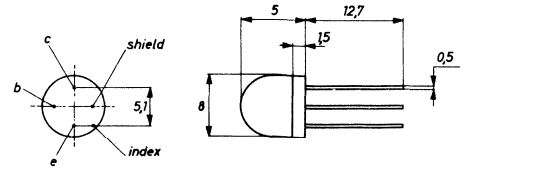

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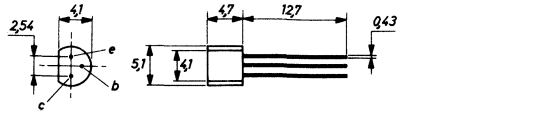
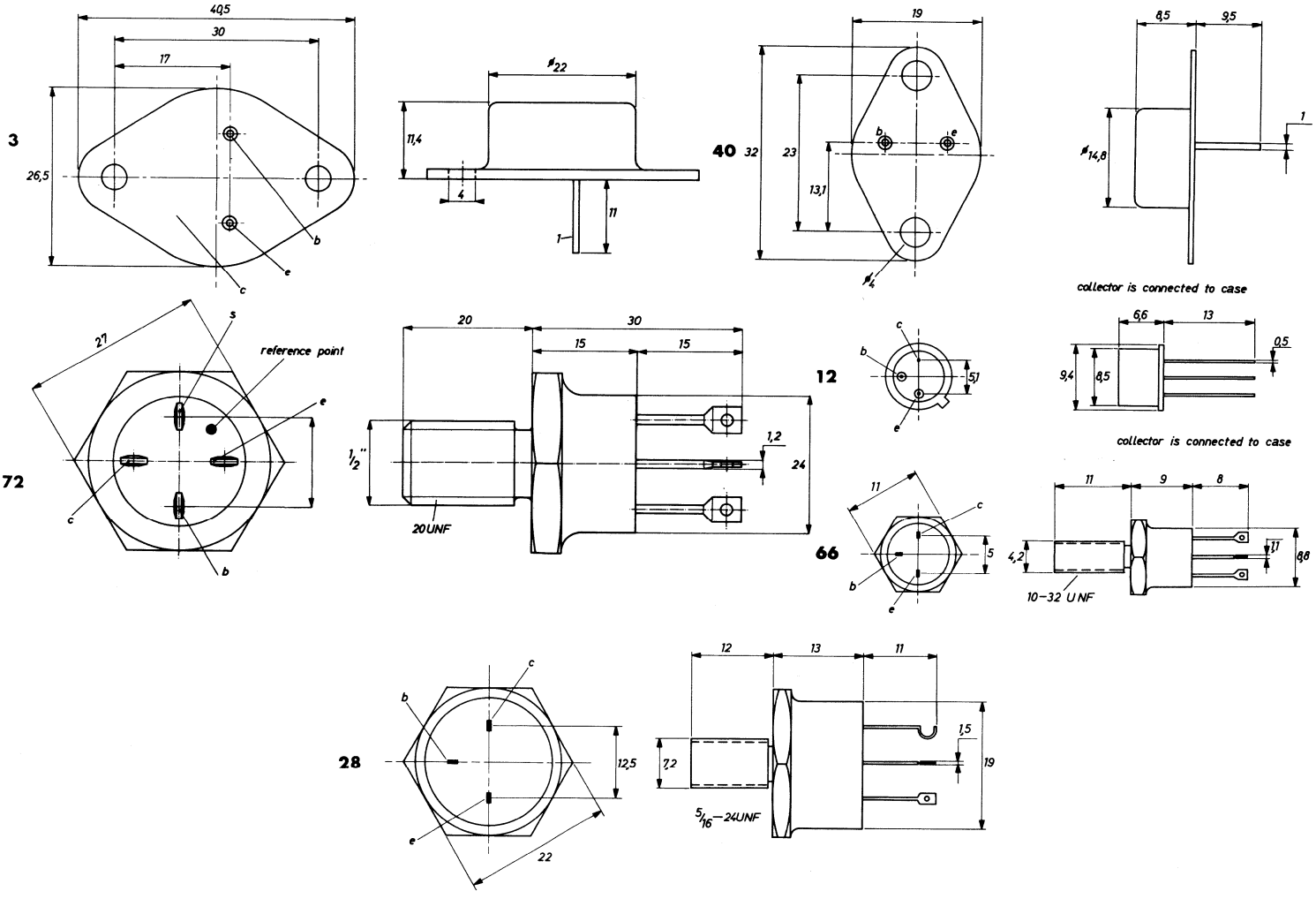
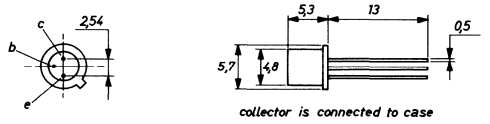


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
MJ 2251	Mo	N	S		225	6	500	10W	150	25....200	10	50	65	125	30			40	7
MJ 2252	Mo	N	S		300	6	500	10W	150	25....200	10	50	65	125	30			40	7
MJ 2253	Mo	P	S		60		3A	25W		20....100		250				3		40	2
MJ 2254	Mo	P	S		80		3A	25W		20....100		250				3		40	2
MJ 2267	Mo	P	S	40	40	5	5A	150W	200	20....100	2	4A				3		3	2,5
MJ 2268	Mo	P	S	55	55	5	5A	150W	200	20....100	2	4A				3		3	2,5
MJ 2801	Mo	N	S		40		10A	120W		15.....60		8A				1		3	2
MJ 2840	Mo	N	S	60	60	4	10A	150W	200	20....100	2	3A				20		3	2
MJ 2841	Mo	N	S	80	80	4	10A	150W	200	20....100	2	4A				20		3	2
MJ 2901	Mo	P	S		40		10A	120W		15.....60		8A				1		3	2
MJ 2940	Mo	P	S	60	60	4	10A	150W	200	20....100	2	3A				20		3	2
MJ 2941	Mo	P	S	80	80	4	10A	150W	200	20....100	2	4A				20		3	2
MJ 3029	Mo	N	S		250	5	3,5A	150W	150	30	5	400						3	7
MJ 3030	Mo	N	S		325	5	3,5A	125W	150									3	7
MJ 3101	Mo	N	S	50	40	6	2A	20W	175	25....200	4	500				10		40	2,5
MJ 3201	Mo	N	S	225	225	3	100	15W	175	30....200	10	50				15		40	2
MJ 3202	Mo	N	S	300	300	3	100	15W	175	30....200	10	50				15		40	2
MJ 3701	Mo	P	S		40		3A	25W		20....100		250				3		40	2
MJ 3771	Mo	N	S		30		30A	150W		15.....60		15A				2		3	2
MJ 3772	Mo	N	S		60		20A	150W		15.....60		10A				2		3	2
MJ 4502	Mo	P	S	100	90	4	30A	200W	200	25....100	2	7,5A				2		3	2
MJ 6700	Mo	P	S	60	60	5	7A	60W	200	25....180	2	2A				30		66	2,5
MJ 6701	Mo	P	S	80	80	5	7A	60W	200	25....180	2	2A				30		66	2,5
MJ 7000	Mo	N	S	100	100	7	30A	150W	200	20....100	4	10A				30		28	2,5
MJ 7200	Mo	N	S	100	80	6	60A	300W	200	20....100	5	20A				20		72	2,5
MJ 7201	Mo	N	S	120	100	6	60A	300W	200	20....100	5	20A				20		72	2,5
MJ 8100	Mo	P	S	60	60	5	5A	10W	200	25....180	2	2A				30		12	2,5
MJ 8101	Mo	P	S	80	80	5	5A	10W	200	25....180	2	2A				30		12	2,5
MJ 8400	Mo	N	S		600	5	4A	125W	150									3	7
MJ 9000	Mo	N	S		325	5	10A	125W	150									3	7



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
MJE 101	Mo	P	S		40		5A	75W		25....150		2A				2		39	2
MJE 102	Mo	P	S		60		5A	75W		25....150		2A				2		39	2
MJE 103	Mo	P	S		60		5A	75W		30....150		1A				2		39	2
MJE 104	Mo	P	S		80		5A	75W		30....150		1A				2		39	2
MJE 105	Mo	P	S	50	50	4	5A	65W	150	25....100	2	2A						39	2
MJE 201	Mo	N	S		40		5A	75W		25....150		2A				2		39	2
MJE 202	Mo	N	S		60		5A	75W		25....150		2A				2		39	2
MJE 203	Mo	N	S		60		5A	75W		30....150		2A				2		39	2
MJE 204	Mo	N	S		80		5A	75W		30....150		2A				2		39	2
MJE 205	Mo	N	S	50	50	4	5A	65W	150	25....100	2	2A						39	2
MJE 340	Mo	N	S		300	3	500	21W	150	30....240	10	50						39	7
MJE 341	Mo	N	S	175	150	3	500	21W	150	25....200	10	50	25	10	50	15		39	7
MJE 344	Mo	N	S	200	200	5	500	21W	150	30....300	10	50	25	10	50	15		39	7
MJE 345	Mo	N	S		325		500	21W		30....300		50				15		39	2
MJE 370	Mo	P	S	30	30	4	3A	25W	150	25	1	1A						39	2
MJE 371	Mo	P	S	40	40	4	3A	40W	150	40	1	1A						39	2
MJE 488	Mo	N	S		50		4A	40W		30		1A				4		39	2
MJE 520	Mo	N	S	30	30	4	3A	25W	150	25	1	1A						39	2
MJE 521	Mo	N	S	40	40	4	3A	40W	150	40	1	1A						39	2
MJE 2801	Mo	N	S	60	60	4	10A	90W	150	25....100	2	3A						39	2
MJE 2901	Mo	P	S	60	60	4	10A	90W	150	25....100	2	3A						39	2
MJE 2955	Mo	P	S	70	60	5	10A	90W	150	20.....70	4	4A				2		39	2
MJE 3055	Mo	N	S	70	60	5	10A	90W	150	20.....70	4	4A				2		39	2,5
MJE 3439	Mo	N	S	450	350	5	300	15W	150	40....160	10	20	25	10	5	15		39	2
MJE 3440	Mo	N	S	350	250	5	300	15W	150	40....160	10	20	25	10	5	15		39	7
MM 1500	Mo	N	S	30	15	4	200	3,5W	200							1500		101	3
MM 1501	Mo	N	S	30	15	4	200	3,5W	200							1000		101	3
MM 1552	Mo	N	S	65	35	4	8A	80W	200	5	5	3A				175		102	4
MM 1553	Mo	N	S	100	70	4	8A	80W	200	15	5	2A				175		102	4
MM 1619	Mo	N	S	48	24	4	3,5A	50W	200	3	1	1A				100		103	4
MM 1620	Mo	N	S	48	24	4	7A	100W	200	3	5	2,5A						103	4
MM 1748	Mo	N	S	15	6	4	100	500	200	20....120	0,5	10				600		23	5
MM 2484	Mo	N	S	60	60	6	50	1W	200	250	5	1	150...900	5	1		486	9	1
MM 3903	Mo	N	S	60	40	6	200	360	200	50....150	1	10	50....200	10	1	250	490	23	1,5
MM 3904	Mo	N	S	60	40	6	200	360	200	100...300	1	10	100...400	10	1	300	490	23	1,5
MM 3905	Mo	P	S	40	40	5	200	360	200	50....150	1	10	50....200	10	1	200	490	23	1,5
MM 3906	Mo	P	S	40	40	5	200	360	200	100...300	1	10	100...400	10	1	250	490	23	1,5
MM 4018	Mo	P	S	40	20	4	400	5W	200	10	5	50				900		12	4
MM 4019	Mo	P	S	60	40	4	1A	5W	200	10	5	250				750		12	4
MM 4020	Mo	P	S	36	18	4	1A	25W	150	15	5	250				175		94	4

9



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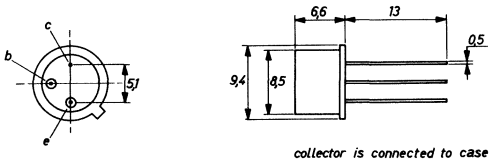

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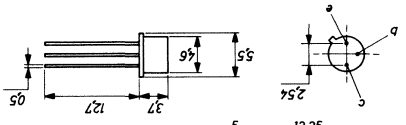

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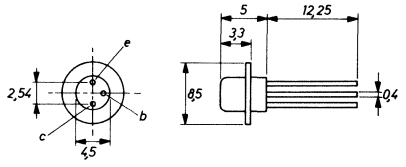

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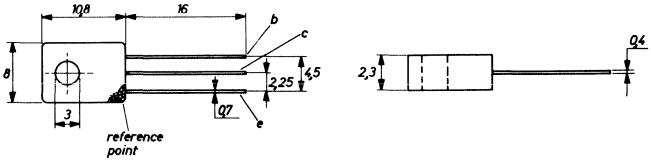

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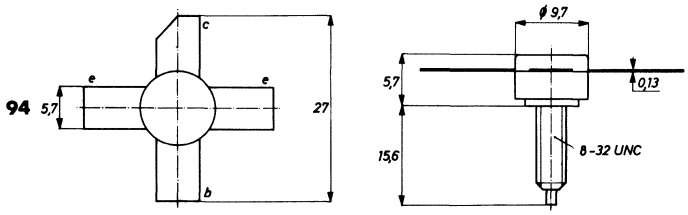

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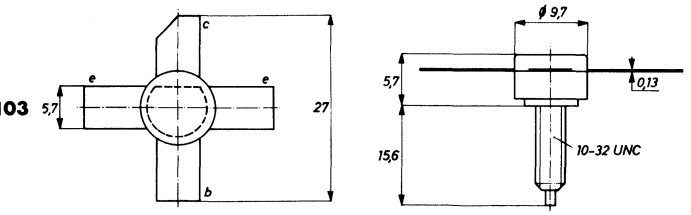

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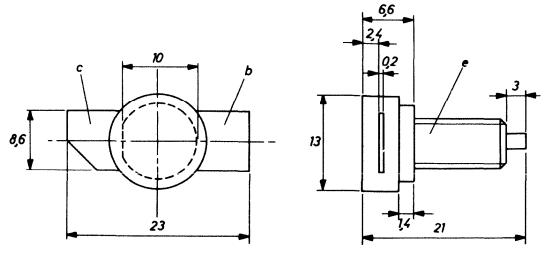

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fc} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
MM 4021	Mo	P	S	36	18	4	2,5A	29W	150	15	5	500				175		94	4
MM 4022	Mo	P	S	36	18	4	4A	70W	150	15	5	500				175		94	4
MM 4023	Mo	P	S	36	18	4	6A	87W	150	15	5	500				175		94	4
MM 4049	Mo	P	S	15	10	4	30	200	200	20.....80	2	25				4000		30	3
MM 4052	Mo	P	S	30	30	30	500	2W	200	20	1	10	20	1	10			17	5,9
MM 4261H	Mo	P	S	15	15	4	30	200	200	30....150	1	10				2000		30	5
MM 4429	Mo	N	S	55	35	3,5	250	5W	200	20....200	15	50				800		103	4
MM 4430	Mo	N	S	55	35	3	250	5W	200	20....200	15	50				600		103	4
MM 4545	Mo	P	S	200	200	5	2A	25W	200	20	10	10				40		104	2,5
MM 4546	Mo	P	S	300	300	5	2A	25W	200	20	10	10				40		104	2,5
MM 4547	Mo	P	S	400	400	5	2A	25W	200	20	10	10				30		104	2,5
MM 4645	Mo	P	S	200	200	5	2A	25W	200	25	10	100				40		12	2,5
MM 4646	Mo	P	S	300	300	5	2A	25W	200	25	10	100				40		12	2,5
MM 4647	Mo	P	S	400	400	5	2A	25W	200	25	10	100				30		12	2,5
MM 5005	Mo	P	S	80	60	5	2A	8W	200	50....250	2,5	150				30		12	2,5
MM 5006	Mo	P	S	100	80	5	2A	8W	200	50....250	2,5	200				30		12	1,5
MM 5007	Mo	P	S	120	100	5	2A	8W	200	50....250	2,5	250				30		12	1,5
MM 8000	Mo	N	S	40	30	3,5	400	3W	200	30	15	50				550		12	3
MM 8001	Mo	N	S	40	30	3,5	400	3W	200	30	15	50				700		12	3
MM 8002	Mo	N	S	40	30	3,5	400	3W	200	30	15	50				1000		12	3
MM 8003	Mo	N	S	40	30	3,5	400	5W	200	30	15	50				1000		81	4
MM 8006	Mo	N	S	15	10	3	20	200	200	25	6	1				3500		30	3
MM 8007	Mo	N	S	15	10	3	20	200	200	25	6	1				3500		30	3
MM 8008	Mo	N	S	35	30	3	100	3W	200							1100		101	4
MM 8009	Mo	N	S	55	50	3	400	3W	200							1000		12	4
MM 8010	Mo	N	S	35	30	3	100	3W	200							1100		101	4
MM 8011	Mo	N	S	35	30	3	100	3W	200							1100		101	4
MM 8012	Mo	N	S	40	30	3,5	400	5W	200	30	20	50				1500		106	4
MPS A05	Mo	N	S	60	60	4	500	800	135	125	1	10				200	220	90	1
MPS A06	Mo	N	S	80	80	4	500	800	135	125	1	10				200	220	90	1

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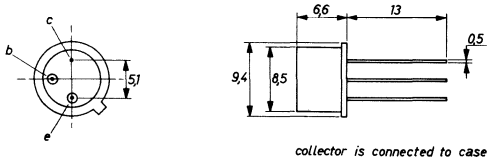

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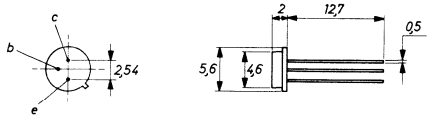

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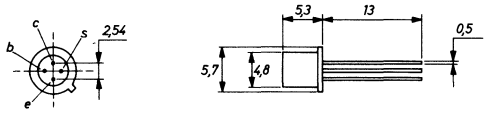

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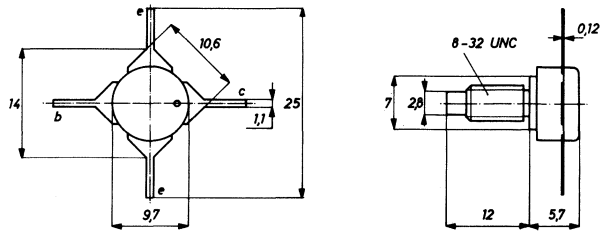

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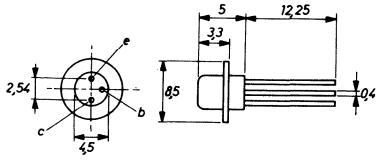

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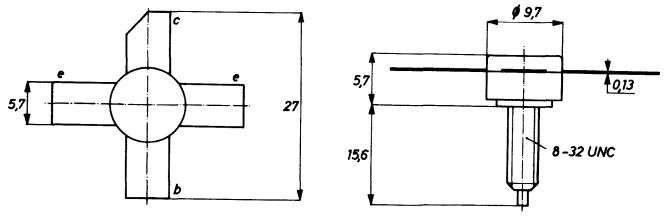

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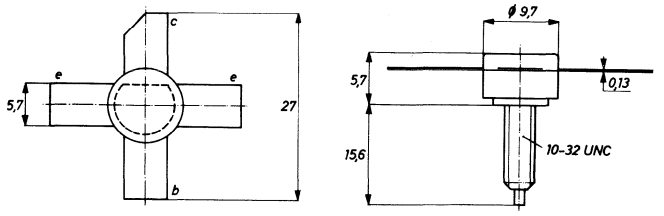

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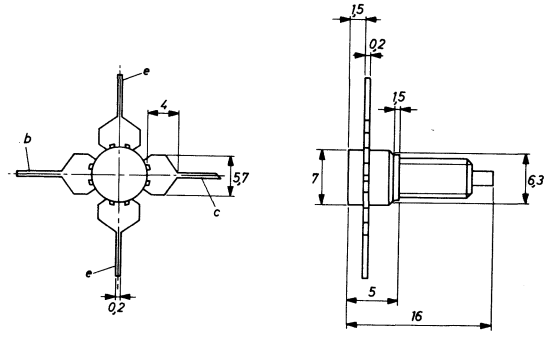

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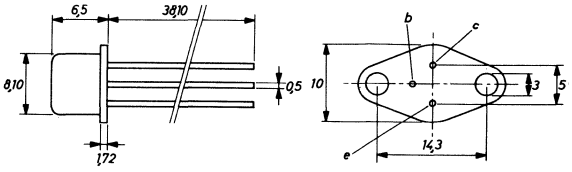

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P tot (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
MPS A09	Mo	N	S	50	50		50	310	135	100...600	5	0,1				80	357	90	1
MPS A10	Mo	N	S		40	4	100	300	135	40....400	10	5				50	367	90	1
MPS A20	Mo	N	S		40	4	100	300	135	40....400	10	5				125	367	90	1
MPS A55	Mo	P	S	60	60	4	500	800	135	150	1	10				100	220	90	1
MPS A56	Mo	P	S	80	80	4	500	800	135	150	1	10				100	220	90	1
MPS A70	Mo	P	S		40	4	100	300	135	40....400	10	5				125	367	90	1
MPS H02	Mo	N	S	20	20	3		500	135	20....200	10	4				375	220	60	3
MPS H04	Mo	N	S		80	4	100	300	135	30....120	10	1,5				180	367	90	3
MPS H05	Mo	N	S		80	4	100	300	135	30....150	10	1,5				180	367	90	3
MPS H07	Mo	N	S	30	30	3		500	135	20	10	3				400	220	90	3
MPS H08	Mo	N	S	30	30	3		500	135	20	10	3				400	220	90	3
MPS H10	Mo	N	S	30	25	3		310	135	60	10	4				650	367	60	3
MPS H11	Mo	N	S	30	25	3		310	135	60	10	4				650	357	60	3
MPS H20	Mo	N	S	40	30	4	100	310	135	25	10	4				620	357	60	3
MPS H24	Mo	N	S	40	30	4	100	500	135	30	10	8				620	220	60	3
MPS H30	Mo	N	S	20	20	3		310	135	20....200	5	4				800	357	60	3
MPS H31	Mo	N	S	20	20	3		310	135	20....200	5	4				800	357	60	3
MPS H32	Mo	N	S	40	30	4		500	135	27....200	5	4				440	220	60	3
MPS H34	Mo	N	S	45	45	4	100	500	135	40	15	7				720	220	60	3
MPS H37	Mo	N	S		40	5		310	135	25	10	5				300	357	60	3
MPS H54	Mo	P	S		80	4	100	300	135	30....120	10	1,5				185	367	90	3
MPS H55	Mo	P	S		80	4	100	300	135	30....150	10	1,5				185	367	90	3
MPS L01	Mo	N	S	140	120	5	600	310	135	50....300	5	10	30	10	1	60	357	90	5
MPS L07	Mo	P	S	6	6	4,5	80	310	135	30....120	3	10				1000	357	90	5
MPS L51	Mo	P	S	100	100	4	600	310	135	40....250	5	50	20	10	1	60	357	90	5
MPS U01	Mo	N	S		30		1,5A	8W	135	70	1	150				50	110	107	2
MPS U02	Mo	N	S	60	40	5	800	6W	135	50....300	10	150				150	110	107	2
MPS U03	Mo	N	S	120	120	5	1A	8W	135	40	10	10				100		107	2
MPS U04	Mo	N	S	180	180	5	1A	8W	125	40	10	10				100		107	2
MPS U05	Mo	N	S	60	60	4	1A	5W	135	180	5	50				150	110	107	2
MPS U06	Mo	N	S	80	80	4	1A	5W	135	180	5	50				150	110	107	2
MPS U10	Mo	N	S	300	300	8	1A	1W	135	25	15	1				60	110	107	2
MPS U51	Mo	P	S		30		1A	8W	135	70	1	150				50	110	107	2
MPS U52	Mo	P	S	60	40	5	800	6W	135	50....300	10	150				150	110	107	2
MPS U55	Mo	P	S	60	60	4	1A	5W	135	180	5	50				125	110	107	2
MPS U56	Mo	P	S	80	80	4	1A	5W	135	180	5	50				125	110	107	2
MPS 404	Mo	P	S	25	24	12	150	310	135	30....400	0,15	12					357	90	5
MPS 404A	Mo	P	S	40	35	25	150	310	135	30....400	0,15	12					357	90	5
MPS 706	Mo	N	S	25	20	3		310	135	20	1	10				200		90	5
MPS 706A	Mo	N	S	25	20	5		310	135	20.....60	1	10				200		90	5
MPS 834	Mo	N	S	40	30	5	200	500	135	25	1	10				350		90	5
MPS 918	Mo	N	S	30	15	3		310	135	20	1	3	6	10	4		357	90	3
MPS 2369	Mo	N	S	40	15	4,5	500	310	135	40....120	1	10	5	10	10		355	90	5
MPS 2711	Mo	N	S	18	18	5	100	310	135	30.....90	4,5	2	30....120	10	2		357	90	1
MPS 2712	Mo	N	S	18	18	5	100	310	135	75....225	4,5	2	80....200	10	2		357	90	1
MPS 2713	Mo	N	S	18	18	5	200	310	135	30.....90	4,5	2	30....120	4,5	2	250	357	90	1
MPS 2714	Mo	N	S	18	18	5	200	310	135	75....225	4,5	2	80....300	4,5	2	250	357	90	1
MPS 2923	Mo	N	S	25	25	5	100	200	100				90....180	10	2			90	3,5
MPS 2924	Mo	N	S	25	25	5	100	200	100				150...300	10	2			90	3,5
MPS 2925	Mo	N	S	25	25	5	100	200	100				235...470	10	2			90	3,5
MPS 2926	Mo	N	S	18	18	5	100	310	135				35....470	10	2	300	357	90	1
MPS 3392	Mo	N	S	25	25	5	100	310	135	150...300	4,5	2	150...500	4,5	2		357	90	1
MPS 3393	Mo	N	S	25	25	5	100	310	135	90....180	4,5	2	90....400	4,5	2		357	90	1
MPS 3394	Mo	N	S	25	25	5	100	310	135	55...110	4,5	2	55....300	4,5	2		357	90	1
MPS 3395	Mo	N	S	25	25	5	100	310	135	150...500	4,5	2	150...800	4,5	2		357	90	1

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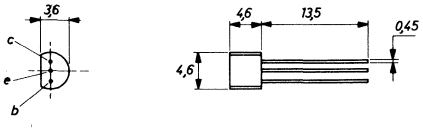

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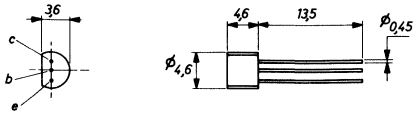

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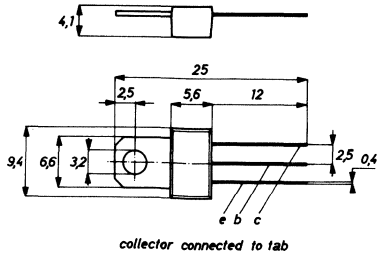
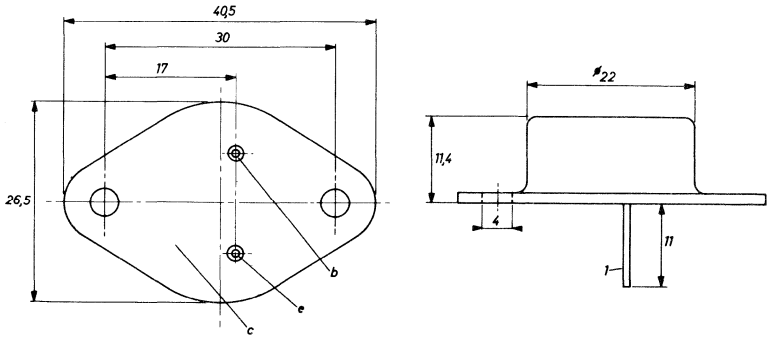


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
MPS 3396	Ns	N	S	25	25	5	100	350		90....500	4,5	2						90	1,5
MPS 3397	Ns	N	S	25	25	5	100	350		55....500	4,5	2						90	1,5
MPS 3398	Ns	N	S	25	25	5	100	350		55....800	4,5	2						90	1,5
MPS 3563	Ns	N	S	30	15	2	20	350		20....200	10	8				600		90	3
MPS 3638	Mo	P	S	25	25	4	500	310	135	30	1	50	25....180	10	10	100	357	90	5
MPS 3638A	Mo	P	S	25	25	4	500	310	135	100	1	50	100	10	10	150	357	90	5
MPS 3639	Ns	P	S	6	6	4	50	350		30....120	0,3	10				500		90	5
MPS 3640	Ns	P	S	12	12	4	50	350		30....120	0,3	10				500		90	5
MPS 3646	Ns	N	S	40	15	5	300	350		30....120	0,4	30				350		90	5
MPS 3693	Ns	N	S	45	45	4	50	350		40....160	10	10				200		90	5
MPS 3694	Ns	N	S	45	45	4	50	350		100...400	10	10				200		90	3
MPS 3702	Ns	P	S	25	40	5	500	350		60....300	5	50				100		90	1,5
MPS 3703	Ns	P	S	30	50	5	500	350		30....150	5	50				100		90	1,5
MPS 3704	Ns	N	S	50	30	5	500	350		100...300	2	50				100		90	1,5
MPS 3705	Ns	N	S	50	30	5	500	350		50....150	2	50				100		90	1,5
MPS 3706	Ns	N	S	40	20	5	500	350		30....600	2	50				100		90	1,5
MPS 3707	Ns	N	S	30	30	6	25	350		100...400	5	0,1						90	1
MPS 3708	Ns	N	S	30	30	6	25	350		40....660	5	1						90	1
MPS 3709	Ns	N	S	30	30	6	25	350		45....165	5	1						90	1
MPS 3710	Ns	N	S	30	30	6	25	350		90....330	5	1						90	1
MPS 3711	Ns	N	S	30	30	6	25	350		180...660	5	1						90	1
MPS 3721	Ns	N	S	25	25	5	500	350		60....660	10	2						90	1,5
MPS 3826	Ns	N	S	60	45	4	500	350		40....160	10	10				200		90	1,5
MPS 3827	Ns	N	S	60	45	4	500	350		100...400	10	10				200		90	1,5
MPS 5172	Mo	N	S	25	25	5	100	210	135	100...500	10	10	100...750	10	10	120	524	90	1
MPS 6511	Mo	N	S	30	20	3	100	310	135	25	10	10					357	90	1
MPS 6512	Ns	N	S	40	30	4	50	350		50....100	10	2						90	1,5
MPS 6513	Ns	N	S	40	30	4	50	350		90....180	10	2						90	1,5
MPS 6514	Ns	N	S	40	25	4	50	350		150...300	10	2						90	1,5
MPS 6515	Ns	N	S	40	25	4	50	350		250...500	10	2						90	1,5
MPS 6516	Ns	P	S	40	40	4	100	350		50....100	10	2						90	1,5
MPS 6517	Ns	P	S	40	40	4	100	350		90....180	10	2						90	1,5
MPS 6518	Ns	P	S	40	40	4	100	350		150...300	10	2						90	1,5
MPS 6519	Mo	P	S	25	25	4	100	310	135	250...500	10	2				340	357	90	1
MPS 6520	Ns	N	S	40	25	4	50	350		200...300	10	2						90	1,5
MPS 6521	Ns	N	S	40	25	4	50	350		300...600	10	2						90	1,5
MPS 6522	Ns	P	S	25	25	4	100	350		200...400	10	2						90	1,5
MPS 6523	Mo	P	S	25	25	4	100	310	135	300...600	10	2				420	357	90	1
MPS 6530	Ns	N	S	60	40	5	500	350		40....120	1	100						90	1,5
MPS 6531	Ns	N	S	60	40	5	500	350		90....270	1	100						90	1,5
MPS 6532	Ns	N	S	50	30	5	500	350		30	1	100						90	1,5
MPS 6533	Ns	P	S	40	40	4	500	350		40....120	1	100						90	1,5
MPS 6534	Ns	P	S	40	40	4	500	350		90....270	1	100						90	1,5
MPS 6535	Ns	P	S	30	30	4	500	350		30	1	100						90	1,5
MPS 6560	Mo	N	S	25	25	4	600	800	135	50....200	1	500				60	220	90	1
MPS 6561	Mo	N	S	20	20	4	600	800	135	50....200	1	350				60	220	90	1
MPS 6562	Mo	P	S	25	25	4	600	800	135	50....200	1	500				60	220	90	1
MPS 6563	Mo	P	S	20	20	4	600	800	135	50....200	1	350				60	220	90	1
MPS 6564	Ns	N	S		45	5	100	350		25	5	10						90	1,5
MPS 6565	Ns	N	S	60	45	4	50	350		40....160	10	10				200		90	1,5
MPS 6566	Ns	N	S	60	45	4	50	350		100...400	10	10				200		90	1,5
MPS 6571	Ns	N	S	25	20	3	25	350		250..1000	5	0,1				50		90	1
OC 22	Ph	P	G	32	24			21W	90	170	2	100	180	2	400	2,5		3	2,5
OC 23	Ph	P	G	40	16			21W	90	200	2	100	180	2	400	2,5		3	2,5
OC 24	Ph	P	G	40	16			21W	90	200	2	100	180	2	400	2,5		3	2,5

3



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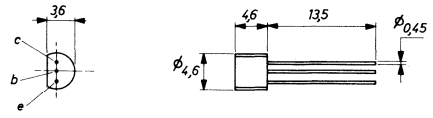
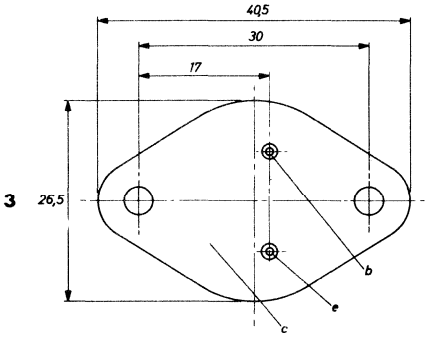
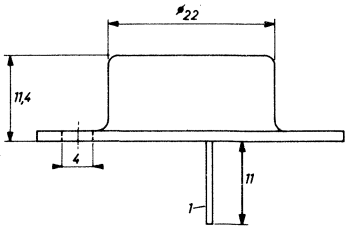
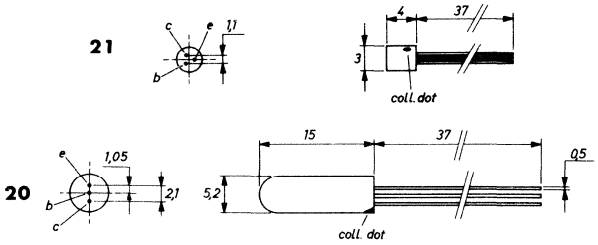
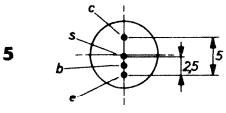


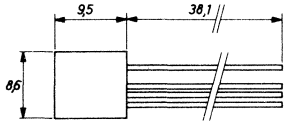
Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
OC 26	Ph	P	G	40	20		3A	12W	90	20.....75	14	30						3	2
OC 30	Ph	P	G	32	16		1A	4W	75	36	7	100						22	2
OC 44	Ph	P	G	15	5	12	5	85	75	100	6	1					600	20	3
OC 45	Ph	P	G	15	5	12	5	85	75	50	6	1					600	20	3
OC 46	Ph	P	G	20			100	80	75	20.....80		15						20	5
OC 47	Ph	P	G	20			100	80	75	50....200		15						20	5
OC 57	Ph	P	G	7	3		5	20	75				35	0,5	0,3		1500	21	1
OC 58	Ph	P	G	7	3		5	20	75				55	0,5	0,3		1500	21	1
OC 59	Ph	P	G	7	3		5	20	75				80	0,5	0,3		1500	21	1
OC 60	Ph	P	G	7	3		5	20	75				60	2	0,5		1500	21	1
OC 70	Ph	P	G				10	125	75	40	4,5	10	30	2	0,5			20	1
OC 71	Ph	P	G	10	10		10	125	75	70	4,5	1	47	2	3		400	20	1
OC 72	Ph	P	G	32	16	10	125	165	75	70	5,4	10					400	20	1
OC 74	Ph	P	G	20		6	300	550	75	40....200	6	5					220	20	1
OC 75	Ph	P	G	10	10		10	125	75	50....150	4,5	3	90	2	3		400	20	1
OC 76	Ph	P	G	32	16	10	125	165	75	45....330	5,4	10					400	20	1
OC 77	Ph	P	G	60	15	10	125	165	75	45	5,4	10					400	20	1
OC 79	Ph	P	G	26	13		300	550	75	50	6	5					220	20	1
OC 80	Ph	P	G	32		20	300	550	75	180	6	50					220	20	1
OC 122	Ph	P	G	32		12	500	300	90	180	6	100				1,3	220	5	5
OC 123	Ph	P	G	50		15	500	300	90	160	6	100				1,5	220	5	5
OC 139	Ph	N	G	20		20	250	145	75	20.....84		15				6	350	20	5
OC 140	Ph	N	G	20	20		400	145	75	50....150		15				12	350	20	5
OC 141	Ph	N	G	20	20		400	145	75	80....200		15				20	350	20	5
OC 169	Ph	P	G	20			10	50	75							70		5	3
OC 170	Ph	P	G	20			10	50	75							70		5	3
OC 171	Ph	P	G	20			10	50	75							70		5	3
OC 303	It	P	G	32	15	10	50	67	75	11	1	10	18.....35	5	1		450	9	1
OC 304	It	P	G	32	15	10	50	67	75	20	1	10	30....130	5	1		450	9	1
OC 305	It	P	G	32	8	10	50	67	75	70	1	10	110...220	5	1		450	9	1
OC 306	It	P	G	32	15	10	50	67	75	20	1	10	30....130	5	1		450	9	1
OC 307	It	P	G	32	18	10	250	75	75	20.....40	0,5	250					400	9	5
OC 308	It	P	G	32	18	10	250	75	75	30....100	0,7	80					400	9	2
OC 309	It	P	G	60	30	10	250	75	75	20....100	0,5	250					400	9	5
OC 430	It	P	S	10	10	10	50	200	150	5.....20	2	10	10.....25	5	1		520	9	2
OC 430K	It	P	S	10	10	10	50	250	150	5.....20	2	10	10.....25	5	1		420	9	1
OC 440	It	P	S	30	30	10	50	200	150	5.....20	2	10	10.....25	5	1		520	9	1
OC 440K	It	P	S	30	30	10	50	250	150	5.....20	2	10	10.....25	5	1		420	9	1
OC 443	It	P	S	25	25	20	50	200	150	9.....50	2	7	15.....60	5	1		520	9	1
OC 443K	It	P	S	25	25	20	50	250	150	9.....50	2	7	15.....60	5	1		420	9	1
OC 445	It	P	S	50	50	10	50	200	150	5.....20	2	10	10.....25	5	1		520	9	1
OC 445K	It	P	S	50	50	10	50	250	150	5.....20	2	10	10.....25	5	1		420	9	1
OC 449	It	P	S	60	60	30	50	200	150	15	2	7	25	5	1		520	9	1
OC 449K	It	P	S	60	60	30	50	250	150	15	2	7	25	5	1		420	9	1
OC 450	It	P	S	75	75	10	50	200	150	5.....20	2	10	10.....25	5	1		520	9	1

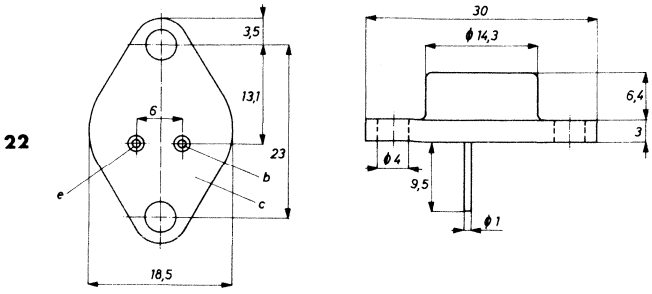


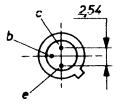


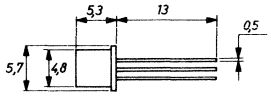








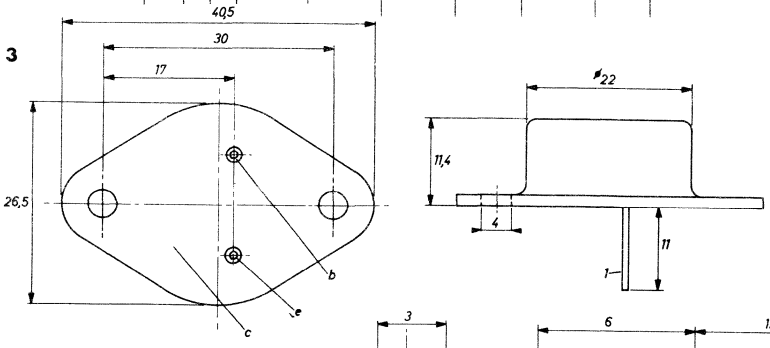




collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
OC 450K	It	P	S	75	75	10	50	250	150	5.....20	2	10	10.....25	5	1		420	9	1
OC 463	It	P	S	10	10	10	50	200	150	30	2	10	50	5	1		520	9	1
OC 463K	It	P	S	10	10	10	50	250	150	30	2	10	50	5	1		420	9	1
OC 465	It	P	S	20	20	10	50	200	150	10.....35	2	10	20.....50	5	1		520	9	1
OC 465K	It	P	S	20	20	10	50	250	150	10.....35	2	10	20.....50	5	1		420	9	1
OC 466	It	P	S	10	10	10	50	200	150	20	2	10	30	5	1		520	9	1
OC 466K	It	P	S	10	10	10	50	250	150	20	2	10	30	5	1		420	9	1
OC 467	It	P	S	25	25	20	50	200	150	13.....50	2	7	25.....60	5	1		520	9	1
OC 467K	It	P	S	25	25	20	50	250	150	13.....50	2	7	25.....60	5	1		420	9	1
OC 468	It	P	S	10	10	10	50	200	150	40	2	10	60	5	1		520	9	1
OC 468K	It	P	S	10	10	10	50	250	150	40	2	10	60	5	1		420	9	1
OC 469	It	P	S	32	32	10	50	200	150	20	2	20					520	9	1,5
OC 469K	It	P	S	32	32	10	50	250	150	20	2	20					420	9	1,5
OC 470	It	P	S	30	30	10	50	200	150	10....250	2	10	20.....70	5	1		520	9	1
OC 470K	It	P	S	30	30	10	50	250	150	10....250	2	10	20.....70	5	1		420	9	1
OC 480	It	P	S	125	125	10	50	200	150	5.....20	2	10	10.....25	5	1		520	9	1
OC 480K	It	P	S	125	125	10	50	250	150	5.....20	2	10	10.....25	5	1		420	9	1
PBC 107	Se	N	S	52	45		100	200					125...500		10	60		98	1
PBC 108	Se	N	S	20	20		100	200					125...900		10	60		98	1
PBC 109	Se	N	S	20	20		100	200					240...900		10	60		98	1
PBC 182	Se	N	S	55	50		100	300		100...480		10				60		98	1
PBC 183	Se	N	S	50	25		100	200		100...850		10				60		98	1
PBC 184	Se	N	S	50	30		100	300					240...900		10	60		98	1
SDT 1050	So	N	S	250	200	8	5A	80W		15	5	1A					45	3	2
SDT 1051	So	N	S	400	325	8	5A	80W		15	5	1A					45	3	2
SDT 1052	So	N	S	500	400	8	5A	80W		15	5	1A					45	3	2
SDT 1053	So	N	S	600	400	8	5A	80W		15	5	1A					45	3	2
SDT 1054	So	N	S	700	400	8	5A	80W		15	5	1A					45	3	2
SDT 1055	So	N	S	250	200	8	5A	80W		10.....50	5	2A					45	3	2
SDT 1056	So	N	S	400	325	8	5A	80W		10.....50	5	2A					45	3	2
SDT 1057	So	N	S	500	400	8	5A	80W		10.....50	5	2A					45	3	2
SDT 1058	So	N	S	600	400	8	5A	80W		10.....50	5	2A					45	3	2
SDT 1059	So	N	S	700	400	8	5A	80W		10.....50	5	2A					45	3	2
SDT 1060	So	N	S	250	200	8	5A	80W		10	5	3A					45	3	2
SDT 1061	So	N	S	400	325	8	5A	80W		10	5	3A					45	3	2
SDT 1062	So	N	S	500	400	8	5A	80W		10	5	3A					45	3	2
SDT 1063	So	N	S	600	400	8	5A	80W		10	5	3A					45	3	2
SDT 1064	So	N	S	700	400	8	5A	80W		10	5	3A					45	3	2
SDT 1150	So	N	S	250	200	8	5A	40W		15	5	1A						40	2
SDT 1151	So	N	S	400	325	8	5A	40W		15	5	1A						40	2
SDT 1152	So	N	S	500	400	8	5A	40W		15	5	1A						40	2
SDT 1153	So	N	S	600	400	8	5A	40W		15	5	1A						40	2
SDT 1154	So	N	S	700	400	8	5A	40W		15	5	1A						40	2
SDT 1155	So	N	S	250	200	8	5A	40W		10.....50	5	2A						40	2
SDT 1156	So	N	S	400	325	8	5A	40W		10.....50	5	2A						20	2

3



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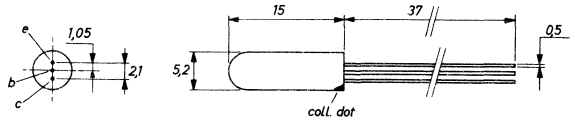

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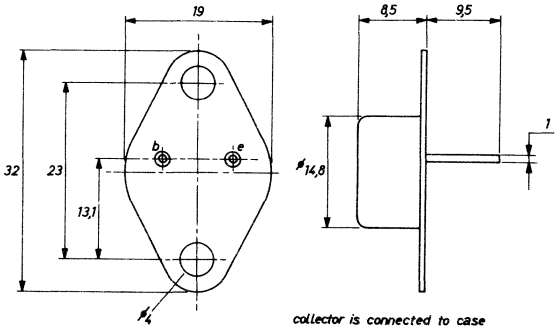

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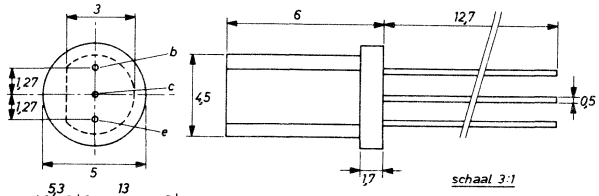

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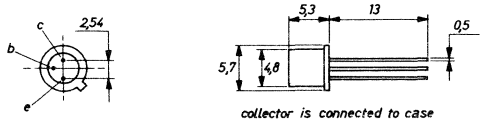

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
SDT 1157	So	N	S	500	400	8	5A	40W		10.....50	5	2A						40	2
SDT 1158	So	N	S	600	400	8	5A	40W		10.....50	5	2A						40	2
SDT 1159	So	N	S	700	400	8	5A	40W		10.....50	5	2A						40	2
SDT 1160	So	N	S	250	200	8	5A	40W		10	5	3A						40	2
SDT 1161	So	N	S	400	325	8	5A	40W		10	5	3A						40	2
SDT 1162	So	N	S	500	400	8	5A	40W		10	5	3A						40	2
SDT 1163	So	N	S	600	400	8	5A	40W		10	5	3A						40	2
SDT 1164	So	N	S	700	400	8	5A	40W		10	5	3A						40	2
SDT 1250	So	N	S	250	200	8	5A	80W		15	5	1A						27	2
SDT 1251	So	N	S	400	325	8	5A	80W		15	5	1A						27	2
SDT 1252	So	N	S	500	400	8	5A	80W		15	5	1A						27	2
SDT 1253	So	N	S	600	400	8	5A	80W		15	5	1A						27	2
SDT 1254	So	N	S	700	400	8	5A	80W		15	5	1A						27	2
SDT 1255	So	N	S	250	200	8	5A	80W		10.....50	5	2A						27	2
SDT 1256	So	N	S	400	325	8	5A	80W		10.....50	5	2A						27	2
SDT 1257	So	N	S	500	400	8	5A	80W		10.....50	5	2A						27	2
SDT 1258	So	N	S	600	400	8	5A	80W		10.....50	5	2A						27	2
SDT 1259	So	N	S	700	400	8	5A	80W		10.....50	5	2A						27	2
SDT 1260	So	N	S	250	200	8	5A	80W		10	5	3A						27	2
SDT 1261	So	N	S	400	325	8	5A	80W		10	5	3A						27	2
SDT 1262	So	N	S	500	400	8	5A	80W		10	5	3A						27	2
SDT 1263	So	N	S	600	400	8	5A	80W		10	5	3A						27	2
SDT 1264	So	N	S	700	400	8	5A	80W		10	5	3A						27	2
SDT 1808	So	P	G	80	60		65A	170W		15	2	50A						71	2
SDT 1809	So	P	G	60	45		65A	170W		15	2	50A						71	2
SDT 1810	So	P	G	40	30		65A	170W		15	2	50A						71	2
SDT 1860	So	P	G	80	60		65A	170W		20	2	65A						71	2
SDT 1861	So	P	G	60	45		65A	170W		20	2	65A						71	2
SDT 1862	So	P	G	40	30		65A	170W		20	2	65A						71	2
SDT 1908	So	P	G	80	60		65A	140W		15	2	50A						76	2
SDT 1909	So	P	G	60	45		65A	140W		15	2	50A						76	2
SDT 1910	So	P	G	40	30		65A	140W		15	2	50A						76	2
SDT 1960	So	P	G	80	60		65A	140W		20	2	65A						76	2
SDT 1961	So	P	G	60	45		65A	140W		20	2	65A						76	2
SDT 1962	So	P	G	40	30		65A	140W		20	2	65A						76	2

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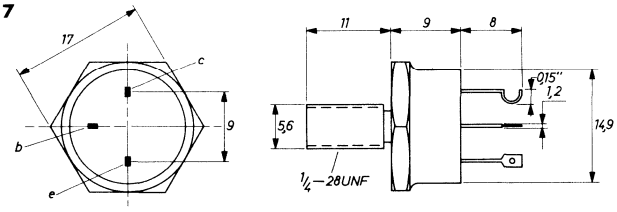

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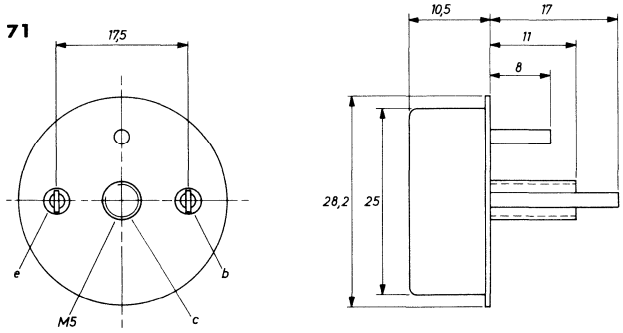

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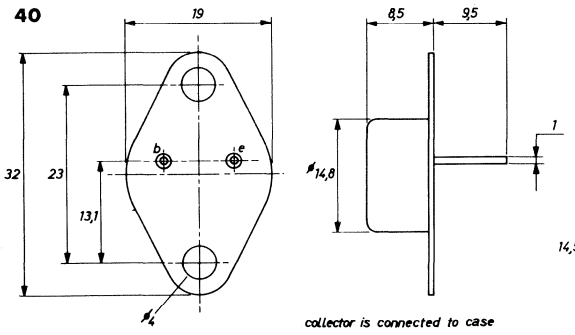

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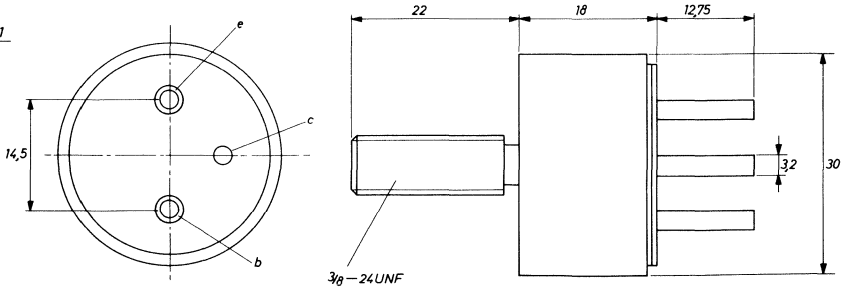

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)		
SDT 2008	So	P	G	80	60		65A	140W		15	2	50A						77	2
SDT 2009	So	P	G	60	45		65A	140W		15	2	50A						77	2
SDT 2010	So	P	G	40	30		65A	140W		15	2	50A						77	2
SDT 3101	So	P	S		40	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3102	So	P	S		60	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3103	So	P	S		80	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3104	So	P	S		100	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3105	So	P	S		40	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3106	So	P	S		60	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3107	So	P	S		80	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3108	So	P	S		100	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3109	So	P	S		120	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3125	So	P	S		40	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3126	So	P	S		60	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3127	So	P	S		80	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3128	So	P	S		100	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3129	So	P	S		120	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3201	So	N	S		40	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3203	So	N	S		80	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3204	So	N	S		100	6	10A	50W		30.....90	5	10A				50		27	2
SDT 3205	So	N	S		40	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3206	So	N	S		60	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3207	So	N	S		80	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3208	So	N	S		100	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3209	So	N	S		120	6	10A	30W		30.....90	5	5A				50		38	2
SDT 3225	So	N	S		40	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3226	So	N	S		60	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3227	So	N	S		80	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3228	So	N	S		100	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3229	So	N	S		120	6	10A	30W		20.....80	5	5A				50		38	2
SDT 3301	So	P	S		40	6	5A	30W		40....120	5	2A						38	2
SDT 3302	So	P	S		60	6	5A	30W		40....120	5	2A						38	2
SDT 3303	So	P	S		80	6	5A	30W		40....120	5	2A						38	2
SDT 3304	So	P	S		100	6	5A	30W		40....120	5	2A						38	2
SDT 3305	So	P	S		40	6	5A	30W		20.....60	5	2A						38	2
SDT 3306	So	P	S		60	6	5A	30W		20.....60	5	2A						38	2
SDT 3307	So	P	S		80	6	5A	30W		20.....60	5	2A						38	2
SDT 3308	So	P	S		100	6	5A	30W		20.....60	5	2A						38	2
SDT 3309	So	P	S		120	6	5A	30W		20.....60	5	2A						38	2
SDT 3321	So	P	S		40	6	5A	4W		40....120	5	2A						4	2

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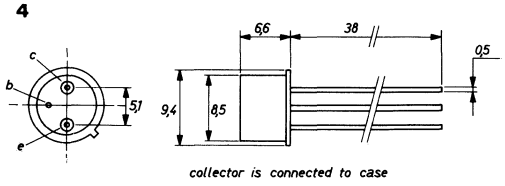

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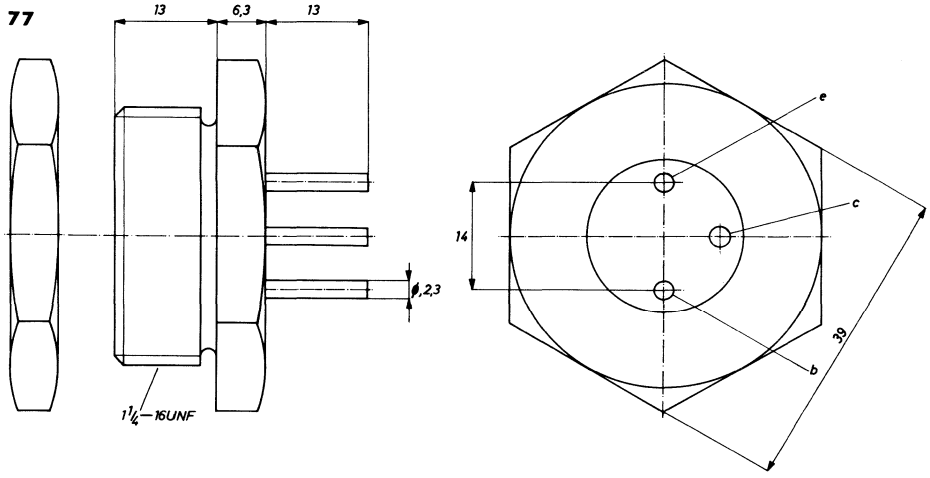

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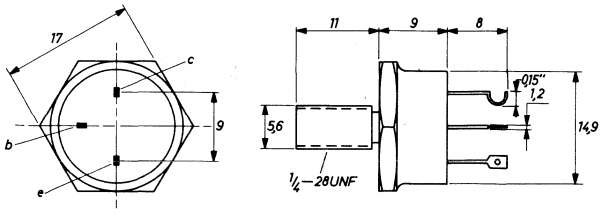

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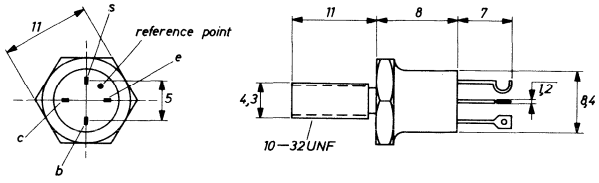

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 3322	So	P	S		60	6	5A	4W		40....120	5	2A						4	2
SDT 3323	So	P	S		80	6	5A	4W		40....120	5	2A						4	2
SDT 3324	So	P	S		100	6	5A	4W		40....120	5	2A						4	2
SDT 3325	So	P	S		40	6	5A	4W		20.....60	5	2A						4	2
SDT 3326	So	P	S		60	6	5A	4W		20.....60	5	2A						4	2
SDT 3327	So	P	S		80	6	5A	4W		20.....60	5	2A						4	2
SDT 3328	So	P	S		100	6	5A	4W		20.....60	5	2A						4	2
SDT 3329	So	P	S		120	6	5A	4W		20.....60	5	2A						4	2
SDT 3401	So	N	S		40	6	5A	30W		40....120	5	2A						38	2
SDT 3402	So	N	S		60	6	5A	30W		40....120	5	2A						38	2
SDT 3403	So	N	S		80	6	5A	30W		40....120	5	2A						38	2
SDT 3404	So	N	S		100	6	5A	30W		40....120	5	2A						38	2
SDT 3405	So	N	S		40	6	5A	30W		20.....60	5	2A						38	2
SDT 3406	So	N	S		60	6	5A	30W		20.....60	5	2A						38	2
SDT 3407	So	N	S		80	6	5A	30W		20.....60	5	2A						38	2
SDT 3408	So	N	S		100	6	5A	30W		20.....60	5	2A						38	2
SDT 3409	So	N	S		120	6	5A	30W		20.....60	5	2A						38	2
SDT 3421	So	N	S		40	6	5A	4W		40....120	5	2A						4	2
SDT 3422	So	N	S		60	6	5A	4W		40....120	5	2A						4	2
SDT 3423	So	N	S		80	6	5A	4W		40....120	5	2A						4	2
SDT 3424	So	N	S		100	6	5A	4W		40....120	5	2A						4	2
SDT 3425	So	N	S		40	6	5A	4W		20.....60	5	2A						4	2
SDT 3426	So	N	S		60	6	5A	4W		20.....60	5	2A						4	2
SDT 3427	So	N	S		80	6	5A	4W		20.....60	5	2A						4	2
SDT 3428	So	N	S		100	6	5A	4W		20.....60	5	2A						4	2
SDT 3429	So	N	S		120	6	5A	4W		20.....60	5	2A						4	2
SDT 3501	So	P	S	40	40	6	2A	4W		30	5	500				50	140	4	2
SDT 3502	So	P	S	60	60	6	2A	4W		30	5	500				50	140	4	2
SDT 3503	So	P	S	80	80	6	2A	4W		30	5	500				50	140	4	2
SDT 3504	So	P	S	100	100	6	2A	4W		30	5	500				50	140	4	2
SDT 3505	So	P	S	40	40	6	2A	4W		50....150	5	500				50	140	4	2
SDT 3506	So	P	S	60	60	6	2A	4W		50....150	5	500				50	140	4	2
SDT 3507	So	P	S	80	80	6	2A	4W		50....150	5	500				50	140	4	2
SDT 3508	So	P	S	100	100	6	2A	4W		50....150	5	500				50	140	4	2
SDT 3550	So	P	S	60	60	6	2A			30....100	1	250						4	2
SDT 3551	So	P	S	80	80	6	2A			30....100	1	250						4	2
SDT 3552	So	P	S	40	40	5	2A			20....100	1	500						4	2
SDT 3553	So	P	S	60	60	5	2A			20....100	1	500						4	2
SDT 3554	So	P	S	80	80	5	2A			20....100	1	500						4	2
SDT 3575	So	P	S	40	40	6	2A			30....150	1	250						40	2
SDT 3576	So	P	S	60	60	6	2A			30....150	1	250						40	2
SDT 3577	So	P	S	80	80	6	2A			30....150	1	250						40	2
SDT 3578	So	P	S	40	30	5	2A			25....100	10	500						40	2
SDT 3579	So	P	S	60	50	5	2A			25....100	10	500						40	2
SDT 3601	So	P	S		40	5	60A	100W		10.....40	10	40A				25		71	2

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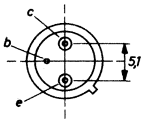

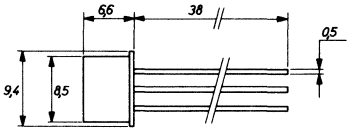

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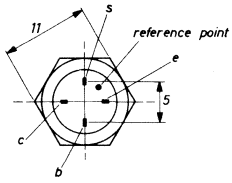

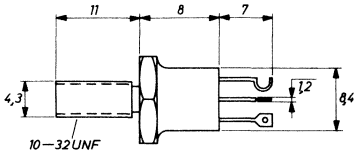

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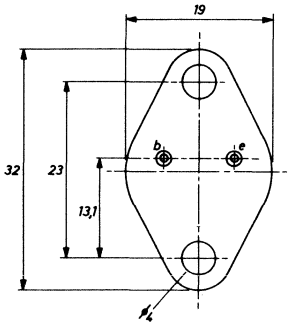

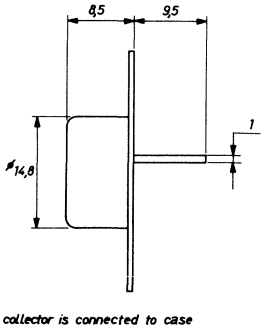

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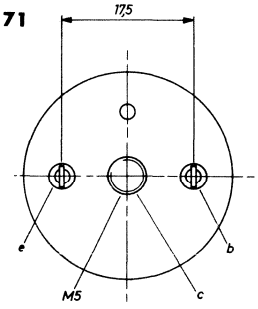

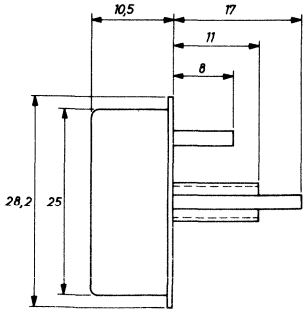

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 3602	So	P	S		60	5	60A	100W		10.....40	10	40A				25		71	2
SDT 3603	So	P	S		80	5	60A	100W		10.....40	10	40A				25		71	2
SDT 3604	So	P	S		100	5	60A	100W		10.....40	10	40A				25		71	2
SDT 3620	So	P	S	80	60	8	80A	100W		10	5	75A						72	2
SDT 3621	So	P	S	100	80	8	80A	100W		10	5	75A						72	2
SDT 3622	So	P	S	120	100	8	80A	100W		10	5	75A						72	2
SDT 3623	So	P	S	140	120	8	80A	100W		10	5	75A						72	2
SDT 3701	So	P	S	40	40	6	5A	40W		25....180	1,5	1A						40	2
SDT 3702	So	P	S	60	60	6	5A	40W		25....180	1,5	1A						40	2
SDT 3703	So	P	S	40	40	5	5A	40W		20.....80	2	1A						40	2
SDT 3704	So	P	S	60	60	5	5A	40W		20.....80	2	1A						40	2
SDT 3705	So	P	S	80	80	5	5A	40W		20.....80	2	1A						40	2
SDT 3706	So	P	S	30	30	4	5A	40W		20.....60	2	1A						40	2
SDT 3707	So	P	S	45	45	4	5A	40W		20.....60	2	1A						40	2
SDT 3708	So	P	S	60	60	4	5A	40W		20.....60	2	1A						40	2
SDT 3709	So	P	S	30	30	4	5A	40W		50....180	2	1A						40	2
SDT 3710	So	P	S	45	45	4	5A	40W		50....180	2	1A						40	2
SDT 3711	So	P	S	60	60	4	5A	40W		50....180	2	1A						40	2
SDT 3712	So	P	S	40	40	6	5A			20.....60	2	2A						40	2
SDT 3713	So	P	S	60	60	6	5A			20.....60	2	2A						40	2
SDT 3714	So	P	S	80	80	6	5A			20.....60	2	2A						40	2
SDT 3715	So	P	S	40	40	6	5A			20.....60	2	2A						40	2
SDT 3716	So	P	S	40	40	6	5A			12.....36	3	1A						40	2
SDT 3717	So	P	S	60	60	6	5A			12.....36	3	1A						40	2
SDT 3718	So	P	S	80	80	6	5A			12.....36	3	1A						40	2
SDT 3719	So	P	S	100	100	6	5A			12.....36	3	1A						40	2
SDT 3720	So	P	S	40	40	6	5A			40	3	1A						40	2
SDT 3721	So	P	S	40	40	6	5A			10.....30	3	2A						40	2
SDT 3722	So	P	S	60	60	6	5A			10.....30	3	2A						40	2
SDT 3723	So	P	S	80	80	6	5A			10.....30	3	2A						40	2
SDT 3724	So	P	S	100	100	6	5A			10.....30	3	2A						40	2
SDT 3725	So	P	S	40	40	6	5A			40	3	2A						40	2
SDT 3726	So	P	S	40	40	5	5A			25....100	2	2,5A						40	2
SDT 3727	So	P	S	60	60	5	5A			25....100	2	2,5A						40	2
SDT 3728	So	P	S	80	80	5	5A			25....100	2	2,5A						40	2
SDT 3729	So	P	S	40	40	6	5A			10.....30	3	3A						40	2
SDT 3730	So	P	S	60	60	6	5A			10.....30	3	3A						40	2
SDT 3731	So	P	S	80	80	6	5A			10.....30	3	3A						40	2
SDT 3732	So	P	S	100	100	6	5A	20W		10.....30	3	3A						40	2
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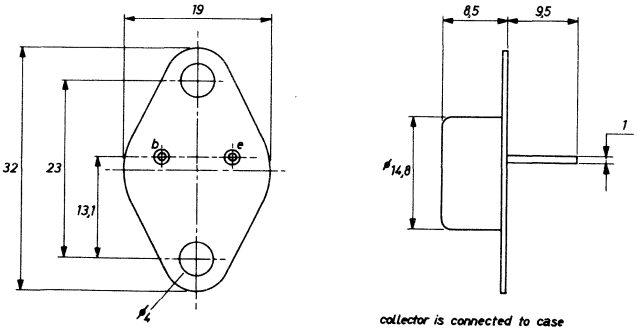

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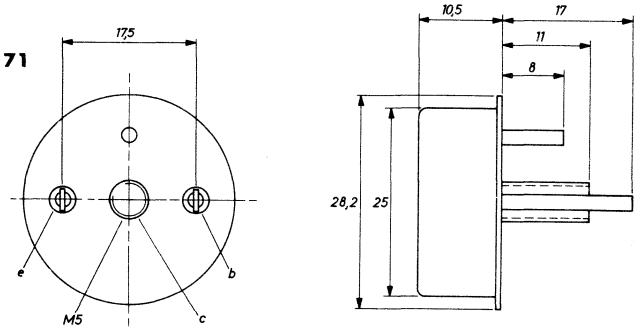

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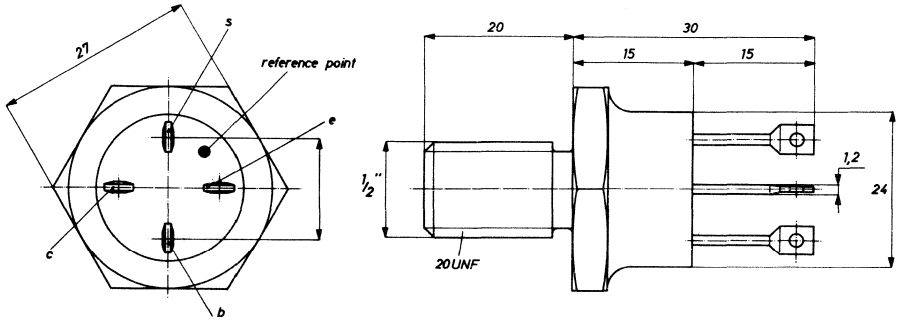

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 3750	So	P	S	40	40	6	5A	83W		25....180	1,5	1A					45	3	2
SDT 3751	So	P	S	60	60	6	5A	83W		25....180	1,5	1A					45	3	2
SDT 3752	So	P	S	40	40	6	5A	83W		12.....36	3	1A					45	3	2
SDT 3753	So	P	S	60	60	6	5A	83W		12.....36	3	1A					45	3	2
SDT 3754	So	P	S	80	80	6	5A	83W		12.....36	3	1A					45	3	2
SDT 3755	So	P	S	100	100	6	5A	83W		12.....36	3	1A					45	3	2
SDT 3756	So	P	S	40	40	6	5A	83W		40	3	1A					45	3	2
SDT 3757	So	P	S	40	40	6	5A	83W		10.....30	3	2A					45	3	2
SDT 3758	So	P	S	60	60	6	5A	83W		10.....30	3	2A					45	3	2
SDT 3759	So	P	S	80	80	6	5A	83W		10.....30	3	2A					45	3	2
SDT 3760	So	P	S	100	100	6	5A	83W		10.....30	3	2A					45	3	2
SDT 3761	So	P	S	40	40	6	5A	83W		40	3	2A					45	3	2
SDT 3762	So	P	S	40	40	6	5A	83W		10.....30	3	3A					45	3	2
SDT 3763	So	P	S	60	60	6	5A	83W		10.....30	3	3A					45	3	2
SDT 3764	So	P	S	80	80	6	5A	83W		10.....30	3	3A					45	3	2
SDT 3765	So	P	S	100	100	6	5A	83W		10.....30	3	3A					45	3	2
SDT 3766	So	P	S	40	40	6	5A	83W		40	3	3A					45	3	2
SDT 3775	So	P	S	40	40	6	5A	4W		20.....60	2	2A						4	2
SDT 3776	So	P	S	60	60	6	5A	4W		20.....60	2	2A						4	2
SDT 3777	So	P	S	80	80	6	5A	4W		20.....60	2	2A						4	2
SDT 3778	So	P	S	40	40	6	5A	4W		20.....60	2	2A						4	2
SDT 3801	So	P	S	60	60	6	15A	40W		25.....90	2	1A						40	2
SDT 3802	So	P	S	80	80	6	15A	40W		25.....90	2	1A						40	2
SDT 3803	So	P	S	60	60	6	15A	40W		50....180	2	1A						40	2
SDT 3804	So	P	S	80	80	6	15A	40W		50....180	2	1A						40	2
SDT 3805	So	P	S	40	40	5	10A	40W		20.....80	5	5A						40	2
SDT 3806	So	P	S	80	80	5	10A	40W		20.....80	5	5A						40	2
SDT 3807	So	P	S	40	40	5	10A	40W		40	5	5A						40	2
SDT 3825	So	P	S	40	40	5	10A	83W		20.....80	5	5A					45	3	2
SDT 3826	So	P	S	80	80	5	10A	83W		20.....80	5	5A					45	3	2
SDT 3827	So	P	S	40	40	5	10A	83W		40	5	5A					45	3	2
SDT 3850	So	P	S	40	40	5	10A	40W		20.....80	5	10A						40	2
SDT 3851	So	P	S	80	80	5	10A	40W		20.....80	5	10A						40	2
SDT 3852	So	P	S	40	40	5	10A	40W		40	5	10A						40	2
SDT 3875	So	P	S	40	40	5	10A	83W		20.....80	5	10A					45	3	2

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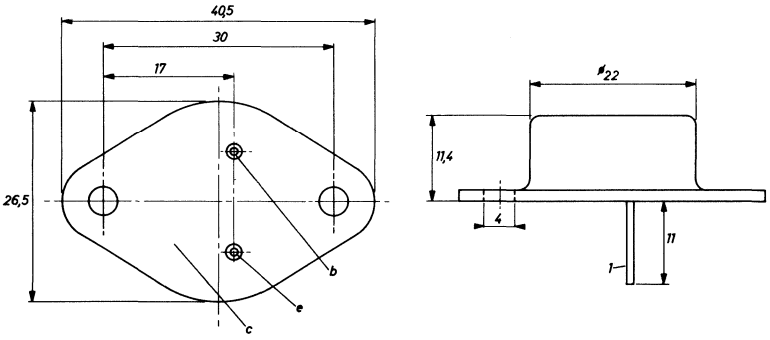

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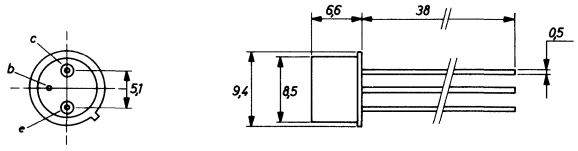

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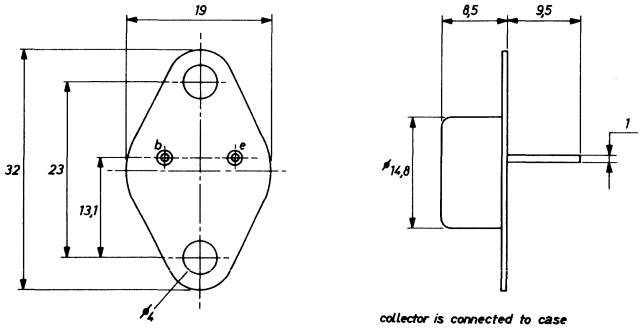
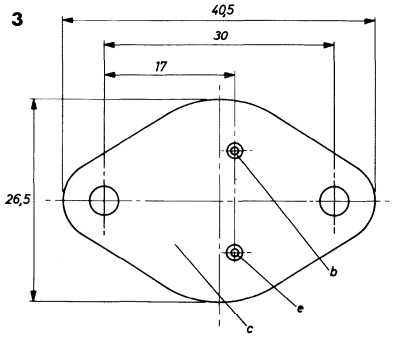


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
SDT 3876	So	P	S	80	80	5	10A	83W		20.....80	5	10A					45	3	2
SDT 3877	So	P	S	40	40	5	10A	83W		40	5	10A					45	3	2
SDT 3901	So	P	S		40	5	60A	100W		10.....40	10	40A				25		72	2
SDT 3902	So	P	S		60	5	60A	100W		10.....40	10	40A				25		72	2
SDT 3903	So	P	S		80	5	60A	100W		10.....40	10	40A				25		72	2
SDT 3904	So	P	S		100	5	60A	100W		10.....40	10	40A				25		72	2
SDT 3920	So	P	S	80	60	8	80A	100W		10	5	75A						72	2
SDT 3921	So	P	S	100	80	8	80A	100W		10	5	75A						72	2
SDT 3922	So	P	S	120	100	8	80A	100W		10	5	75A						72	2
SDT 3923	So	P	S	140	120	8	80A	100W		10	5	75A						72	2
SDT 4301	So	N	S	40	40	10	2A	4W		20.....60	4	500						4	2
SDT 4302	So	N	S	60	60	10	2A	4W		20.....60	4	500						4	2
SDT 4303	So	N	S	80	80	10	2A	4W		20.....60	4	500						4	2
SDT 4304	So	N	S	40	40	10	2A	4W		40....120	4	500						4	2
SDT 4305	So	N	S	60	60	10	2A	4W		40....120	4	500						4	2
SDT 4306	So	N	S	80	80	10	2A	4W		40....120	4	500						4	2
SDT 4307	So	N	S	40	40	10	2A	4W		20.....60	4	1A						4	2
SDT 4308	So	N	S	60	60	10	2A	4W		20.....60	4	1A						4	2
SDT 4310	So	N	S	40	40	10	2A	4W		40....120	4	1A						4	2
SDT 4311	So	N	S	60	60	10	2A	4W		40....120	4	1A						4	2
SDT 4312	So	N	S	80	80	10	2A	4W		40....120	4	1A						4	2
SDT 4451	So	N	S	80	40	8	5A	4W		20.....60	5	1A				70	140	4	2
SDT 4452	So	N	S	100	80	8	5A	4W		20.....60	5	1A				70	140	4	2
SDT 4453	So	N	S	80	40	8	5A	4W		40....120	5	1A				70	140	4	2
SDT 4454	So	N	S	100	80	8	5A	4W		40....120	5	1A				70	140	4	2
SDT 4455	So	N	S	80	40	8	5A	4W		100	5	1A				70	140	4	2
SDT 4456	So	N	S	100	80	8	5A	4W		100	5	1A				70	140	4	2
SDT 4483	So	N	S	60	40	5	5A	4W		20.....60	5	1A				70	140	4	2
SDT 4551	So	N	S	80	40	8	5A	20W		20.....60	5	1A				70	100	75	2
SDT 4552	So	N	S	100	80	8	5A	20W		20.....60	5	1A				70	100	75	2
SDT 4553	So	N	S	80	40	8	5A	20W		40....120	5	1A				70	100	75	2
SDT 4554	So	N	S	100	80	8	5A	20W		40....120	5	1A				70	100	75	2
SDT 4555	So	N	S	80	40	8	5A	20W		100	5	1A				70	100	75	2
SDT 4556	So	N	S	100	80	8	5A	20W		100	5	1A				70	100	75	2
SDT 4583	So	N	S	60	40	5	5A	20W		20.....60	5	1A				70	100	75	2
SDT 4901	So	N	S	225	200	8	5A	20W		20.....60	5	1A						40	2
SDT 4902	So	N	S	250	225	8	5A	20W		20.....60	5	1A						40	2
SDT 4903	So	N	S	275	250	8	5A	20W		20.....60	5	1A						40	2
SDT 4904	So	N	S	300	275	8	5A	20W		20.....60	5	1A						40	2
SDT 4905	So	N	S	325	300	8	5A	20W		20.....60	5	1A						40	2

3



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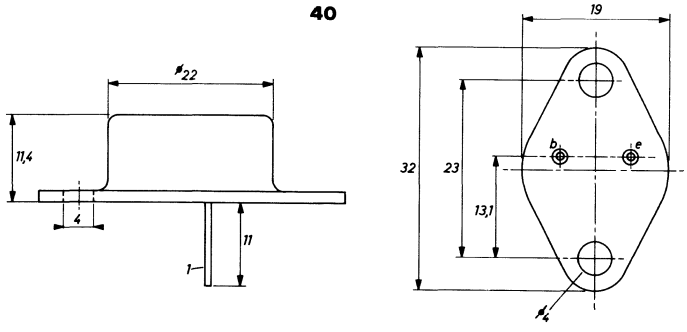

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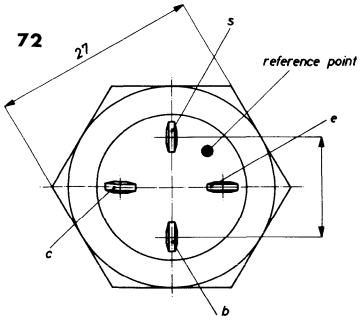

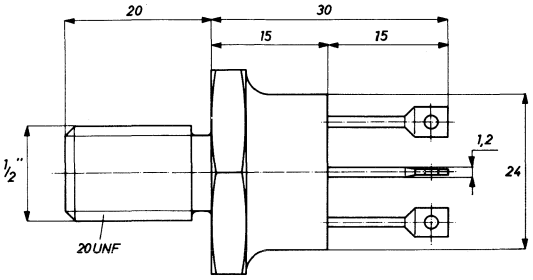

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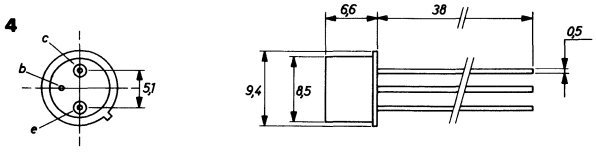

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 4921	So	N	S	225	200	8	5A	4W		20.....60	5	1A						4	2
SDT 4922	So	N	S	250	225	8	5A	4W		20.....60	5	1A						4	2
SDT 4923	So	N	S	275	250	8	5A	4W		20.....60	5	1A						4	2
SDT 4924	So	N	S	300	275	8	5A	4W		20.....60	5	1A						4	2
SDT 4925	So	N	S	325	300	8	5A	4W		20.....60	5	1A						4	2
SDT 4941	So	N	S	225	200	8	5A	30W		20.....60	5	1A						38	2
SDT 4942	So	N	S	250	225	8	5A	30W		20.....60	5	1A						38	2
SDT 4943	So	N	S	275	250	8	5A	30W		20.....60	5	1A						38	2
SDT 4944	So	N	S	300	275	8	5A	30W		20.....60	5	1A						38	2
SDT 4945	So	N	S	325	300	8	5A	30W		20.....60	5	1A						38	2
SDT 5001	So	N	S	60	40	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5002	So	N	S	80	60	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5003	So	N	S	100	80	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5004	So	N	S	140	100	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5005	So	N	S	180	120	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5006	So	N	S	60	40	8	2A	4W		30	5	500				85	437	17	2
SDT 5007	So	N	S	80	60	8	2A	4W		30	5	500				85	437	17	2
SDT 5008	So	N	S	100	80	8	2A	4W		30	5	500				85	437	17	2
SDT 5009	So	N	S	140	100	8	2A	4W		30	5	500				85	437	17	2
SDT 5010	So	N	S	180	120	8	2A	4W		30	5	500				85	437	17	2
SDT 5011	So	N	S	60	40	8	2A	4W		120	5	500				85	437	17	2
SDT 5012	So	N	S	80	60	8	2A	4W		120	5	500				85	437	17	2
SDT 5013	So	N	S	100	80	8	2A	4W		120	5	500				85	437	17	2
SDT 5014	So	N	S	140	100	8	2A	4W		120	5	500				85	437	17	2
SDT 5015	So	N	S	180	120	8	2A	4W		120	5	500				85	437	17	2
SDT 5051	So	N	S	175	150	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5052	So	N	S	200	175	8	2A	4W		50....150	5	500				85	437	17	2
SDT 5054	So	N	S	175	150	8	2A	4W		30	5	500				85	437	17	2
SDT 5055	So	N	S	200	175	8	2A	4W		30	5	500				85	437	17	2
SDT 5056	So	N	S	225	200	8	2A	4W		30	5	500				85	437	17	2
SDT 5501	So	N	S	60	40	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5502	So	N	S	80	60	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5503	So	N	S	100	80	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5504	So	N	S	140	100	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5505	So	N	S	180	120	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5506	So	N	S	60	40	8	2A	4W		30	5	500				85	140	4	2
SDT 5507	So	N	S	80	60	8	2A	4W		30	5	500				85	140	4	2
SDT 5508	So	N	S	100	80	8	2A	4W		30	5	500				85	140	4	2
SDT 5509	So	N	S	140	100	8	2A	4W		30	5	500				85	140	4	2
SDT 5510	So	N	S	180	120	8	2A	4W		30	5	500				85	140	4	2
SDT 5511	So	N	S	60	40	8	2A	4W		120	5	500				85	140	4	2
SDT 5512	So	N	S	80	60	8	2A	4W		120	5	500				85	140	4	2
SDT 5513	So	N	S	100	80	8	2A	4W		120	5	500				85	140	4	2
SDT 5514	So	N	S	140	100	8	2A	4W		120	5	500				85	140	4	2
SDT 5515	So	N	S	180	120	8	2A	4W		120	5	500				85	140	4	2
SDT 5551	So	N	S	175	150	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5552	So	N	S	200	175	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5553	So	N	S	225	200	8	2A	4W		50....150	5	500				85	140	4	2
SDT 5554	So	N	S	175	150	8	2A	4W		30	5	500				85	140	4	2
SDT 5555	So	N	S	200	175	8	2A	4W		30	5	500				85	140	4	2
SDT 5556	So	N	S	225	200	8	2A	4W		30	5	500				85	140	4	2
SDT 5901	So	N	S	60	40	8	2A	17W		50....150	2	500				85	87	40	2
SDT 5902	So	N	S	80	60	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5903	So	N	S	100	80	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5904	So	N	S	140	100	8	2A	17W		50....150	5	500				85	87	40	2

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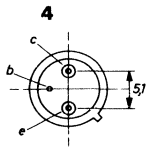

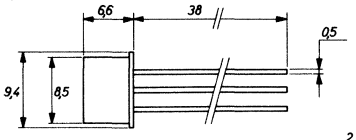

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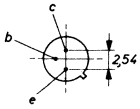

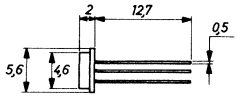

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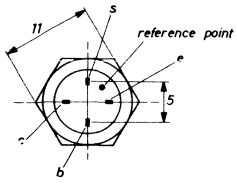

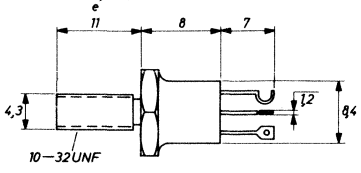

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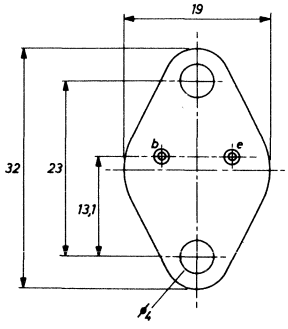

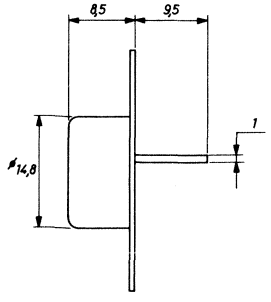

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 5905	So	N	S	180	120	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5906	So	N	S	60	40	8	2A	17W		30	5	500				85	87	40	2
SDT 5907	So	N	S	80	60	8	2A	17W		30	5	500				85	87	40	2
SDT 5908	So	N	S	100	80	8	2A	17W		30	5	500				85	87	40	2
SDT 5909	So	N	S	140	100	8	2A	17W		30	5	500				85	87	40	2
SDT 5910	So	N	S	180	120	8	2A	17W		30	5	500				85	87	40	2
SDT 5911	So	N	S	60	40	8	2A	17W		120	5	500				85	87	40	2
SDT 5912	So	N	S	80	60	8	2A	17W		120	5	500				85	87	40	2
SDT 5913	So	N	S	100	80	8	2A	17W		120	5	500				85	87	40	2
SDT 5914	So	N	S	140	100	8	2A	17W		120	5	500				85	87	40	2
SDT 5915	So	N	S	180	120	8	2A	17W		120	5	500				85	87	40	2
SDT 5951	So	N	S	175	150	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5952	So	N	S	200	175	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5953	So	N	S	225	200	8	2A	17W		50....150	5	500				85	87	40	2
SDT 5954	So	N	S	175	150	8	2A	17W		30	5	500				85	87	40	2
SDT 5955	So	N	S	200	175	8	2A	17W		30	5	500				85	87	40	2
SDT 5956	So	N	S	225	200	8	2A	17W		30	5	500				85	87	40	2
SDT 6001	So	N	S	100	50	5	5A	40W		10	5	1A				70		73	2
SDT 6011	So	N	S	80	40	8	5A	40W		20.....60	5	1A				70		73	2
SDT 6012	So	N	S	100	80	8	5A	40W		20.....60	5	1A				70		73	2
SDT 6013	So	N	S	80	40	8	5A	40W		40....120	5	1A				70		73	2
SDT 6014	So	N	S	100	80	8	5A	40W		40....120	5	1A				70		73	2
SDT 6015	So	N	S	80	40	8	5A	40W		100	5	1A				70		73	2
SDT 6016	So	N	S	100	80	8	5A	40W		100	5	1A				70		73	2
SDT 6031	So	N	S	60	40	5	5A	40W		20.....60	5	1A				70		73	2
SDT 6101	So	N	S	65	30	4	5A	4W		10	5	2A				450		4	5
SDT 6102	So	N	S	65	40	4	5A	4W		10	5	2A				450		4	5
SDT 6103	So	N	S	65	50	4	5A	4W		10	5	2A				450		4	5
SDT 6104	So	N	S	65	30	4	5A	4W		10	5	2A				450		26	5
SDT 6105	So	N	S	65	40	4	5A	4W		10	5	2A				450		26	5
SDT 6106	So	N	S	65	50	4	5A	4W		10	5	2A				450		26	5
SDT 6110	So	N	S	65	30	4	10A	4W		10	5	5A				350		4	5
SDT 6111	So	N	S	65	40	4	10A	4W		10	5	5A				350		4	5
SDT 6112	So	N	S	65	50	4	10A	4W		10	5	5A				350		4	5
SDT 6113	So	N	S	65	30	4	10A	4W		10	5	5A				350		26	5
SDT 6114	So	N	S	65	40	4	10A	4W		10	5	5A				350		26	5
SDT 6115	So	N	S	65	50	4	10A	4W		10	5	5A				350		26	5
SDT 6308	So	N	S	60	40	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6309	So	N	S	80	60	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6310	So	N	S	100	80	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6311	So	N	S	60	40	8	5A	30W		40....120	5	1A				70		38	2
SDT 6312	So	N	S	80	60	8	5A	30W		40....120	5	1A				70		38	2
SDT 6313	So	N	S	100	80	8	5A	30W		40....120	5	1A				70		38	2
SDT 6314	So	N	S	60	40	8	5A	30W		100	5	1A				70		38	2
SDT 6315	So	N	S	80	60	8	5A	30W		100	5	1A				70		38	2
SDT 6316	So	N	S	100	80	8	5A	30W		100	5	1A				70		38	2
SDT 6408	So	N	S	60	40	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6409	So	N	S	80	60	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6410	So	N	S	100	80	8	5A	30W		20.....60	5	1A				70		38	2
SDT 6411	So	N	S	60	40	8	5A	30W		40....120	5	1A				70		33	2

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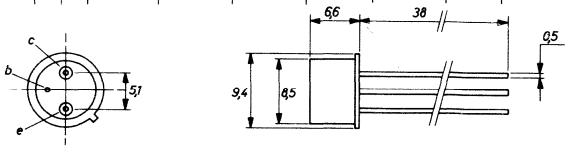

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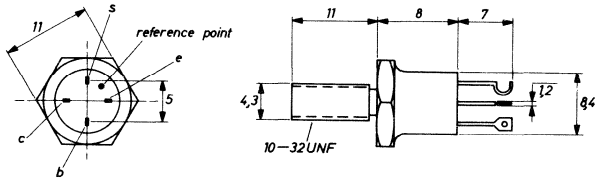

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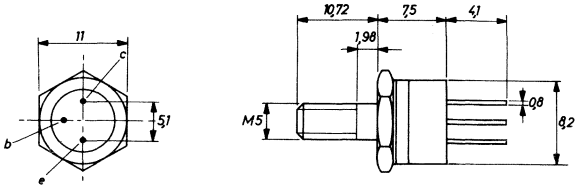

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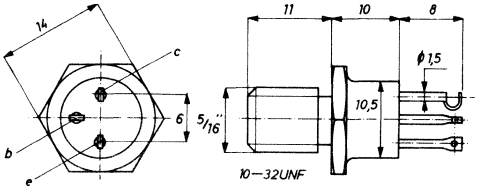

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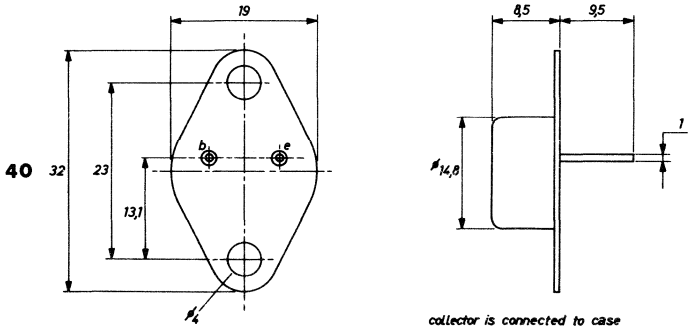

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{cco} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 6412	So	N	S	80	60	8	5A	30W		40....120	5	1A				70		38	2
SDT 6413	So	N	S	100	80	8	5A	30W		40....120	5	1A				70		38	2
SDT 6414	So	N	S	60	40	8	5A	30W		100	5	1A				70		38	2
SDT 6415	So	N	S	80	60	8	5A	30W		100	5	1A				70		38	2
SDT 6416	So	N	S	100	80	8	5A	30W		100	5	1A				70		38	2
SDT 6901	So	N	S	145	125	8	5A	20W		20.....60	5	1A				70	87	40	2
SDT 6902	So	N	S	170	150	8	5A	20W		20.....60	5	1A				70	87	40	2
SDT 6903	So	N	S	195	175	8	5A	20W		20.....60	5	1A				70	87	40	2
SDT 6904	So	N	S	220	200	8	5A	20W		20.....60	5	1A				70	87	40	2
SDT 6905	So	N	S	145	125	8	5A	20W		40....120	5	1A				70	87	40	2
SDT 6906	So	N	S	170	150	8	5A	20W		40....120	5	1A				70	87	40	2
SDT 6907	So	N	S	195	175	8	5A	20W		40....120	5	1A				70	87	40	2
SDT 6908	So	N	S	220	200	8	5A	20W		40....120	5	1A				70	87	40	2
SDT 7A01	So	N	S	60	40	8	10A	40W		40....120	5	5A						40	2
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SDT 7A03	So	N	S	100	80	8	10A	40W		40....120	5	5A						40	2
SDT 7A04	So	N	S	140	120	8	10A	40W		40....120	5	5A						40	2
SDT 7A05	So	N	S	170	150	8	10A	40W		40....120	5	5A						40	2
SDT 7A06	So	N	S	220	200	8	10A	40W		40....120	5	5A						40	2
SDT 7B01	So	N	S	80	60	5	10A	30W		40....120	5	5A						38	2
SDT 7B02	So	N	S	100	80	5	10A	30W		40....120	5	5A						38	2
SDT 7B03	So	N	S	120	100	5	10A	30W		40....120	5	5A						38	2
SDT 7B04	So	N	S	140	120	5	10A	30W		40....120	5	5A						38	2
SDT 7B05	So	N	S	80	60	5	10A	30W		20	5	5A						38	2
SDT 7B06	So	N	S	100	80	5	10A	30W		20	5	5A						38	2
SDT 7B07	So	N	S	120	100	5	10A	30W		20	5	5A						38	2
SDT 7B08	So	N	S	140	120	5	10A	30W		20	5	5A						38	2
SDT 7011	So	N	S	60	40	5	10A	50W		20.....60	5	5A				60		27	2
SDT 7012	So	N	S	80	60	5	10A	50W		20.....60	5	5A				60		27	2
SDT 7013	So	N	S	100	80	5	10A	50W		20.....60	5	5A				60		27	2
SDT 7014	So	N	S	60	40	5	10A	50W		40....120	5	5A				60		27	2
SDT 7015	So	N	S	80	60	5	10A	50W		40....120	5	5A				60		27	2
SDT 7016	So	N	S	100	80	5	10A	50W		40....120	5	5A				60		27	2
SDT 7017	So	N	S	60	40	5	10A	50W		100	5	5A				60		27	2
SDT 7018	So	N	S	80	60	5	10A	50W		100	5	5A				60		27	2
SDT 7019	So	N	S	100	80	5	10A	50W		100	5	5A				60		27	2
SDT 7140	So	N	S	120	100	8	10A	50W		40....120	5	5A				60		27	2
SDT 7141	So	N	S	200	150	8	10A	50W		40....120	5	5A				60		27	2
SDT 7150	So	N	S	140	200	8	10A	50W		20.....60	5	5A				60		27	2
SDT 7151	So	N	S	170	150	8	10A	50W		20.....60	5	5A				60		27	2
SDT 7152	So	N	S	220	200	8	10A	50W		20.....60	5	5A				60		27	2
SDT 7154	So	N	S	140	200	8	10A	50W		40....120	5	5A				60		27	2
SDT 7155	So	N	S	170	150	8	10A	50W		40....120	5	5A				60		27	2
SDT 7156	So	N	S	220	200	8	10A	50W		40....120	5	5A				60		27	2
SDT 7201	So	N	S	225	200	8	10A	80W		20.....60	5	5A					45	3	2
SDT 7202	So	N	S	250	225	8	10A	80W		20.....60	5	5A					45	3	2
SDT 7203	So	N	S	275	250	8	10A	80W		20.....60	5	5A					45	3	2
SDT 7204	So	N	S	325	300	8	10A	80W		20.....60	5	5A					45	3	2
SDT 7205	So	N	S	350	325	8	10A	80W		20.....60	5	5A					45	3	2
SDT 7206	So	N	S	150	150	8	10A	80W		10	5	5A					45	3	2

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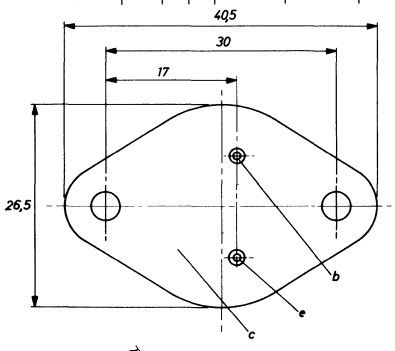

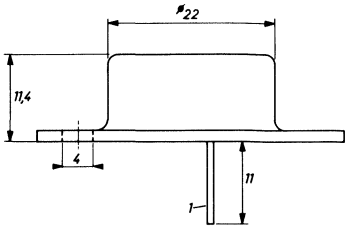

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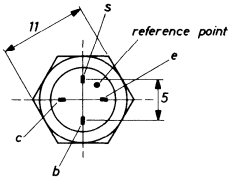

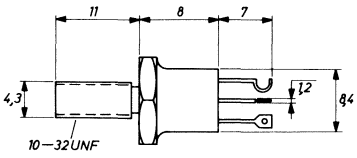

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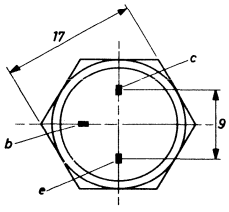

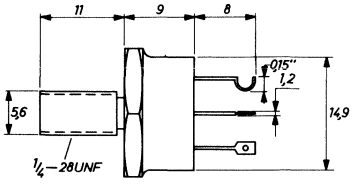

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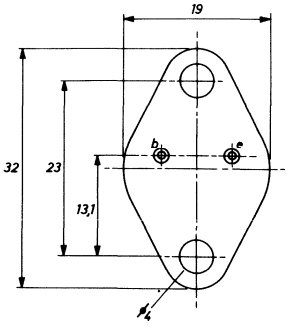

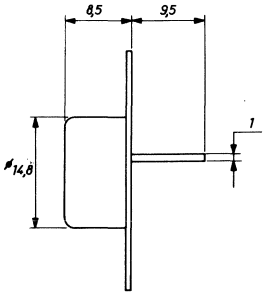

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
SDT 7207	So	N	S	200	200	8	10A	80W		15	5	5A					45	3	2
SDT 7208	So	N	S	250	250	8	10A	80W		15	5	5A					45	3	2
SDT 7209	So	N	S	300	300	8	10A	80W		15	5	5A					45	3	2
SDT 7401	So	N	S	60	40	5	10A	5W		40....120	5	5A					140	4	2
SDT 7402	So	N	S	80	60	5	10A	5W		40....120	5	5A					140	4	2
SDT 7403	So	N	S	100	80	5	10A	5W		40....120	5	5A					140	4	2
SDT 7411	So	N	S	60	40	5	10A	5W		20.....60	5	5A					140	4	2
SDT 7412	So	N	S	80	60	5	10A	5W		20.....60	5	5A					140	4	2
SDT 7413	So	N	S	100	80	5	10A	5W		20.....60	5	5A					140	4	2
SDT 7414	So	N	S	60	40	5	10A	5W		40....120	5	5A					140	4	2
SDT 7415	So	N	S	80	60	5	10A	5W		40....120	5	5A					140	4	2
SDT 7416	So	N	S	100	80	5	10A	5W		40....120	5	5A					140	4	2
SDT 7417	So	N	S	60	40	5	10A	5W		100	5	5A					140	4	2
SDT 7418	So	N	S	80	60	5	10A	5W		100	5	5A					140	4	2
SDT 7419	So	N	S	100	80	5	10A	5W		100	5	5A					140	4	2
SDT 7601	So	N	S	60	40	8	10A	65W		40....120	5	5A				60	45	3	2
SDT 7602	So	N	S	80	60	8	10A	65W		40....120	5	5A				60	45	3	2
SDT 7603	So	N	S	100	80	8	10A	65W		40....120	5	5A				60	45	3	2
SDT 7604	So	N	S	140	120	8	10A	65W		40....120	5	5A				60	45	3	2
SDT 7605	So	N	S	170	150	8	10A	65W		40....120	5	5A				60	45	3	2
SDT 7607	So	N	S	60	40	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7608	So	N	S	80	60	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7609	So	N	S	100	80	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7610	So	N	S	140	120	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7611	So	N	S	170	150	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7612	So	N	S	220	200	8	10A	65W		20.....60	5	5A				60	45	3	2
SDT 7711	So	N	S	60	40	20	10A	30W		20.....80	5	5A						38	2
SDT 7712	So	N	S	80	60	20	10A	30W		20.....80	5	5A						38	2
SDT 7713	So	N	S	100	80	20	10A	30W		20.....80	5	5A						38	2
SDT 7714	So	N	S	120	100	20	10A	30W		20.....80	5	5A						38	2
SDT 7715	So	N	S	140	125	20	10A	30W		20.....80	5	5A						38	2
SDT 7716	So	N	S	165	150	20	10A	30W		20.....80	5	5A						38	2
SDT 7731	So	N	S	60	40	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7732	So	N	S	80	60	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7733	So	N	S	100	80	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7734	So	N	S	120	100	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7735	So	N	S	140	125	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7736	So	N	S	165	150	20	10A	80W		20.....80	5	5A					45	3	2
SDT 7741	So	N	S	60	40	20	10A	40W		20.....80	5	5A						40	2
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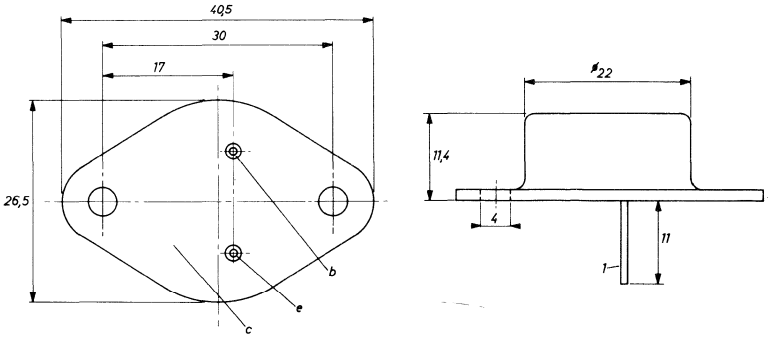

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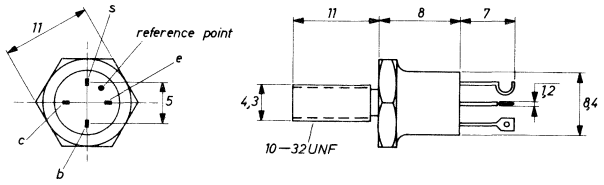

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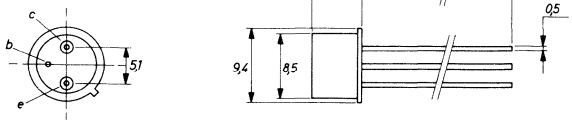

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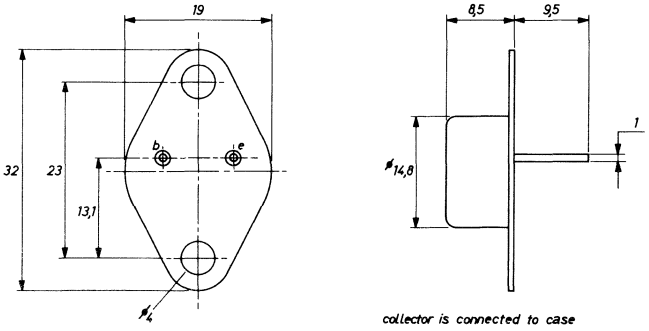

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
SDT 7743	So	N	S	100	80	20	10A	40W		20.....80	5	5A						40	2
SDT 7744	So	N	S	120	100	20	10A	40W		20.....80	5	5A						40	2
SDT 7745	So	N	S	140	125	20	10A	40W		20.....80	5	5A						40	2
SDT 7746	So	N	S	165	150	20	10A	40W		20.....80	5	5A						40	2
SDT 7761	So	N	S	60	40	20	10A	50W		20.....80	5	5A						27	2
SDT 7762	So	N	S	80	60	20	10A	50W		20.....80	5	5A						27	2
SDT 7763	So	N	S	100	80	20	10A	50W		20.....80	5	5A						27	2
SDT 7764	So	N	S	120	100	20	10A	50W		20.....80	5	5A						27	2
SDT 7765	So	N	S	140	125	20	10A	50W		20.....80	5	5A						27	2
SDT 7766	So	N	S	165	150	20	10A	50W		20.....80	5	5A						27	2
SDT 7801	So	N	S	225	200	8	10A	80W		20.....60	5	5A						27	2
SDT 7802	So	N	S	250	225	8	10A	80W		20.....60	5	5A						27	2
SDT 7803	So	N	S	275	250	8	10A	80W		20.....60	5	5A						27	2
SDT 7804	So	N	S	325	300	8	10A	80W		20.....60	5	5A						27	2
SDT 7805	So	N	S	350	325	8	10A	80W		20.....60	5	5A						27	2
SDT 7806	So	N	S	150	150	8	10A	80W		10	5	5A						27	2
SDT 7807	So	N	S	200	200	8	10A	80W		15	5	5A						27	2
SDT 7808	So	N	S	250	250	8	10A	80W		15	5	5A						27	2
SDT 7809	So	N	S	300	300	8	10A	80W		15	5	5A						27	2
SDT 7901	So	N	S	225	200	8	10A	40W		20.....60	5	5A						40	2
SDT 7902	So	N	S	250	225	8	10A	40W		20.....60	5	5A						40	2
SDT 7903	So	N	S	275	250	8	10A	40W		20.....60	5	5A						40	2
SDT 7904	So	N	S	325	300	8	10A	40W		20.....60	5	5A						40	2
SDT 7905	So	N	S	350	325	8	10A	40W		20.....60	5	5A						40	2
SDT 7907	So	N	S	200	200	8	10A	40W		15	5	5A						40	2
SDT 7908	So	N	S	250	250	8	10A	40W		15	5	5A						40	2
SDT 7909	So	N	S	300	300	8	10A	40W		15	5	5A						40	2
SDT 7910	So	N	S	150	150	8	10A	40W		10	5	5A						40	2
SDT 8002	So	N	S	80	60	8	25A	100W		40....120	5	10A				35		28	2
SDT 8003	So	N	S	100	80	8	25A	100W		40....120	5	10A				35		28	2
SDT 8012	So	N	S	80	60	8	25A	100W		20.....60	5	10A				35		28	2
SDT 8013	So	N	S	100	80	8	25A	100W		20.....60	5	10A				35		28	2
SDT 8014	So	N	S	80	60	8	25A	100W		40....120	5	10A				35		28	2
SDT 8016	So	N	S	100	80	8	25A	100W		40....120	5	10A				35		28	2
SDT 8045	So	N	S	40	25	5	25A	100W		40	5	10A				35		28	2
SDT 8070	So	N	S	80	60	8	25A	100W		100	5	10A				35		28	2
SDT 8071	So	N	S	100	80	8	25A	100W		100	5	10A				35		28	2
SDT 8105	So	N	S	80	60	8	25A	65W		40....120	5	10A				35		51	2
SDT 8106	So	N	S	100	80	8	25A	65W		40....120	5	10A				35		51	2
SDT 8110	So	N	S	80	60	8	25A	65W		100	5	10A				35		51	2
SDT 8112	So	N	S	80	60	8	25A	65W		20.....60	5	10A				35		51	2
SDT 8113	So	N	S	100	80	8	25A	65W		20.....60	5	10A				35		51	2
SDT 8114	So	N	S	40	25	5	25A	65W		40	5	10A				35		51	2
SDT 8115	So	N	S	80	60	8	25A	65W		40....120	5	10A				35		51	2
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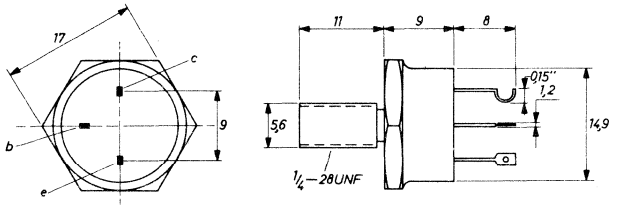

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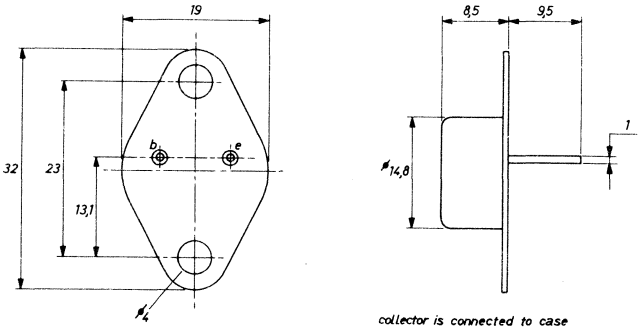

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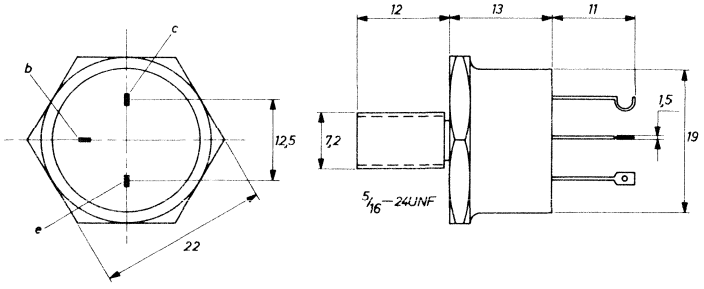

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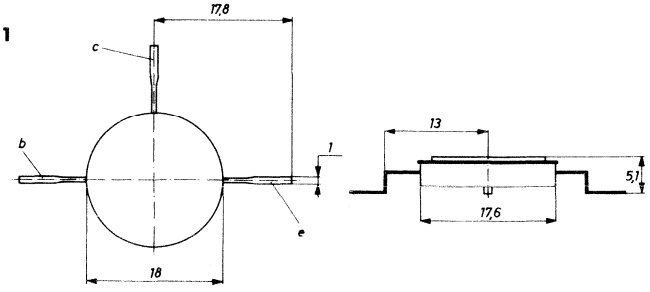

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
SDT 8151	So	N	S	150	120	8	25A	65W		40....120	5	10A						27	2
SDT 8152	So	N	S	100	80	8	25A	65W		40....120	5	10A						27	2
SDT 8153	So	N	S	80	60	8	25A	65W		40....120	5	10A						27	2
SDT 8154	So	N	S	100	80	8	25A	65W		100	5	10A						27	2
SDT 8155	So	N	S	80	60	8	25A	65W		100	5	10A						27	2
SDT 8156	So	N	S	150	120	8	25A	65W		20.....60	5	10A						27	2
SDT 8157	So	N	S	100	80	8	25A	65W		20.....60	5	10A						27	2
SDT 8159	So	N	S	40	25	5	25A	65W		20	5	10A						27	2
SDT 8301	So	N	S	80	60	8	30A	100W		40....120	5	10A				35		28	2
SDT 8302	So	N	S	100	80	8	30A	100W		40....120	5	10A				35		28	2
SDT 8303	So	N	S	80	60	8	30A	100W		100	5	10A				35		28	2
SDT 8304	So	N	S	100	80	8	30A	100W		100	5	10A				35		28	2
SDT 8651	So	N	S	200	200	8	60A	166W		10.....40	10	40A						71	2
SDT 8652	So	N	S	225	225	8	60A	166W		10.....40	10	40A						71	2
SDT 8653	So	N	S	250	250	8	60A	166W		10.....40	10	40A						71	2
SDT 8654	So	N	S	275	275	8	60A	166W		10.....40	10	40A						71	2
SDT 8655	So	N	S	300	300	8	60A	166W		10.....40	10	40A						71	2
SDT 8751	So	N	S	120	100	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8752	So	N	S	140	120	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8753	So	N	S	170	150	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8754	So	N	S	200	180	8	20A	100W		15.....60	5	10A				30		28	2
SDT 7655	So	N	S	120	100	8	20A	100W		30.....90	5	10A				30		28	2
SDT 8756	So	N	S	140	120	8	20A	100W		30.....90	5	10A				30		28	2
SDT 8757	So	N	S	170	150	8	20A	100W		30.....90	5	10A				30		28	2
SDT 8758	So	N	S	200	180	8	20A	100W		30.....90	5	10A				30		28	2
SDT 8801	So	N	S	200	200	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8802	So	N	S	225	225	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8803	So	N	S	250	250	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8804	So	N	S	275	275	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8805	So	N	S	300	300	8	20A	100W		15.....60	5	10A				30		28	2
SDT 8920	So	N	S	80	60	8	85A	125W		10	5	75A				15		72	2
SDT 8921	So	N	S	100	80	8	85A	125W		10	5	75A				15		72	2
SDT 8922	So	N	S	120	100	8	85A	125W		10	5	75A				15		72	2
SDT 8923	So	N	S	140	120	8	85A	125W		10	5	75A				15		72	2
SDT 8951	So	N	S	200	200	8	60A	125W		10.....40	10	40A				15		72	2

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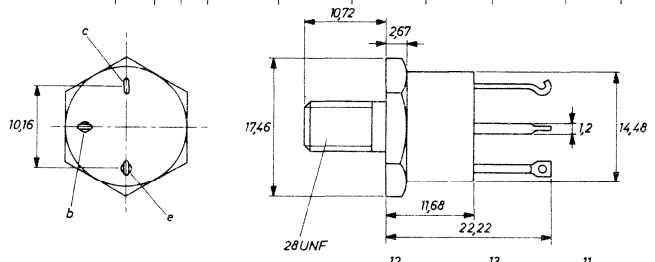

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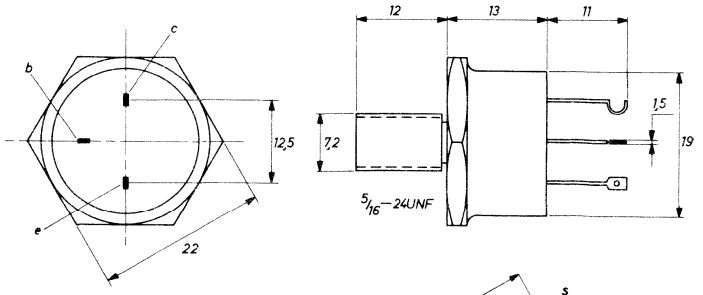

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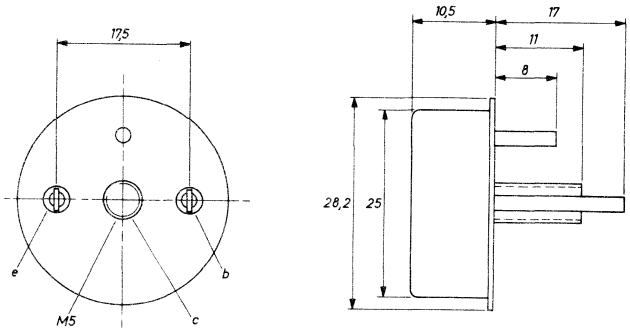

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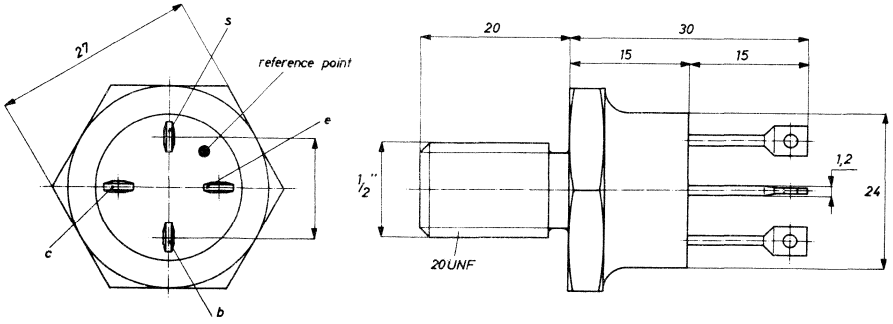
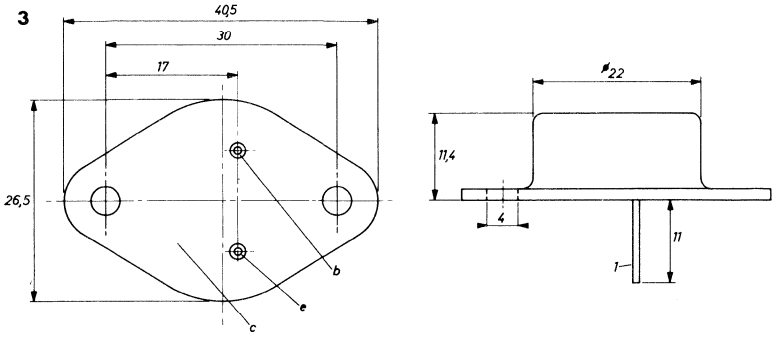


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SDT 8952	So	N	S	225	225	8	60A	125W		10.....40	10	40A				15		72	2
SDT 8953	So	N	S	250	250	8	60A	125W		10.....40	10	40A				15		72	2
SDT 8954	So	N	S	275	275	8	60A	125W		10.....40	10	40A				15		72	2
SDT 8955	So	N	S	300	300	8	60A	125W		10.....40	10	40A				15		72	2
SDT 9001	So	N	S	50	30	5	5A	4W		20	5	1A				70	140	4	1
SDT 9002	So	N	S	70	50	5	5A	4W		20	5	1A				70	140	4	1
SDT 9003	So	N	S	90	70	5	5A	4W		20	5	1A				70	140	4	1
SDT 9004	So	N	S	50	30	5	5A	4W		30.....90	5	1A				70	140	4	1
SDT 9005	So	N	S	70	50	5	5A	4W		30.....90	5	1A				70	140	4	1
SDT 9006	So	N	S	90	70	5	5A	4W		30.....90	5	1A				70	140	4	1
SDT 9007	So	N	S	50	30	5	5A	4W		50....150	5	1A				70	140	4	1
SDT 9008	So	N	S	70	50	5	5A	4W		50....150	5	1A				70	140	4	1
SDT 9009	So	N	S	90	70	5	5A	4W		50....150	5	1A				70	140	4	1
SDT 9010	So	N	S	50	30	5	5A	4W		100	5	1A				70	140	4	1
SDT 9011	So	N	S	70	50	5	5A	4W		100	5	1A				70	140	4	1
SDT 9012	So	N	S	90	70	5	5A	4W		100	5	1A				70	140	4	1
SDT 9201	So	N	S	55	45	12	15A	115W		20.....70	4	4A					45	3	2
SDT 9202	So	N	S	100	80	12	15A	115W		20.....70	4	4A					45	3	2
SDT 9203	So	N	S	120	100	12	15A	115W		20.....70	4	4A					45	3	2
SDT 9204	So	N	S	140	120	12	15A	115W		20.....70	4	4A					45	3	2
SDT 9205	So	N	S	55	45	12	15A	115W		15.....70	4	4A					45	3	2
SDT 9206	So	N	S	80	60	12	15A	115W		15.....70	4	4A					45	3	2
SDT 9207	So	N	S	100	80	12	15A	115W		15.....70	4	4A					45	3	2
SDT 9208	So	N	S	120	100	12	15A	115W		15.....70	4	4A					45	3	2
SDT 9209	So	N	S	140	120	12	15A	115W		15.....70	4	4A					45	3	2
SDT 9210	So	N	S	40	30	5	15A	115W		15	2	2A					45	3	2
SDT 9701	So	N	S	100	80	7	20A	150W		15.....60	5	8A					45	3	2
SDT 9702	So	N	S	120	100	7	20A	150W		15.....60	5	8A					45	3	2
SDT 9703	So	N	S	140	120	7	20A	150W		15.....60	5	8A					45	3	2
SDT 9704	So	N	S	100	80	7	20A	150W		20.....80	5	5A					45	3	2
SDT 9705	So	N	S	120	100	7	20A	150W		20.....80	5	5A					45	3	2
SDT 9706	So	N	S	140	120	7	20A	150W		20.....80	5	5A					45	3	2
SDT 9707	So	N	S	80	60	7	20A	150W		15	5	4A					45	3	2
SDT 9801	So	N	S	60	40	12	15A	83W		20.....60	5	5A					45	3	2
SDT 9802	So	N	S	80	60	12	15A	83W		20.....60	5	5A					45	3	2
SDT 9803	So	N	S	100	80	12	15A	83W		20.....60	5	5A					45	3	2
SDT 9804	So	N	S	120	100	12	15A	83W		20.....60	5	5A					45	3	2
SDT 9901	So	N	S	60	40	12	15A	65W		20.....60	5	5A						27	2
SDT 9902	So	N	S	80	60	12	15A	65W		20.....60	5	5A						27	2
SDT 9903	So	N	S	100	80	12	15A	65W		20.....60	5	5A						27	2

3



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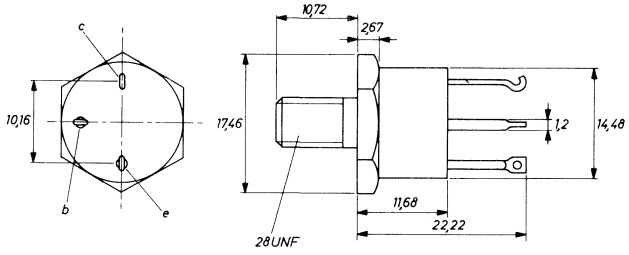

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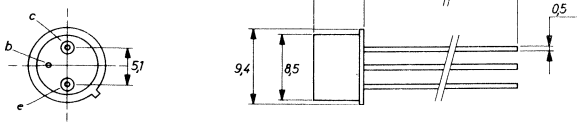

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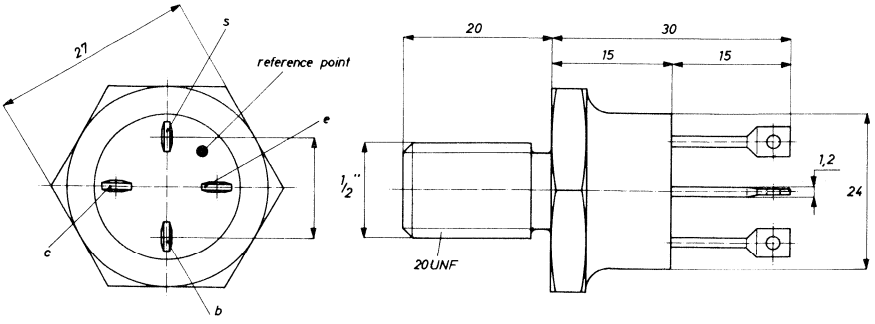
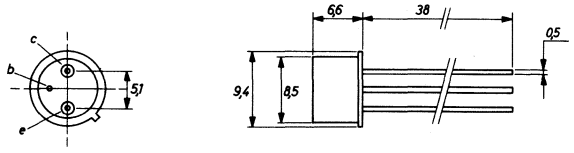


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
SDT 9904	So	N	S	120	100	12	15A	65W		20.....60	5	5A						27	2
SE 1001	Ns	N	S	45	45	4	50	200		40....160	10	10				200		67	3
SE 1002	Ns	N	S	45	45	4	50	200		100...400	10	10				200		67	3
SE 3001	Ns	N	S	30	12	2	20	200		20	10	8				600		67	3
SE 3002	Ns	N	S	30	12	2	20	200		20	10	8				600		67	3
SE 4001	Ns	N	S	30	25	6	25	200		60....300	10	1				40		67	1
SE 4002	Ns	N	S	30	25	6	25	200		200..1000	10	1				60		67	2
SE 4010	Ns	N	S	30	25	6	25	200		200..1000	10	1				60		67	1
SE 5020	Ns	N	S	20	20	3	50	350		20....200	5	4				800		30	3
SE 5021	Ns	N	S	20	20	3	50	350		20....200	5	4				800		30	3
SE 5022	Ns	N	S	20	20	3	50	350		20....200	5	4				800		30	3
SE 5023	Ns	N	S	20	20	3	50	350		20....200	5	4				800		30	3
SE 5024	Ns	N	S	20	20	3	50	350		20....200	5	4				800		30	3
SE 5035	Ns	N	S	40	30	4	50	350		40....180	10	5				600		30	3
SE 5037	Ns	N	S	46	40	4	50	200		40....180	10	10				600		30	3
SE 5050	Ns	N	S	20	20	3	50	200		20....200	5	4				300		30	3
SE 5051	Ns	N	S	20	20	3	50	200		20....200	5	4				300		30	3
SE 5052	Ns	N	S	20	20	3	50	200								375		30	3
SE 5055	Ns	N	S	20	20	3	50	200		20....200	10	2				300		30	3
SE 6001	Ns	N	S	40	30	5	500	300		50....200	10	10				40		68	5
SE 6002	Ns	N	S	40	30	5	500	300		150...600	10	10				40		68	3
SFT 187	Se	N	S	150			30	800		25		30				70		12	7
SFT 223	Se	P	S	30	15		100	225		60....160		100						12	1
SFT 227	Se	P	S	30			250	150		35.....55		10				4,5		12	1
SFT 228	Se	P	S	30			150	150		50.....80		10				5,5		12	1
SFT 229	Se	P	S	18			250	150		75....120		10				10		12	5
SFT 232	Se	P	S	30	30		3A	500		20		1A				225		12	1
SFT 233	Se	P	S		40		3A	500		20		1A				225		12	1
SFT 234	Se	P	S		50		3A	500		20		1A				700		12	1
SFT 234A	Se	P	S		60		3A	500		20		1A				700		12	1
SFT 243	Se	P	S	60			500	225		30....100		100						12	1
SFT 253	Se	P	S	30			150	225					60....160		1			12	1
SFT 288	Se	P	S	24			500	150		40....100		400				7		12	5
SFT 298	Se	N	S	30			500	150		35		350				8		12	5
SHA 7520	So	P	S	35	35	35	100	1W					5.....18	5	1	0,8		57	1
SHA 7521	So	P	S	60	60	60	100	1W					5.....18	5	1	0,8		57	1
SHA 7522	So	P	S	15	15	15	100	1W					14.....32	5	1	0,8		57	1
SHA 7523	So	P	S	35	35	35	100	1W					14.....32	5	1	0,8		57	1
SHA 7524	So	P	S	60	60	60	100	1W					14.....32	5	1	0,8		57	1
SHA 7525	So	P	S	110	110	110	100	1W					14.....32	5	1	0,8		57	1
SHA 7526	So	P	S	15	15	15	100	1W					28.....65	5	1	0,8		57	1
SHA 7527	So	P	S	35	35	35	100	1W					28.....65	5	1	0,8		57	1
SHA 7528	So	P	S	60	60	60	100	1W					28.....65	5	1	0,8		57	1
SHA 7529	So	P	S	90	90	90	100	1W					14.....32	5	1	0,8		57	1
SHA 7530	So	P	S	35	35	35	100	400					5.....18	5	1	0,8		4	1

4



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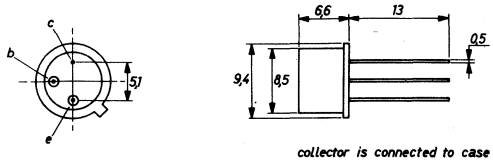

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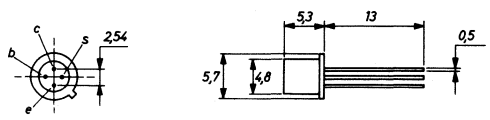

collector is connected to case

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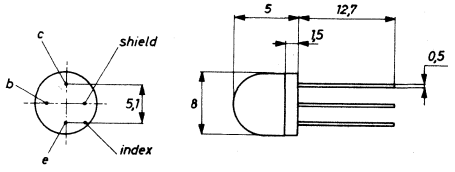

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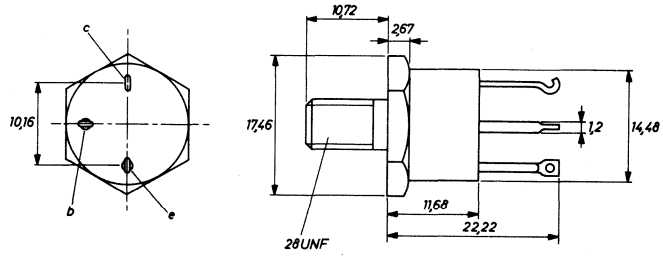

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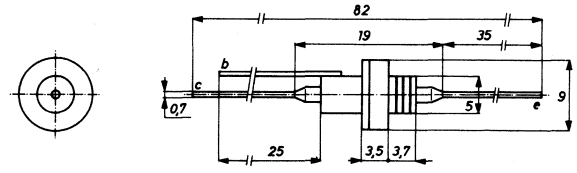

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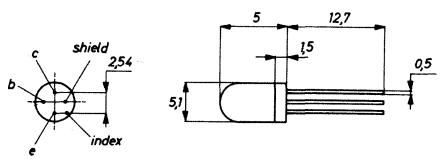

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
SHA 7531	So	P	S	60	60	60	100	385					5.....18	5	1	0,8		9	1
SHA 7532	So	P	S	15	15	15	100	400					14.....32	5	1	0,8		4	1
SHA 7533	So	P	S	35	35	35	100	400					14.....32	5	1	0,8		4	1
SHA 7534	So	P	S	60	60	60	100	385					14.....32	5	1	0,8		9	1
SHA 7535	So	P	S	110	110	110	100	385					14.....32	5	1	0,8		9	1
SHA 7536	So	P	S	15	15	15	100	400					28.....65	5	1	0,8		4	1
SHA 7537	So	P	S	35	35	35	100	400					28.....65	5	1	0,8		4	1
SHA 7538	So	P	S	60	60	60	100	385					28.....65	5	1	0,8		9	1
SHA 7539	So	P	S	90	90	90	100	385					14.....32	5	1	0,8		9	1
SHA 7597	So	P	S	50	40	20	100	1W		9.....22	0,5					0,8		57	1
SHA 7598	So	P	S	50	35	20	100	1W		18.....44	0,5					0,8		57	1
SHA 7599	So	P	S	50	30	20	100	1W		36.....88	0,5					0,8		57	1
SRF 1001	So	N	S	55	30	3,5		1,5W								600		4	3
SRF 1002	So	N	S	60	40	4		1W								400		4	3
SRF 11101	So	N	S	65	40	4		2,5W								350		4	3
SRF 12101	So	N	S	65	40	4		6W								400		26	3
SRF 12212	So	N	S	40	20	4		5W								600		26	3
SRF 12213	So	N	S	40	20	4		7,5W								600		26	4
SRF 13113	So	N	S	60	40	4		10W								350		58	4
SRF 13123	So	N	S	60	40	4		6,5W								400		58	4
SRF 13212	So	N	S	40	20	3		12W								300		58	4
SRF 13213	So	N	S	30	18	3		7W								400		58	4
SRF 21140	So	N	S	40	20	3		1,3W								1200		26	3
SRF 23121	So	N	S	60	35	4		1,1W								400		58	3
SRF 23211	So	N	S	35	20	4		1W								300		58	3
SRF 46123	So	N	S	60	28	3,5		10W								400		94	4
SRF 52101	So	N	S	65	40	4										350		26	4
SRF 52214	So	N	S	30	18	3		13W								100		26	4
SRF 53104	So	N	S	70	35	3,5		10W								300		58	4
SRF 53114	So	N	S	60	40	4		20W								350		58	4
SRF 53215	So	N	S	30	18	3		20W								360		58	4
SRF 54215	So	N	S	30	18	3		20W								360		94	4
SSS 1001	So	P	S	100	100	100		250										4	9
SSS 1002	So	P	S	120	120	120		250										4	9
SSS 1003	So	P	S	140	140	140		250										4	9
SSS 1004	So	P	S	160	160	160		250										4	9
ST 5025	Ns	N	S	30	30	3	20	600		20....200	10	10	4,5	10	10	700		60	3
ST 5030	Ns	N	S	45	40	4,5	20	600		45....150	15	7	10	15	7	600		60	3
ST 5056	Ns	N	S	20	20	3	10	600		20....220	10	2	5	10	2	300		60	2
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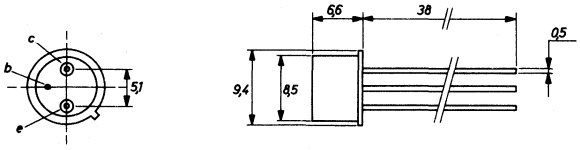

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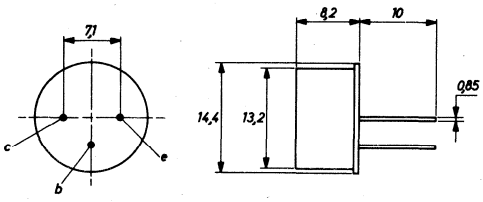

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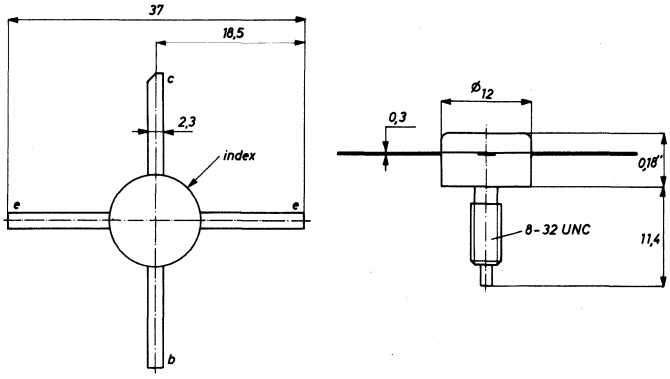

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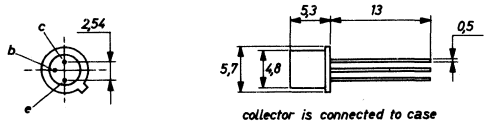

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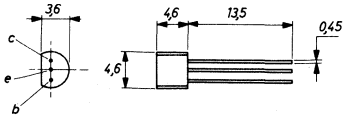

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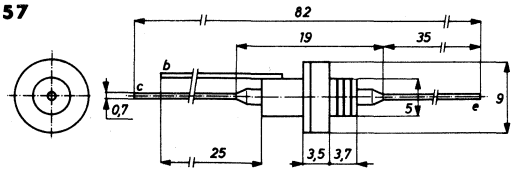

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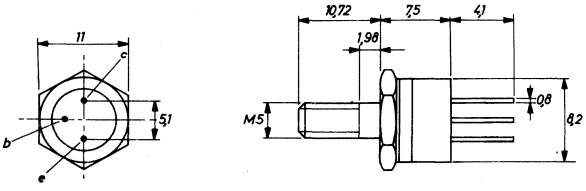

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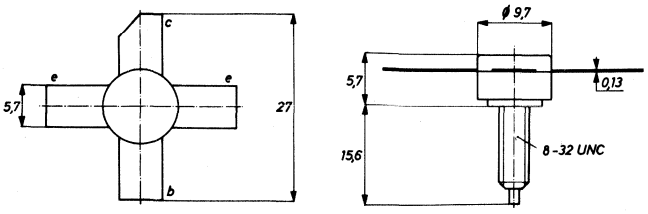
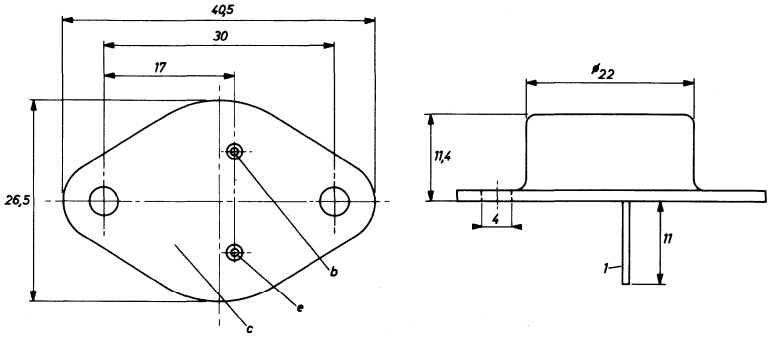


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
TF 78/30III	Si	P	G	32	24	10	600	3W	90	45.....67		50	45	5	5		120	6	2,5
TF 78/30IV	Si	P	G	32	24	10	600	3W	90	67....100		50	45	5	5		120	6	2,6
TF 78/30V	Si	P	G	32	24	10	600	3W	90	100...150		50	45	5	5		120	6	2,5
TF 78/60II	Si	P	G	64	45	16	600	3W	90	30.....45		50	45	5	5		120	6	2,5
TF 78/60III	Si	P	G	64	45	16	600	3W	90	45.....67		50	45	5	5		120	6	2,5
TF 78/60IV	Si	P	G	64	45	16	600	3W	90	67....100		50	45	5	5		120	6	2,5
TF 78/60V	Si	P	G	64	45	16	600	3W	90	100...150		50	45	5	5		120	6	2,5
TI 156	Tx	P	G	30	30	15	3A	25W	100	25.....75	2	500				0,22	75	45	7
TI 156L	Tx	P	G	30	30	15	3A	25W	100	25.....75	2	500				0,22	75	70	7
TI 159	Tx	P	G	40	40	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500		53,6	110	7
TI 160	Tx	P	G	60	60	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500		53,6	110	7
TI 161	Tx	P	G	80	80	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500		53,6	110	7
TI 162	Tx	P	G	100	100	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500		53,6	110	7
TI 486	Tx	N	S	80	60	6	1A	15W	200	20.....80	5	200	5	10	100	50	175	4	4
TI 487	Tx	N	S	80	60	6	1A	15W	200	20.....80	5	200	5	10	100	50	87,5	62	4
TI 1131	Tx	N	S	200	100	8	7A	80W	175	30....120	4	2A				7,5	50	27	4
TI 1132	Tx	N	S	200	100	8	7A	80W	175	15.....60	4	2A				7,5	50	27	4
TI 1133	Tx	N	S	150	75	8	7A	80W	175	30....120	4	2A				7,5	50	27	4
TI 1143	Tx	N	S	150	75	8	7A	80W	175	15.....60	4	2A				7,5	50	27	4
TI 1135	Tx	N	S	100	50	8	7A	80W	175	30....120	4	2A				7,5	50	27	4
TI 1136	Tx	N	S	100	50	8	7A	80W	175	15.....60	4	2A				7,5	50	27	4
TI 1151	Tx	N	S	200	100	8	7A	80W	175	20.....80	4	5A				7,5	50	27	4
TI 1152	Tx	N	S	200	100	8	7A	80W	175	10.....40	4	5A				7,5	50	27	4
TI 1153	Tx	N	S	150	75	8	7A	80W	175	20.....80	4	5A				7,5	50	27	4
TI 1154	Tx	N	S	150	75	8	7A	80W	175	10.....40	4	5A				7,5	50	27	4
TI 1155	Tx	N	S	100	50	8	7A	80W	175	20.....80	4	5A				7,5	50	27	4
TI 1156	Tx	N	S	100	50	8	7A	80W	175	10.....40	4	5A				7,5	50	27	4
TI 4027	Tx	P	G	45	40	20	7A	106W	100	40....250	2	3A	2	2	1A		42,5	3	2
TI 3028	Tx	P	G	60	50	20	7A	106W	100	40....250	2	3A	2	2	1A		42,5	3	2
TI 3029	Tx	P	G	80	55	20	7A	106W	100	40....250	2	3A	2	2	1A		42,5	3	2

3



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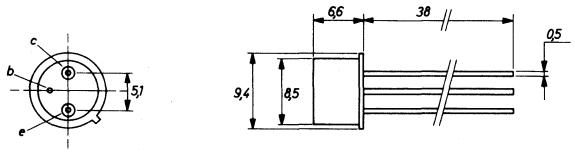

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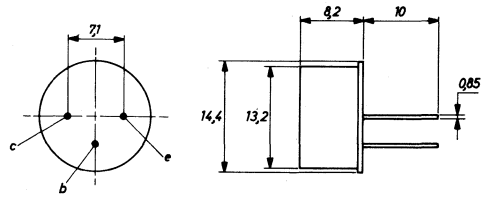

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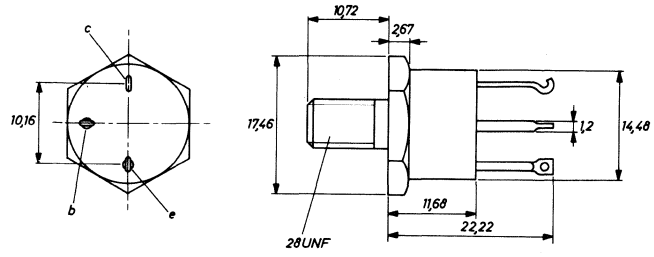

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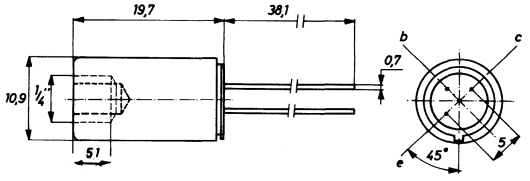

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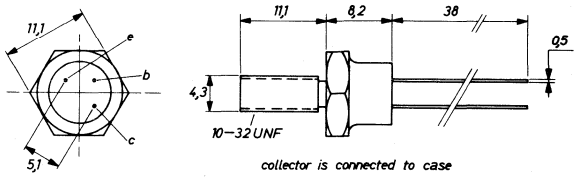

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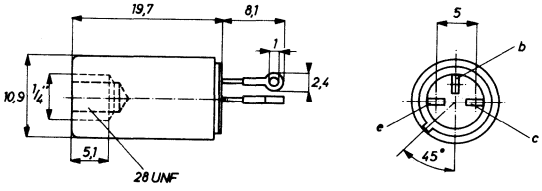

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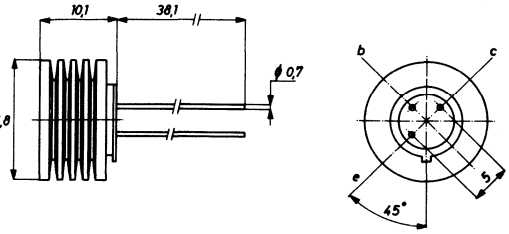

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
TI 3030	Tx	P	G	100	60	20	7A	106W	100	40....250	2	3A	2	2	1A		42,5	3	2
TI 3031	Tx	P	G	120	65	20	7A	106W	100	40....240	2	3A	2	2	1A		42,5	3	2
TIP 29	Tx	N	S	40	40	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 29A	Tx	N	S	60	60	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TUP 29B	Tx	N	S	80	80	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 29C	Tx	N	S	100	100	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 30	Tx	P	S	40	40	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 30A	Tx	P	S	60	60	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 30B	Tx	P	S	80	80	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 30C	Tx	P	S	100	100	5	1A	30W	150	40....200	4	200	20	10	200	3	62,5	49	2
TIP 31	Tx	N	S	40	40	5	3A	40W	150	20....100	4	1A	20	10	500	3	62,5	49	2
TIP 31A	Tx	N	S	60	60	5	3A	40W	150	20....100	4	1A	20	10	500	3	62,5	49	2
TIP 31B	Tx	N	S	80	80	5	3A	40W	150	25....100	4	1A	20	10	500	3	62,5	49	2
TIP 31C	Tx	N	S	100	100	5	3A	40W	150	25....100	4	1A	20	10	500	3	62,5	49	2
TIP 32	Tx	P	S	40	40	5	3A	40W	150	20....100	4	1A	20	10	500	3	62,5	49	2
TIP 32A	Tx	P	S	60	60	5	3A	40W	150	20....100	4	1A	20	10	500	3	62,5	49	2
TIP 32B	Tx	P	S	80	80	5	3A	40W	150	25....100	4	1A	20	10	500	3	62,5	49	2
TIP 32C	Tx	P	S	100	100	5	3A	40W	150	25....100	4	1A	20	10	500	3	62,5	49	2
TIP 33	Tx	N	S	40	40	5	10A	80W	150	25....125	4	1A	20	10	500	3	35,7	48	2
TIP 33A	Tx	N	S	60	60	5	10A	80W	150	25....125	4	1A	20	10	500	3	35,7	48	2
TIP 33B	Tx	N	S	80	80	5	10A	80W	150	40....125	4	1A	20	10	500	3	35,7	48	2
TIP 33C	Tx	N	S	100	100	5	10A	80W	150	40....125	4	1A	20	10	500	3	35,7	48	2
TIP 34	Tx	P	S	40	40	5	10A	80W	150	25....125	4	1A	20	10	500	3	35,7	48	2
TIP 34A	Tx	P	S	60	60	5	10A	80W	150	25....125	4	1A	20	10	500	3	35,7	48	2
TIP 34B	Tx	P	S	80	80	5	10A	80W	150	40 ...125	4	1A	20	10	500	3	35,7	48	2
TIP 34C	Tx	P	S	100	100	5	10A	80W	150	40....124	4	1A	20	10	500	3	35,7	48	2
TIP 35	Tx	N	S	40	40	5	25A	90W	150	20....100	4	5A	25	10	1A	3	35,7	48	2
TIP 35A	Tx	N	S	60	60	5	25A	90W	150	20....100	4	5A	25	10	1A	3	35,7	48	2
TIP 35B	Tx	N	S	80	80	5	25A	90W	150	25....100	4	1,5A	25	10	1A	3	35,7	48	2
TIP 35C	Tx	N	S	100	100	5	25A	90W	150	25....100	4	1,5A	25	10	1A	3	35,7	48	2
TIP 36	Tx	N	S	40	40	5	25A	90W	150	20....100	4	5A	25	10	1A	3	35,7	48	2
TIP 36A	Tx	N	S	60	60	5	25A	90W	150	20....100	4	5A	25	10	1A	3	35,7	48	2
TIP 36B	Tx	N	S	80	80	5	25A	90W	150	25....100	4	1,5A	25	10	1A	3	35,7	48	2
TIP 36C	Tx	N	S	100	100	5	25A	90W	150	25....100	4	1,5A	25	10	1A	4	35,7	48	2
TIP 41	Tx	N	S	40	40	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 41A	Tx	N	S	60	60	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 41B	Tx	N	S	80	80	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 41C	Tx	N	S	100	100	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 42	Tx	P	S	40	40	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 42A	Tx	P	S	60	60	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 42B	Tx	P	S	80	80	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 42C	Tx	P	S	100	100	5	6A	65W	150	15.....75	4	3A	20	10	500	3	62,5	49	2,5
TIP 47	Tx	N	S	350	250	5	1A	40W	150	30....150	10	300	25	10	200	10		49	2
TIP 48	Tx	N	S	400	300	5	1A	40W	150	30....150	10	300	25	10	200	10		49	2
TIP 49	Tx	N	S	450	350	5	1A	40W	150	30....150	10	300	25	10	200	10		49	2
TIP 50	Tx	N	S	500	400	5	1A	40W	150	30....150	10	300	25	10	200	10		49	2
TIP 51	Tx	N	S	350	250	5	3A	100W	150	30....150	10	300	30	10	200	2,5	35,7	48	2
TIP 52	Tx	N	S	400	300	5	3A	100W	150	30....150	10	300	30	10	200	2,5	35,7	48	2
TIP 53	Tx	N	S	450	350	5	3A	100W	150	30....150	10	300	30	10	200	2,5	35,7	48	2
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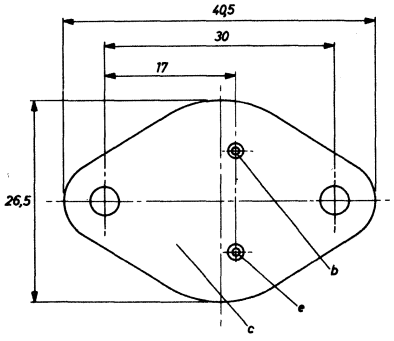

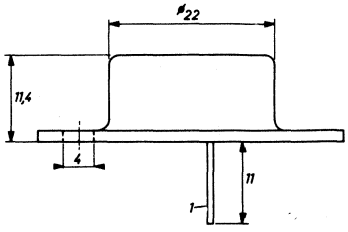

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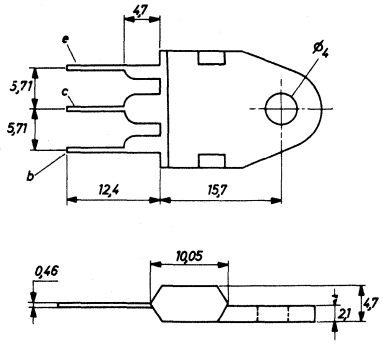

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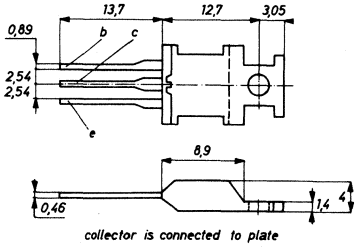

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
TIP 501	Tx	N	S	40	40	4	3A	6W	200	25....180	1,5	1A				60	175	12	2,5
TIP 502	Tx	N	S	60	60	4	3A	6W	200	25....180	1,5	1A				60	175	12	2,5
TIP 503	Tx	N	S	130	120	6	2A	20W	200	40....200	4	1A	40	5	250	70	87,5	40	2,5
TIP 504	Tx	N	S	160	150	6	2A	20W	200	40....200	4	1A	40	5	250	70	87,5	40	2,5
TIP 505	Tx	N	S	130	120	6	2A	20W	200	40....200	4	1A	40	5	250	70	87,5	66	2,5
TIP 506	Tx	N	S	160	150	6	2A	20W	200	40....200	4	1A	40	5	250	70	87,5	66	2,5
TIP 507	Tx	P	S	150	150	5	2A	20W	200	30....120	4	1A	30	5	200	50	87,5	66	2,5
TIP 508	Tx	P	S	150	150	5	2A	4W	200	30....120	4	1A	30	5	200	50	175	12	2,5
TIP 509	Tx	N	S	130	120	6	4A	30W	200	40....200	4	2A	40	5	500	70	44	3	2,5
TIP 510	Tx	N	S	160	150	6	4A	30W	200	40....200	4	2A	40	5	500	70	44	3	2,5
TIP 511	Tx	N	S	130	120	6	4A	30W	200	40....200	4	2A	40	5	500	70	44	27	2,5
TIP 512	Tx	N	S	160	150	6	4A	30W	200	40....200	4	2A	40	5	500	70	44	27	2,5
TIP 513	Tx	P	S	150	150	5	5A	30W	200	30....150	4	2,5A	30	5	500	40	87	66	2,5
TIP 514	Tx	P	S	150	150	5	5A	20W	200	30....150	4	2,5A	30	5	500	40	87	40	2,5
TIP 515	Tx	N	S	130	120	6	12A	80W	200	40....200	4	6A	40	5	1A	70	43,7	3	2,5
TIP 516	Tx	N	S	160	150	6	12A	80W	200	40....200	4	6A	40	5	1A	70	43,7	3	2,5
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TIP 518	Tx	N	S	160	150	6	12A	80W	200	40....200	4	6A	40	5	1A	70	50	27	2,5
TIP 519	Tx	P	S	150	150	5	8A	50W	200	30....150	4	4A	30	5	1A	40	43,8	3	2,5
TIP 520	Tx	P	S	150	150	5	8A	50W	200	30....150	4	4A	30	5	1A	40	50	27	2,5
TIP 521	Tx	P	S	200	200	5	2A	20W	200	20....100	4	1A	20	5	200	50	87,5	66	2,5
TIP 522	Tx	P	S	200	200	5	2A	4W	200	20....100	4	1A	20	5	200	50	175	12	2,5
TIP 523	Tx	P	S	200	200	5	5A	30W	200	20....100	4	2,5A	20	5	500	40	87,5	66	2,5
TIP 524	Tx	P	S	200	200	5	5A	20W	200	20....100	4	2,5A	20	5	500	40	175	12	2,5
TIP 525	Tx	N	S	250	200	6	5A	60W	200	30....150	4	2,5A	30	5	500	40	43,8	3	2,5
TIP 526	Tx	N	S	250	200	6	5A	60W	200	30....150	4	2,5A	30	5	500	40	50	27	2,5
TIP 527	Tx	P	S	200	200	5	8A	60W	200	20....100	4	4A	20	5	1A	40	43,8	3	2,5
TIP 528	Tx	P	S	200	200	5	8A	60W	200	20....100	4	4A	20	5	1A	40	50	27	2,5
TIP 529	Tx	N	S	400	300	6	3A	67W	200	25....125	4	1,5A	25	5	500	20	44	27	2,5
TIP 530	Tx	N	S	400	300	6	3A	20W	200	25....125	4	1,5A	25	5	500	20	87,5	40	2,5
TIP 531	Tx	N	S	340	300	6	15A	150W	175	20....120	4	7,5A	20	10	1A	50	37,5	3	2,5
TIP 532	Tx	N	S	450	400	6	15A	150W	175	20....120	4	7,5A	20	10	1A	50	37,5	3	2,5
TIP 533	Tx	N	S	340	300	6	15A	150W	175	20....120	4	7,5A	20	10	1A	50	37,5	28	2,5
TIP 534	Tx	N	S	450	400	6	15A	150W	175	20....120	4	7,5A	20	10	1A	50	37,5	28	2,5
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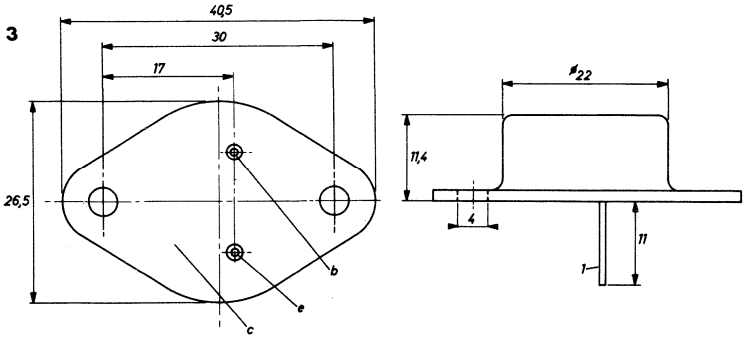

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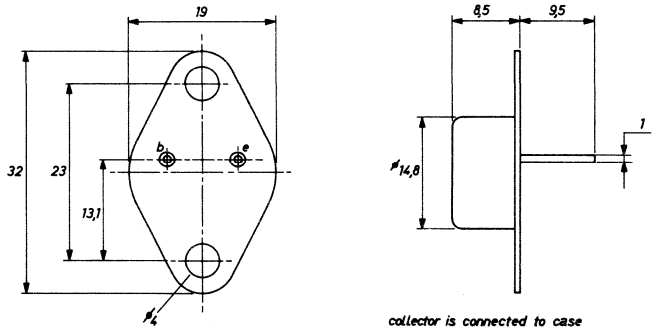

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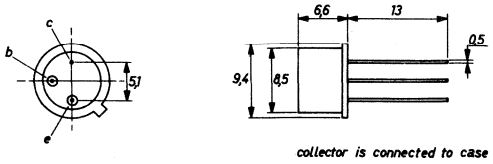

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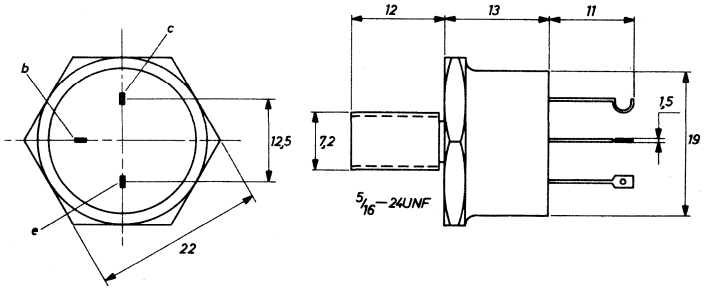

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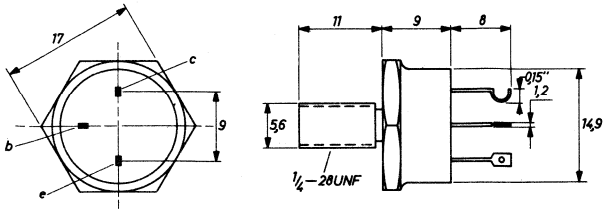

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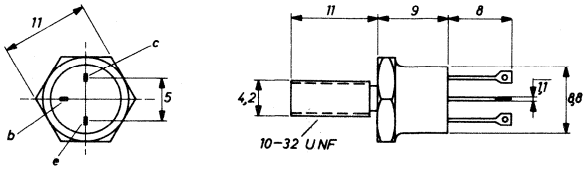

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
TIP 536	Tx	N	S	400	300	5	7A	100W	200	20....100	4	5A	20	10	1A	10	35	3	2,5
TIP 536	Tx	N	S	400	300	5	7A	100W	200	20....100	4	5A	20	10	1A	10	35	3	2,5
TIP 537	Tx	N	S	500	400	5	7A	100W	200	20....100	4	5A	20	10	1A	10	35	3	2,5
TIP 538	Tx	N	S	300	200	5	15A	125W	200	20....100	4	7,5A	20	10	1A	10	35	3	2,5
TIP 539	Tx	N	S	400	300	5	15A	125W	200	20....100	4	7,5A	20	10	1A	10	35	3	2,5
TIP 540	Tx	N	S	500	400	5	15A	125W	200	20....100	4	7,5A	20	10	1A	10	35	3	2,5
TIP 541	Tx	N	S	50	45	5	2A	4W	200	40....200	4	1A	40	5	500	150	175	12	2,5
TIP 542	Tx	N	S	50	45	5	10A	40W	200	40....200	4	5A	35	5	1A	150	87,5	66	2,5
TIP 543	Tx	N	S	75	65	6	10A	40W	200	40....200	4	5A	40	5	1A	120	87,5	66	2,5
TIP 544	Tx	P	S	100	100	7	6A	150W	200	25....100	2	3A	15	10	2A	1		3	2,5
TIP 545	Tx	P	S	120	120	7	6A	150W	200	20.....80	2	3A	15	10	2A	1		3	2,5
TIP 546	Tx	P	S	140	140	7	6A	150W	200	15.....60	2	3A	15	10	2A	1		3	2,5
TIP 2955	Tx	P	S	100	70	7	15A	90W	150	20.....70	4	4A	15	4	1A		35,7	48	2,5
TIP 3055	Tx	N	S	100	70	7	15A	90W	150	20.....70	4	4A	15	4	1A		35,7	3	2
TIP 5530	Tx	P	S	100	70	7	15A	90W	150	20.....70	4	4A	15	4	1A		35,7	3	2
TIS 39	Tx	N	S	30	20		200	4W		20....200		50				1800		4	3
TIS 56	Tx	N	S	30	20		30	200		20		4				500		30	6
TIS 57	Tx	N	S	30	20		30	200		20		4				500		30	6
TIS 60	Tx	N	S	40	25	5	400	300	150	100...300	2	50						34	1
TIS 61	Tx	P	S	40	25	5	400	300	150	155	2	50						34	1
TIXP 39	Tx	N	S	80	80	5	10A	40W	200	40....200	4	5A	30	5	1A		87,5	66	2,5
TIXP 40	Tx	N	S	70	70	5	10A	40W	200	40....200	4	5A	30	5	1A		87,5	66	2,5
TIXP 547	Tx	N	S	80	60	5	100A	200W	200	15....100	4	50A	15	5	5A	3	20,6	111	2,5
TIXP 548	Tx	N	S	100	80	5	100A	200W	200	15....100	4	50A	15	5	5A	3	20,6	111	2,5
TIXP 549	Tx	N	S	120	100	5	100A	200W	200	15....100	4	50A	15	5	5A	3	20,6	111	2,5

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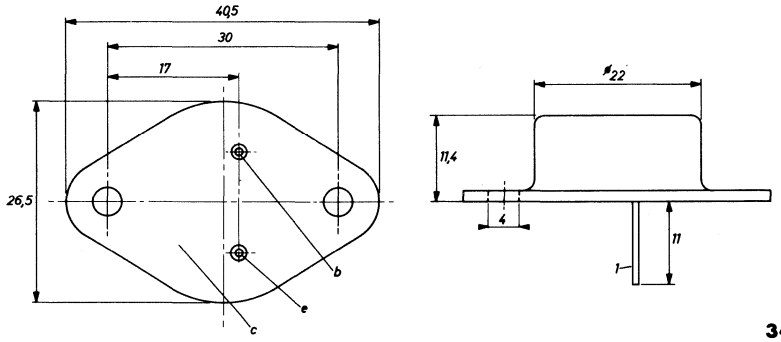

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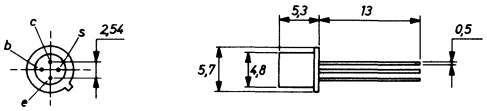

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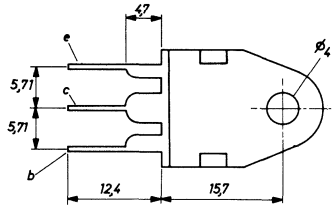

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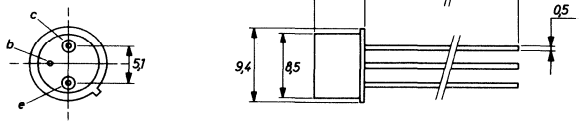

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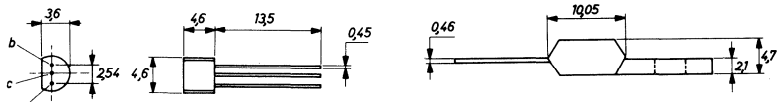
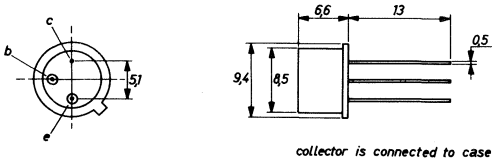


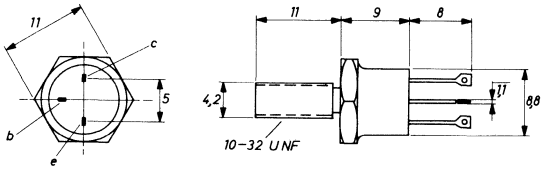
collector is connected to plate

12



collector is connected to case

66



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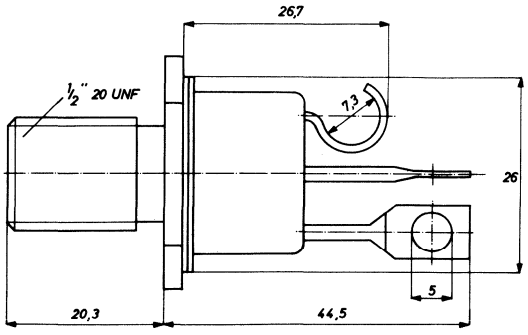

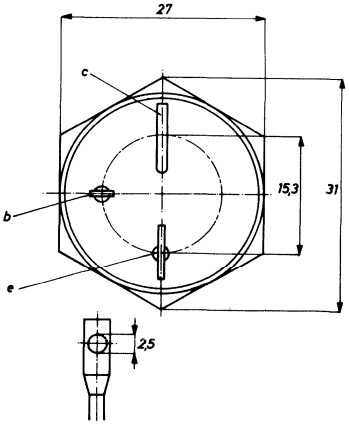

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
WT 400	Wb	N	S	100	80	12	4A	25W	200	25....100	4	500	20	10	500	0,8	40	40	2
WT 401	Wb	N	S	100	80	12	4A	25W	200	80....200	4	500	20	10	500	0,8	40	40	2
WT 402	Wb	N	S	90	80	12	5A	80W	150	15.....30	4	1A				0,5	35	3	2
WT 403	Wb	N	S	100	80	12	15A	125W	150	20.....70	4	4A	15	4	1A	0,8	35	3	2
WT 411	Wb	N	S	160	120	7	16A	150W	150	15.....60	4	8A	35	4	1A	0,8		96	5
WT 411A	Wb	N	S	160	120	7	16A	150W	150	15.....60	4	8A	35	4	1A	0,8		105	5
ZT 20	Fe	N	S	20	20	6	50	350		18.....42	6	10				70		4	1,5
ZT 21	Fe	N	S	20	20	6	50	350		38.....82	6	10				70		4	1,5
ZT 22	Ge	N	S	45	45	6	50	350		18.....42	6	10				70		4	1,5
ZT 23	Fe	N	S	45	45	6	50	350		38.....82	6	10				70		4	1,5
ZT 24	Fe	N	S	45	45	6	50	350		78....160	6	10				70		4	1,5
ZT 40	Fe	N	S	20	20	6	50	300		18.....42	6	10				70		9	1,5
ZT 41	Fe	N	S	20	20	6	50	300		38.....82	6	10				70		9	1,5
ZT 42	Fe	N	S	45	45	6	50	300		18.....42	6	10				70		9	1,5
ZT 43	Fe	N	S	45	45	6	50	300		38.....82	6	10				70		9	1,5
ZT 44	Fe	N	S	45	45	6	50	300		78....160	6	10				70		9	1,5
ZT 80	Fe	N	S	25	25	4	500	300		38....162	6	10				150		9	1,5
ZT 81	Fe	N	S	45	35	4	500	300		38....162	6	10				150		9	1,5
ZT 82	Fe	N	S	45	35	4	500	300		75....250	6	10				150		9	1,5
ZT 83	Fe	N	S	60	45	5	500	300		38.....85	6	10				150		9	1,5
ZT 84	Fe	N	S	60	45	5	500	300		75....170	6	10				150		9	1,5
ZT 86	Fe	N	S	100	80	5	500	300		38.....85	6	10				150		9	1,5
ZT 87	Fe	N	S	25	25	4	500	300		75....250	6	10				150		9	1,5
ZT 88	Fe	N	S	100	80	5	500	300		75....170	6	10				150		9	1,5
ZT 89	Fe	N	S	70	70	5	500	300		75....250	6	10				150		9	1,5

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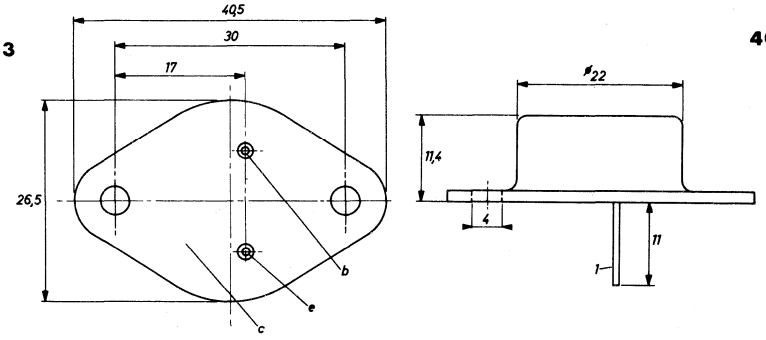

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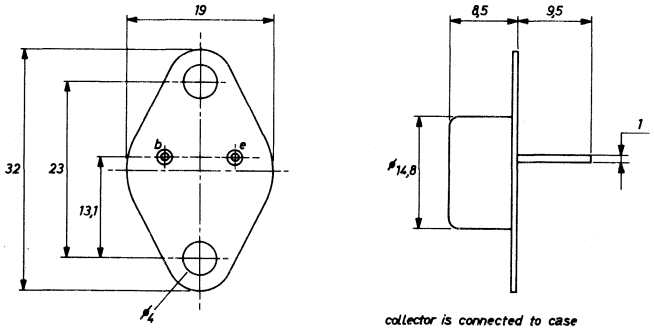

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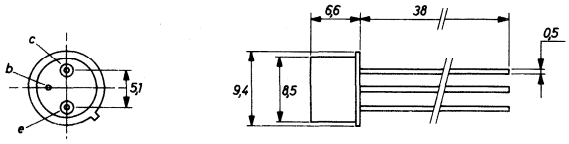

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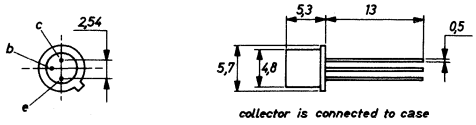

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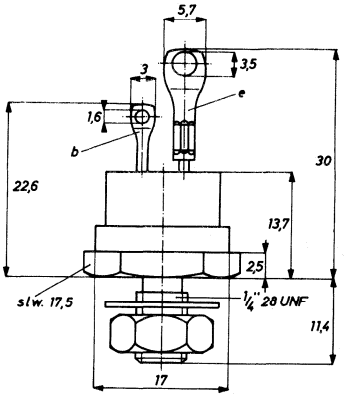

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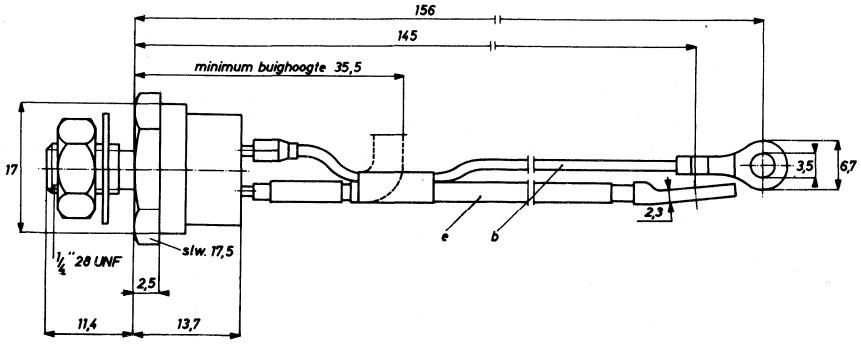

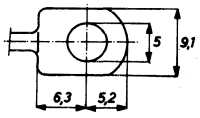

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
ZT 90	Fe	N	S	60	60	6	1A	1W		60....200		200				60		4	1,5
ZT 91	Fe	N	S	120	100	6	1A	1W		40....120		200				60		4	1,5
ZT 92	Fe	N	S	120	100	6	1A	1W		65....200		200				60		4	1,5
ZT 93	Fe	N	S	120	80	6	1A	1W		40....120		150				60		4	1,5
ZT 94	Fe	N	S	60	45	6	1A	1W		30		200				60		4	1,5
ZT 95	Fe	N	S	60	60	6	1A	1W		30....200		350				60		4	1,5
ZT 110	Fe	N	S	25	25	4	500	300		38....162	6	10				150		17	1,5
ZT 111	Fe	N	S	45	35	4	500	300		38....162	6	10				150		17	1,5
ZT 112	Fe	N	S	45	35	4	500	300		75....250	6	10				150		17	1,5
ZT 113	Fe	N	S	60	45	5	500	300		38.....85	6	10				150		17	1,5
ZT 114	Fe	N	S	60	45	5	500	300		75....170	6	10				150		17	1,5
ZT 116	Fe	N	S	100	80	5	500	300		38.....85	6	10				150		17	1,5
ZT 117	Fe	N	S	25	25	4	500	300		75....250	6	10				150		17	1,5
ZT 118	Fe	N	S	100	80	5	500	300		75....170	6	10				150		17	1,5
ZT 119	Fe	N	S	70	70	5	500	300		75....250	6	10				150		17	1,5
ZT 180	Fe	P	S	25	25	4		300		38....162	6	10				150		9	1,5
ZT 181	Fe	P	S	45	35	4		300		38....162	6	10				150		9	1,5
ZT 182	Fe	P	S	45	35	4		300		75....250	6	10				150		9	1,5
ZT 183	Fe	P	S	45	45	4		300		38.....85	6	10				150		9	1,5
ZT 184	Fe	P	S	45	45	4		300		75....170	6	10				150		9	1,5
ZT 187	Fe	P	S	25	25	4		300		75....250	6	10				150		9	1,5
ZT 189	Fe	P	S	70	70	4		300		75....250	6	10				150		9	1,5
ZT 210	Fe	P	S	60	40	7		1W		20....100	10	150				60		4	1,5
ZT 211	Fe	P	S	90	65	7		1W		40....120	10	150				60		4	1,5
ZT 280	Fe	P	S	25	25	4		300		38....162	6	10				150		17	1,5
ZT 281	Fe	P	S	45	35	4		300		38....162	6	10				150		17	1,5
ZT 282	Fe	P	S	45	35	4		300		75....250	6	10				150		17	1,5
ZT 283	Fe	P	S	45	45	4		300		38.....85	6	10				150		17	1,5
ZT 284	Fe	P	S	45	45	4		300		75....170	6	10				150		17	1,5
ZT 287	Fe	P	S	25	25	4		300		75....250	6	10				150		17	1,5
ZT 600	Fe	N	S	24	20	5		800		50....150		150				250		4	1,5
ZT 1479	Fe	N	S	60	40		1,5A	5W		20.....60	4	200						4	2
ZT 1480	Fe	N	S	100	55		1,5A	5W		20.....60	4	200						4	2
ZT 1481	Fe	N	S	60	40		1,5A	5W		35....100	4	200						4	2
ZT 1482	Fe	N	S	100	55		1,5A	5W		35....100	4	200						4	2
ZT 1483	Fe	N	S	60	40		3A	25W		20.....60	4	750						6	2
ZT 1484	Fe	N	S	100	55		3A	25W		20....60	4	750						6	2
ZT 1485	Fe	N	S	60	40		3A	25W		35....100	4	750						6	2
ZT 1486	Fe	N	S	100	55		3A	25W		35....100	4	750						6	2
ZT 1487	Fe	N	S	60	40		6A	75W		15.....45	4	1,5A						3	2
ZT 1489	Fe	N	S	60	40		6A	75W		25.....75	4	1,5A						3	2
ZT 1490	Fe	N	S	100	55		6A	75W		25.....75	4	1,5A						3	2
ZT 1700	Fe	N	S	60	40		1A	5W		20.....80	4	100						4	2
ZT 1701	Fe	N	S	60	40		2,5A	25W		20.....80	4	300						6	2
ZT 1702	Fe	N	S	60	40		5A	75W		15.....60	4	800						3	2
ZTX 107	Fe	N	S	60	50	5	100	300		125...500	5	2				350		85	3
ZTX 107A	Fe	N	S	60	50	5	100	300		125...260	5	2				350		85	3
ZTX 107B	Fe	N	S	60	50	5	100	300		240...500	5	2				350		85	3
ZTX 108	Fe	N	S	45	30	5	100	300	1	125...500	5	2				350		85	1
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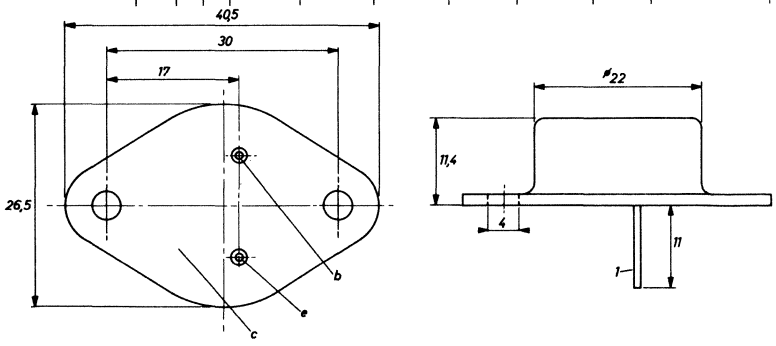

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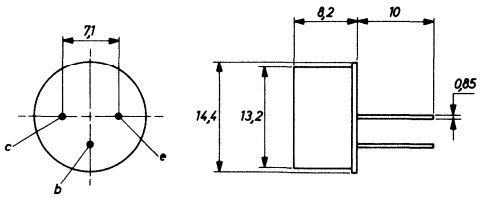

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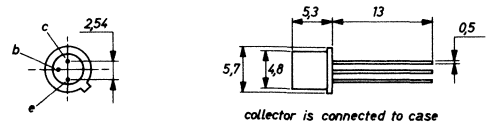

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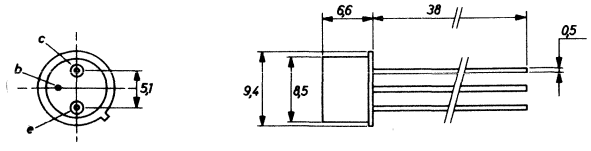

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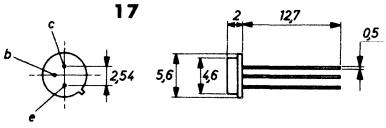

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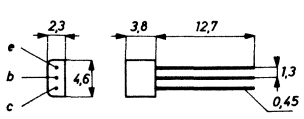

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
ZTX 108B	Fe	N	S	45	30	5	100	300		240...500	5	2				350		85	3
ZTX 108C	Fe	N	S	45	30	5	100	300		450...900	5	2				350		85	3
ZTX 109	Fe	N	S	45	30	5	100	300		240...900	5	2				350		85	3
ZTX 109B	Fe	N	S	45	30	5	100	300		240...500	5	2				350		85	3
ZTX 109C	Fe	N	S	45	30	5	100	300		450...900	5	2				350		85	3
ZTX 114	Fe	N	S	30	26	6		300		200	5	2				350		85	3
ZTX 300	Fe	N	S	25	25	5	500	300		50....300	6	10				150		85	3
ZTX 301	Fe	N	S	35	35	5	500	300		50....300	6	10				150		85	3
ZTX 302	Fe	N	S	35	35	5	500	300		100...300	6	10				150		85	3
ZTX 303	Fe	N	S	45	45	5	500	300		50....300	6	10				150		85	3
ZTX 304	Fe	N	S	70	70	5	500	300		50....300	6	10				150		85	3
ZTX 310	Fe	N	S	25	20	3		300		20		10				200		91	5
ZTX 311	Fe	N	S	20	15	5		300		50....200		10				200		91	5
ZTX 312	Fe	N	S	30	12	5		300		40		10				400		91	5
ZTX 313	Fe	N	S	40	15	5		300		40....120		10				600		91	5
ZTX 314	Fe	N	S	40	15	5		300		40....120		10				500		91	5
ZTX 320	Fe	N	S	30	15	3		250		20	1	3				600		91	3
ZTX 321	Fe	N	S	30	15	3		250		20	1	3				600		85	3
ZTX 325	Fe	N	S	30	15	1,5		200		25....150						1000		85	3
ZTX 326	Fe	N	S	25	12	2,5		200		25....150						1000		85	3
ZTX 327	Fe	N	S	55	30	3,5		500								800		85	3
ZTX 330	Fe	N	S	30	30	5	500	300		100...400	6	0,1				30		85	3,5
ZTX 331	Fe	N	S	45	45	5	500	300		40....120	6	0,01				30		85	3,5
ZTX 341	Fe	N	S	100	100	5	100	300		30	6	2						91	5
ZTX 342	Fe	N	S	120	120	5	100	300		30	6	2						91	5
ZTX 360	Fe	N	S	60	40	5		500		25....150		500				250		85	5
ZTX 382	Fe	N	S	50	45	6	100	450		100...480	5	0,01				150		85	5
ZTX 383	Fe	N	S	45	30	6	100	450		100...850	5	0,01				150		85	5
ZTX 384	Fe	N	S	45	30	6	100	450		100	5	0,01				150		85	5
ZTX 500	Fe	P	S	25	25	5	500	300		50....300	6	10				150		85	3
ZTX 501	Fe	P	S	35	35	5	500	300		50....300	6	10				150		85	3
ZTX 502	Fe	P	S	35	35	5	500	300		100...300	6	10				150		85	3
ZTX 503	Fe	P	S	45	45	5	500	300		50....300	6	10				150		85	3
ZTX 504	Fe	P	S	70	70	5	500	300		50....300	6	10				150		85	3
ZTX 510	Fe	P	S	12	12	4		300		40....150	6	30				400		91	5
ZTX 530	Fe	P	S	30	30	5	500	300		100...400	6	0,1				30		85	3,5
ZTX 531	Fe	P	S	45	45	5	500	300		40....120	6	0,01				30		85	3,5
2N 21	We	P	G	100				120	85										5
2N 22	We	P	G	100	100			145	55										5
2N 23	We	P	G	40	50			105	55										5
2N 24	We	P	G	30	30			145	50										1
2N 25	We	P	G	50	50			200	60										3
2N 27	We	N		35				50	85										1
2N 28	We	N		30				50	85										1
2N 29	We	N		35				50	85										1
2N 30	Ge	P	G	35				100	40										1
2N 31	Ge	P	G	35				100	40										1
2N 32	Rc	P	G	40				50											5
2N 33	Rc	P	G	8,5				30											3
2N 34	Rc	P	G	25				50											1
2N 35	Rc	P	G	25				50											1
2N 36	Tr	P	G	20				50	50										1
2N 37	Tr	P	G					50	20				30						1
2N 38	Tr	P	G					50					15						1
2N 38A		P	G	20				50	20										1
2N 41		P	G	25				50											1

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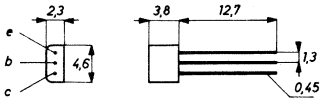

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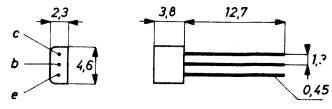

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 43	Ge	P	G	45	30			240	85	34		20	30						1
2N 43A	Ge	P	G	45	30			240	85	34.....65		20	30						1
2N 44	Ge	P	G	45	30			240	85	18.....43		20							1
2N 45	Tr	P	G	45	30			240	85	18		20							1
2N 46	Rc	P	G	25				50											1
2N 47		P	G	35				50											1
2N 48		P	G	35				50											1
2N 49		P	G	35				50											1
2N 50			G	15				50	50										5
2N 51			G	50				100	50										5
2N 52			G	50				120	50										5
2N 53			G	50				100	50										5
2N 54	Wh	P	G	45				200	60										1
2N 55	Wh	P	G	45				200	60										1
2N 56	Wh	P	G	45				200	60										1
2N 57		P	G	60				20W											2
2N 59	Wh	P	G	25	25			180	85										1
2N 59A	Wh	P	G	40	40			180	85										1
2N 59B	Wh	P	G	50	50			180	85										1
2N 59C	Wh	P	G	60	60			180	85										1
2N 60	Wh	P	G	25	25			180	85										1
2N 60A	Wh	P	G	40	40			180	85										1
2N 60B	Wh	P	G	50	50			180	85										1
2N 60C	Wh	P	G	60	60			180	85										1
2N 61	Wh	P	G	25	25			180	85										1
2N 61A	Wh	P	G	40	40			180	85										1
2N 61B	Wh	P	G	50	50			180	85										1
2N 61C	Wh	P	G	60	60			180	85										1
2N 62		P	G	35				50											1
2N 63	Tr	P	G	44	44			102	85										1
2N 64	Tr	P	G	30	30			102	85										1
2N 65	Tr	P	G	24	24				85										1
2N 66	We	P		60	40			27W	80										2
2N 67	We	P		50				100	85										5
2N 68	Sy	P	G	25				2W	70										2
2N 71	Wh	P		75	50			1W	60										2
2N 72	Rc	P	G	40				50											5
2N 73	Wh	P			50			200											5,9
2N 74	Wh	P			50			200											5
2N 75	Wh	P			20			200											5
2N 76	Ge	P	G	20				5	60										1
2N 77	Rc	P	G	25				35											1
2N 78	Ge	N	G	15	15			65	85	45....135		1							3
2N 79	Rc	P	G	35				35											1
2N 80		P	G	25				50											1
2N 81		P	G		20			50	100				20						1
2N 82		P	G	20				35	71	20.....60		1							1
2N 94	Sy	N	G	20	20			150	85	20.....80		1							3
2N 94A	Sy	N	G	20	20			150	85	20.....80		1							3
2N 95	Sy	N		25				2W	70										2
2N 96	Rc	P	G	30				50											1
2N 97		N	G	30				50	75				5						1
2N 98		N	G	40				50	75				19						1
2N 98A		N	G	40				50	85				24						1
2N 99		N	G	40				50	75				19						1
2N 100		N		25				25	50				99						1
2N 101	Sy	P	G	25				1W	70										2
2N 102	Sy	N	G	25				1W	70										2
2N 103		N	G	35				50	75				1,5						1
2N 104	Rc	P	G	30			50	150	70				44	6	1		400	13	1

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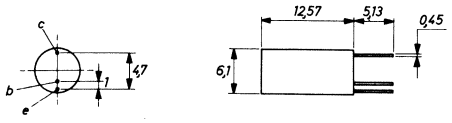
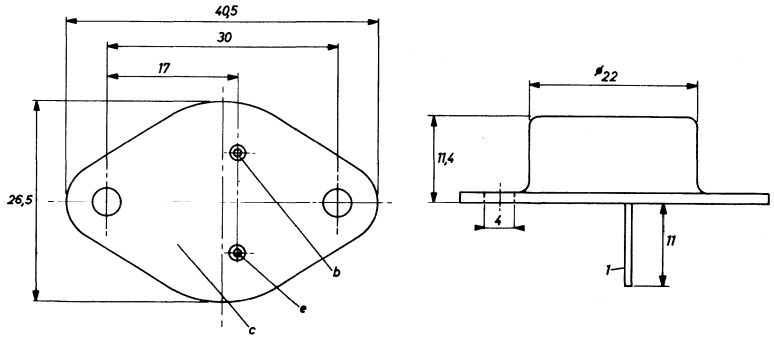


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 105	Rc	P	G	35			15	35	50	55									1
2N 106		P	G	6				102	85										1
2N 107	Ge	P	G	12	6			50	60										1
2N 108		P	G					50											1
2N 109	Rc	P	G	35	25	12	150	165	71	65....115	1	50	50....150	6	1			13	1
2N 110	We	P	G	50				200	85										5
2N 111		P	G	30	15			150	85	15		1							3
2N 111A		P	G	30	15			150	85	15		1							3
2N 112		P	G	30	15			150	85	15		1							3
2N 112A		P	G	30	15			150	85	15		1							3
2N 113		P	G	10				96	85										3
2N 114		P	G	10				96	85										3
2N 115		P	G	32	32			50W	75	110		30							5
2N 117	Tx	N	S	30				150	150										5
2N 118	Tx	N	S	30				150	150										5
2N 119	Tx	N	S	30				150	150										5
2N 120	Tx	N	S	45				150	175	76....333									3
2N 122	Tx	N	S	120				9W	150	3		100							2
2N 123	Ge	P	G	20	15			50	85										5
2N 124	Tx	N	G	10				50	75	12.....24		5							5
2N 125	Tx	N	G	10				50	75	24.....48		5							5
2N 126	Tx	N	G	10				50	75	48....100		5							5
2N 127	Tx	N	G	10				50	75	100...200		5							5
2N 128	Sp	P	G	10	4,5			30	85				19						3
2N 129		P	G	10	4,5			30	85				11,5						3
2N 130		P	G	44				85	85										1
2N 130A		P	G	45	40			100	85				14						1
2N 131		P	G	30				85	85										1
2N 131A		P	G	45	30			100	85				27						1
2N 132		P	G	24				85	85										1
2N 132A		P	G	35	20			100	85										1
2N 133		P	G	30				85	85										1
2N 133A		P	G	35	20			100	85										1
2N 135	Ge	P	G	20	12			100	85				20						3
2N 136	Ge	P	G	20	12			100	85				40						3
2N 137		P	G	10	6			100	85				60						3
2N 138		P	G	24				50	50										1
2N 138A		P	G	45	30			150	85	10		50							1
2N 138B		P	G	45				100	85										1
2N 139	Rc	P	G	16			15	80	70	55								13	1
2N 140	Rc	P	G	16			15	80	70	75						10		13	3
2N 141	Sy	P	G	60	30			1W	25										2
2N 142	Sy	N	G	60	30			1W	25										2
2N 143	Sy	P	G	60	30			1W	25										2
2N 144	Sy	N	G	60	30			1W	25										2
2N 145	Tx	N	G		20			65	75										3
2N 146	Tx	N	G		20			65	75										3
2N 147	Tx	N	G		20			65	75										3
2N 148	Tx	N	G		16			65	75										3
2N 148A	Tx	N	G		32			65	75										3
2N 149	Tx	N	G		16			65	75										3
2N 149A	Tx	N	G		32			65	75										3
2N 150	Tx	N	G		16			65	75										3
2N 150A	Tx	N	G		32			65	75										3
2N 155	So	P	G	30	15	15	500	1W	85	24	2	500						3	2

3



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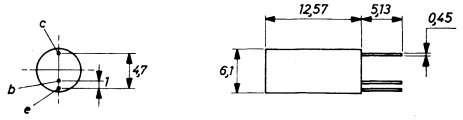

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 156		P	G	30				1W	85	24		500							2
2N 157		P	G	60				1W	85	20		500							2
2N 157A		P	G	90				1W	85	20		500							2
2N 158		P	G	60				1W	85	21		500							2
2N 158A		P	G	80	60			1W	95	21		500							2
2N 160		N	S	40				150		9.....19									1
2N 160A		N	S	40				150		9.....19									1
2N 161		N	S	40				150		19.....39									1
2N 161A		N	S	40				150		19.....39									1
2N 162		N	S	40				150		19....199									1
2N 162A		N	S	40				150		19....199									1
2N 163		N	S	40				150		39....199									1
2N 163A		N	S	40				150		30....199									1
2N 166	Ge	N	G		6		25	50											3
2N 167	Ge	N	G	30	30			75	85										3
2N 167A	Ge	N	G	30	30			75	85	17.....90		8							3
2N 168	Ge	N	G	15	15			55	75				20						3
2N 168A	Ge	N	G	15	15			65	85				20						3
2N 169	Ge	N	G	15	15			65	85				30						3
2N 169A	Ge	N	G	25	25			65	85				30						3
2N 170	Ge	N	G		6			25	50										3
2N 172	Tx	N	G		16			65	75										3
2N 173	Mo	P	G	60		40	15A	170	110	35.....70	2	5						11	2
2N 174	Mo	P	G	80	60		15A		110	25.....50	2	5						11	2
2N 175	Rc	P	G	10			2	50	71									13	1
2N 176	Mo	P	G	40	30		3A	90W	100	25	2	500	45	2	500			3	2
2N 178	Mo	P	G	30	30	20	3A	10W	90	15.....45	2	500	30	2	500			3	2
2N 180		P	G	30				150	75										1
2N 181		P	G	30				250	75										1
2N 182		N	G	25				100	75										5
2N 183		N	G	25				100	75										5
2N 184		N	G	25				100	75										5
2N 185	Tx	P	G	20				150	50				35						1
2N 186	Ge	P	G	25	25			100	85										1
2N 186A	Ge	P	G	25	25			200	85										1
2N 187	Ge	P	G	25	25			100	85										1
2N 187A	Ge	P	G	25	25			200	85										1
2N 188	Ge	P	G	25	25			100	85										1
2N 188A	Ge	P	G	25	25			200	85										1
2N 189	Ge	P	G	25	25			75	85										1
2N 190	Ge	P	G	25	25			75	85										1
2N 191	Ge	P	G	25	25			75	85										1
2N 192	Ge	P	G	25	25			75	85										1
2N 193	Sy	N	G	18	18			150	85										3
2N 194	Sy	N	G	15	15			50	75										3

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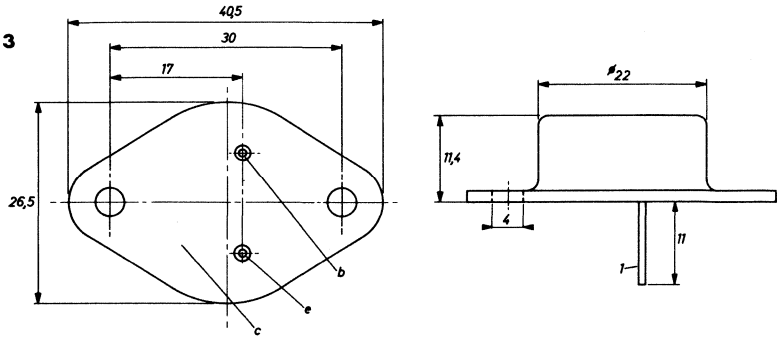

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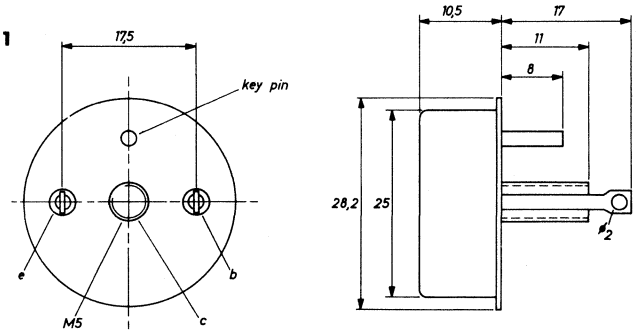

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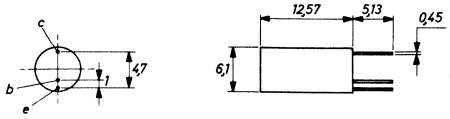

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)		
2N 194A	Sy	N	G	20	20			50	75										3
2N 206	Rc	P	G	30			50	75	85	33								1	1
2N 207		P	G	12	12		50	65					35						1
2N 207A		P	G	12	12		50	65					35						1
2N 207B		P	G	12	12		50	65					35						1
2N 211	Sy	N	G	10	10			50	75										3
2N 212	Sy	N	G	18	18			150	85	10		1	10						3
2N 213	Sy	N	G	40	25			50	75				70						1
2N 215	Rc	P	G	30			50	150	70	44	6	1						1	1
2N 216	Sy	N	G	15				50	75				3,9						3
2N 217	Rc	P	G	35	25	12	150	150	71	65....115	1	50	50....150	6	1			1	1
2N 218	Rc	P	G	16			15	80	70	48								1	1
2N 219	Rc	P	G	16			15	80	70	75								1	1
2N 220	Rc	P	G	10			2	50	71									1	1
2N 223		P	G		18			100	65				39						1
2N 224		P	G	25				250	75	60....120		100							1
2N 225		P	G	25				250	75	60....120		100							1
2N 226		P	G	30				250	75	35....105		100							1
2N 227		P	G	30				250	75	35....105		100							1
2N 228	Sy	P	G	25				50	75	50....100		35							1
2N 229	Sy	N	G	10				50	75										1
2N 230		P	G	60	30			15W	85	60....106		500							2
2N 231	Sp	P	G	4,5	4,5			9	55				19						3
2N 232		P	G	4,5	4,5			9	55				9						3
2N 233	Sy	N	G	10				50	75				3						3
2N 234		P	G		25				90										2
2N 234A	So	P	G	25	25	15	420	25W	90	25	2	420						3	2
2N 235		P	G		40				90										2
2N 235A	So	P	G	50	40	15	750	25W	90	20.....80	2	750						3	2
2N 235B	So	P	G	50	35			25W	85										2
2N 236		P	G		35				95										2
2N 236A	So	P	G	50	35	15	750	25W	95	20.....80	2	750						3	2
2N 236B	So	P	G	50	35	15	750	25W	95	40....120	2	750						3	2
2N 237		P	G	45				150	55										1
2N 238	Tx	P	G	20				50	60										1
2N 240	Sp	P	G	6	6			25	85				16			25			5
2N 241	Ge	P	G	25	25			100	85										1
2N 241A	Ge	P	G	25	25			200	85										1
2N 242	Mo	P	G	45	45		5A	106W	110	30....120	12	500						3	2
2N 243	Tx	N	S	60				750	150										1
2N 244	Tx	N	S	60				750	150										1
2N 247	Rc	P	G	40			10	80	71	60								5	1
2N 248	Tx	P	G	25					75										1
2N 249	Tx	P	G		25			350	60				30						1
2N 250	So	P	G	30	20	15	500	12W	80	30	2	500						3	2
2N 250A	So	P	G	40	35	20	3A	90W	100	25....100	1,5	3A				0,2		3	2
2N 251	So	P	G	60	40	15	500	12W	80	30	2	500						3	2
2N 251A	So	P	G	60	55	20	3A	90W	100	25....100	1,5	3A				0,2		3	2
2N 252	Tx	P	G		16			30	55										3
2N 253	Tx	N	G		12			65	75										3
2N 254	Tx	N	G		20			65	75										3
2N 255	So	P	G	15	15	500	1W	85	20....		2	500						3	2
2N 255A	So	P	G	15	15	15	420	20W	85	25	2	420						3	2
2N 256	So	P	G	30	30	30	500	1W	85	20....100	2	500						3	2
2N 256A	So	P	G	30	25	15	420	20W	85	25	2	420						3	2

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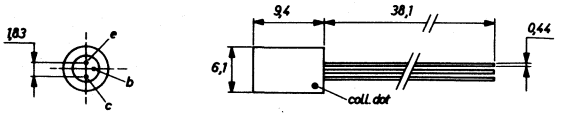

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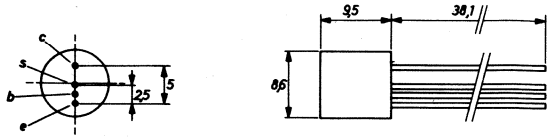

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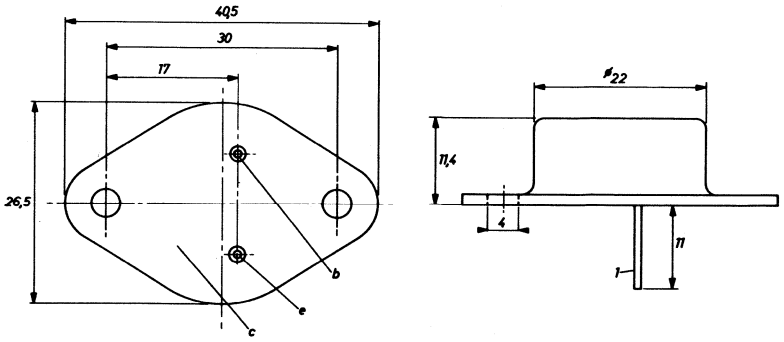
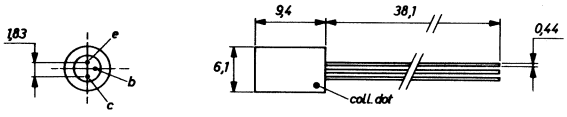


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 257	So	P	G	40	35	20	420	25W	85	20	2	420						3	2
2N 258		P	S	30	30			250	160				15						1
2N 259		P	S	30	30			250	160				32						1
2N 260		P	S	10				200	150										1
2N 260A		P	S	30				200	150										1
2N 261		P	S	75				200	150										1
2N 262		P	S	10				200	150										1
2N 262A		P	S	30				200	150										1
2N 263	Tx	N	S	45	30			150	150	45....150		10	39						1
2N 264	Tx	N	S	45	30			125	150	20.....55		10							1
2N 265	Ge	P	G		25			75	85										1
2N 266		P	G		18			75	85										1
2N 267	Rc	P	G	40				80											3
2N 268	So	P	G	80	60	40	500	25W	85	28	2	500						3	2
2N 268A	So	P	G	80	60	20	2A	10W	90	20.....80	2	2A						3	2,5
2N 269	Rc	P	G	25	24	12	100	120	85	24								1	5
2N 270	Rc	P	G	25		12	150	150	50	50....140	1	150				1	240	5	1
2N 271		P	G	30	10			150	85										3
2N 272		P	G	30	24			150	85				60						1
2N 273		P	G	45	25			150	85	30		50							1
2N 274	Rc	P	G	40	40	0,5	19	120	100	20....175		1,5	20....175	12	1,5		620	15	3
2N 277	Mo	P	G	40		20	15A	170W	110	35.....70		5						11	2,5
2N 278	Mo	P	G	50		30	15A	170W	110	35.....70		5						11	2,5
2N 279		P	G		20			125	75				20						1
2N 280		P	G		20			125	75				30						1
2N 281		P	G	16	16			167	75	45....120									1
2N 283		P	G	20	20			125	75				30						5
2N 284		P	G	32	32			125	75	15									5
2N 284A		P	G	60	60			125	75	15									5
2N 285		P	G		35			25W	95										2
2N 285A	So	P	G	35	35	15	420	25W	95	38	2	420						3	2
2N 285B	So	P	G	35	35	15	420	25W	95	38	2	420						3	2
2N 290		P	G	70				55W	95										2
2N 291	Tx	P	G	25				180	50				30						1
2N 292	Ge	N	G	15	15			65	85	6.....44									3
2N 293	Ge	N	G	15	15			65	85	6.....55									3
2N 296	Ge	P	G	60	60	15	1A	20W	85	19	2	1A						3	1
2N 297		P	G	60	50			35W	95	40....100		500							2
2N 297A	Mo	P	G	60	40	40	5A	85W	110	40....100	2	500						3	2,5
2N 299		P	G	5	4,5			20	85										3
2N 300		P	G	5	4,5			20	85				11						3
2N 301	Rc	P	G	40		10	3A	11W	85	70								3	2
2N 301A	Rc	P	G	60		10	3A	11W	85	70								3	2
2N 302		P	G	30	10			150	85				45						3
2N 303		P	G	30	10			150	85				75						3

1



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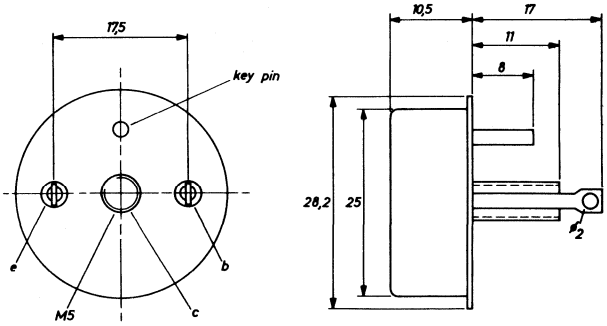

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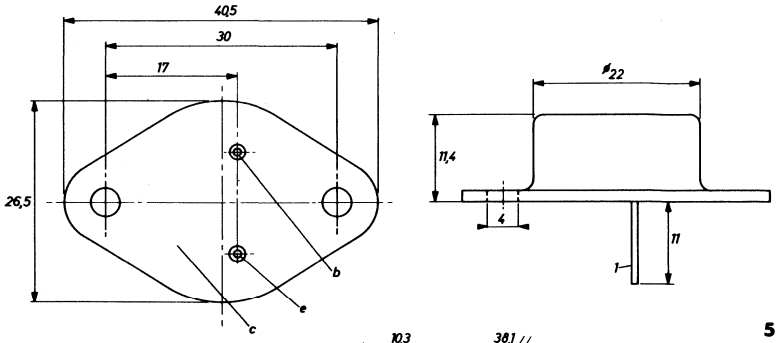

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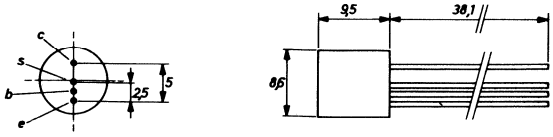

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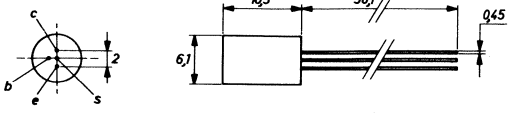
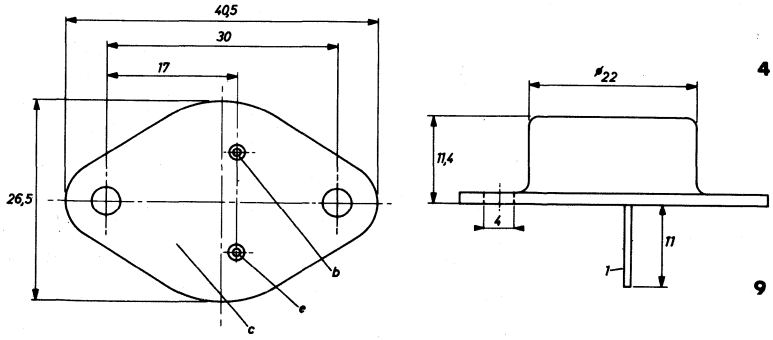


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 306	Sy	N	G	20	15			50	75				25						1
2N 207	Mo	P	G	35	35	10	5A	106W	110	20	1	200						3	2,5
2N 307A	Mo	P	G	35	35	10	5A	106W	110	30	1	200						3	2,5
2N 308	Tx	P	G	20				30	55										3
2N 309	Tx	P	G	20				30	55										3
2N 310	Tx	P	G	30				30	55										3
2N 311		P	G	15	15			75	85	25.....75		10							5
2N 312	Sy	N	G	15	15			75	85	25.....75		10							5
2N 315		P	G	20	15			100	85	15.....30		100							5
2N 315A		P	G	30	20			150	100	20.....50		100							5
2N 315B		P	G	30	20			150	100	20.....50		100							5
2N 316		P	G	20	10			100	85	20.....50		200							5
2N 316A		P	G	30	15			150	100	20.....50		200							5
2N 317		P	G	20	6			100	85	20.....60		400							5
2N 317A		P	G	25	10			150	100	20.....60		400							5
2N 319	Mo	P	G	25	20	5	500	225	100	25.....42	1	20						4	1
2N 320	Mo	P	G	25	20	5	500	225	100	34.....65	1	20						4	1
2N 321	Mo	P	G	25	20	5	500	225	100	53....121	1	20						4	1
2N 322	Mo	P	G	18	18	5	500	225	100	34.....65	1	20						4	1
2N 323	Mo	P	G	18	18	5	500	225	100	53....121	1	20						4	1
2N 324	Mo	P	G	18	18	5	500	225	100	72....198	1	20						4	1
2N 325	Sy	P	G	35	35			12W	85	30.....60		500							2
2N 326	Sy	N	G	35	35			7W	85	30.....60		500							2
2N 327		P	S	50				350	160				9						1
2N 327A	So	P	S	50	40	20		385	160	9.....22	0,5	3						9	1
2N 327B	So	P	S	50	40	20		385	200	9.....22	0,5	3						9	1
2N 328		P	S	35				350	160				18						1
2N 328A	So	P	S	35	50	20		385	160	18.....44	0,5	3						4	1
2N 328B	So	P	S	35	50	20		385	200	18.....44	0,5	3						4	1
2N 329		P	S	30				350	160				36						1
2N 329A	So	P	S	50	30	20		385	160	36.....88	0,5	3						4	1
2N 329B	So	P	S	50	30	20		385	200	36.....88	0,5	3						4	1
2N 330		P	S	45				350	160				9						1
2N 330A	So	P	S	50	30	20		385	160				9.....42	5	3			4	1
2N 331	Mo	P	G	30		12		200	100				30.....70	6	1		375	4	1
2N 332	Tx	N	S	45				150	175	9.....20									3
2N 332A	Tx	N	S	45	45			500	175										1
2N 333	Tx	N	S	45				150	175	18.....40									3
2N 333A	Tx	N	S	45	45			500	175										1
2N 334	Tx	N	S	45				150	175	18.....86									3
2N 334A	Tx	N	S	45	45			500	175										1
2N 334B		N	S	60	60			500	175	15.....85		1	18						1
2N 335	Tx	N	S	45				150	175	36.....86									3
2N 335A	Tx	N	S	45	45			500	175										1
2N 335B	Ge	N	S	60	60			500	175	28.....90		1	37						1
2N 336	Tx	N	S	45				150	175	76....333									3
2N 336A	Tx	N	S	45	45			500	175										1
2N 337	Tx	N	S	45				125	150	20.....55		10							5
2N 337A	Tx	N	S	45				500	175	20.....55		10	19						1
2N 338	Tx	N	S	45				125	150	45....150		10							5
2N 338A	Ge	N	S	45				500	175	45....150		10	39						1
2N 339	Tx	N	S	55	55			1W	150										1
2N 339A	Tr	N	S	60	60			3W	200	20.....80			25			10			3
2N 340	Tr	N	S	85	85			1W	150										1
2N 340A	Tr	N	S	85	85			3W	200	20.....80			25			10			3

3



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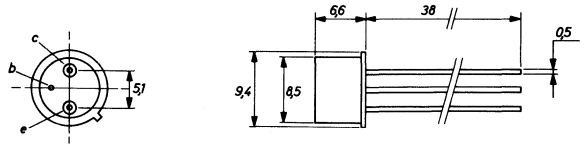

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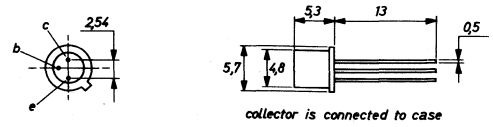

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 341	Tr	N	S	125	85			1W	150										1
2N 341A	Tr	N	S	125	125			3W	200	20.....80			25			10			3
2N 342	Tr	N	S	60	60			1W	150										1
2N 342A	Tr	N	S	85	85			1W	150										1
2N 342B	Tr	N	S	85	85			750	175				9						1
2N 343	Tr	N	S	60	60			1W	150										1
2N 343A	Tr	N	S	60	60			1W	150										1
2N 343B	Tr	N	S	65	65			750	175				28						1
2N 344	Sp	P	G	5	5			20	55				11						3
2N 345	Sp	P	G	5	5			20	55				25						3
2N 346	Sp	P	G	5	5			20	55				10						3
2N 350	So	P	G	50	40	10	700	10W	100	20.....60	2	700						3	2
2N 350A	So	P	G	50	40	10	700	90W	100	20.....60	2	700						3	2
2N 351	So	P	G	50	40	10	700	10W	100	25.....90	2	700						3	2
2N 351A	So	P	G	50	40	10	700	90W	100	25.....90	2	700						3	2
2N 352		P	G		40			25W	100	30....140		1A							2
2N 353		P	G		40			30W	100	40....150		1A							2
2N 354		P	S	25	25			150	140				9						3
2N 355		P	S	10	10			150	140				9						5
2N 356	Rc	N	G	20	80	20	500	100	85	20.....50		100							
2N 356A	Sy	N	G	30	20			150	100	20.....50		100							5
2N 357	Rc	N	G	20	15	20	500	100	85	20.....50		200							
2N 357A	Sy	N	G	30	20			150	100	25.....75		200							5
2N 358	Rc	N	G	20	12	20	500	100	85	20.....50		300							
2N 358A	Sy	N	G	30	15			150	100	25.....75		300							5
2N 359		P	G	25	18			170	85	100...300		50							1
2N 360		P	G	32	30			170	85	50....150		50							1
2N 361		P	G	32	30			170	85	25.....75		50							1
2N 362		P	G	25	18			170	85				50						1
2N 363		P	G	32	28			170	85				25						1
2N 364	Tx	N	G	30				150	100				9						5
2N 365	Tx	N	G	30				150	100				19						5
2N 366	Tx	N	G	30				150	100				49						5
2N 367	Tx	P	G	30				100	75				9						5
2N 368	Tx	P	G	30				100	75				19						5
2N 369	Tx	P	G	30				100	75				49						5
2N 370	Rc	P	G	24		0,5	10	80	71	60	12	1				30		5	1
2N 371	Rc	P	G	24		0,5	10	80	71	80								5	1
2N 372	Rc	P	G	24		0,5	10	80	71	60	12	1						5	3
2N 373	Rc	P	G	25		0,5	10	80	71	60								5	
2N 374	Rc	P	G	25		0,5	10	80	71	60								5	
2N 375	Mo	P	G	80	60	40	3A	106W	110	35.....90	4	1A						3	2,5
2N 376	Rc	P	G	50	40		3A	10W	100	35....120	2	700						3	2
2N 376A	Mo	P	G	50	40		3A	90W	100	35....120	2	700						3	2
2N 377	Sy	N	G	25	20			150	100	20.....60		30							5
2N 377A	Sy	N	G	40	40			150	100	20.....60		30							5
2N 378	Mo	P	G		20		5A	106W	110	40.....80	2	2A						3	2,5
2N 379	Mo	P	G		40		5A	106W	110	20.....70	2	2A						3	2,5
2N 380	Mo	P	G		30		5A	106W	110	30.....70	2	2A						3	2,5
2N 381	Mo	P	G	50	25	20	400	500	100	35.....65	1	20	35.....85	5	10			4	1,5
2N 382	Mo	P	G	50	25	20	400	500	100	60.....95	1	20	70....135	5	10			4	1,5
2N 383	Mo	P	G	50	25	20	400	500	100	75....120	1	20	90....155	5	10			4	1,5
2N 384	Rc	P	G	40	40	0,5	10	120	100	20....175	12	1,5					620	15	3
2N 385	Sy	N	G	25	25			150	100	30....110		30							5
2N 385A	Sy	N	G	40	40			150	100	30....110		30							5

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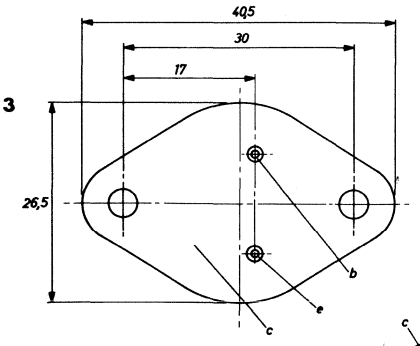

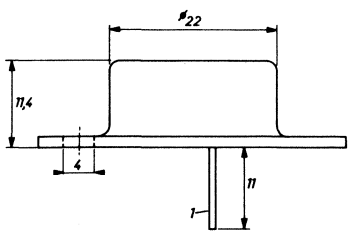

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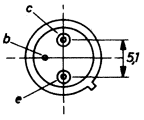

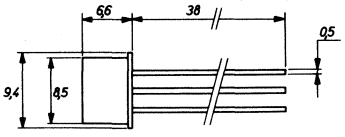

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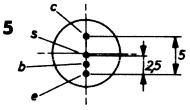

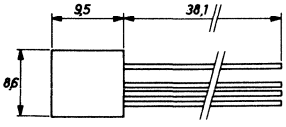

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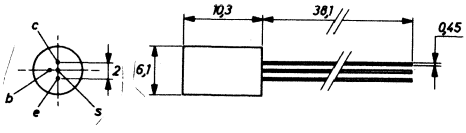

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 386		P	G	60	60			500	100	20		2,5A							2
2N 387		P	G	80	80			500	100	20		2,5A							2
2N 388	Rc	N	G	25	20	15	200	150	100	60....180	0,5	30						4	5
2N 388A	Rc	N	G	40	40	15	200	150	100	60....200	0,5	30						4	5
2N 389	Tx	N	S		60	10		85W	200	12.....60	15	1A						24	2
2N 389A	Tx	N	S		60			85W	200	12.....60		1A				1			2
2N 392	So	P	G	60	40	40		48W	95	60....150		3A						3	2
2N 393	Sp	P	G	6	6			25	100	20		50	40			25			5
2N 394	Ge	P	G	10	10			150	85	20....150		10							5
2N 394A	Ge	P	G	10	30			150	85	30....120		10							5
2N 395	Rc	P	G	30	15	20	200	100		20....150		10						4	5
2N 396	Rc	P	G	30	20			200	100	30....150	1	10						4	5
2N 396A	Rc	P	G	30	20	20	200	200	100	30....150	1	10						4	5
2N 397	Rc	P	G	30	15	20	200	200	100	40....150	1	10						4	5
2N 398	Mo	P	G	105	105	50	100	50	85	65	0,35	5					1200	4	1
2N 398A	Mo	P	G	105	105	50	200	150	100	65	0,35	5	20				1200	4	1
2N 398B	Rc	P	G	105	105	75	200	250	100	20	0,25	5	40	6	1		300	4	1
2N 399	So	P	G	35	35	15	420	25W	90	36.....40	2	420						3	2
2N 400	So	P	G	35	20	15	1,3	35W	95	40....300		500	25					3	2
2N 401	So	P	G	35	35	15	420	25W	90	31.....36	2	420						3	2
2N 402	Wh	P	G	25	20			180	85										1
2N 403	Wh	P	G	25	20			180	85										1
2N 404	Tx	P	G	25	24	12	100	150	85	30....100	0,15	12	135	6	1			4	3,5
2N 404A	Rc	P	G	40	35	25	150	150	100	30	0,15	12						4	5
2N 405	Rc	P	G	20			35	150	71	35	6	1						13	1
2N 406	Rc	P	G	20			35	150	71	35	6	1						1	1
2N 407	Rc	P	G	20			70	150	71	65	1	50						13	1
2N 408	Rc	P	G	20			70	150	71	65	1	50						1	1
2N 409	Rc	P	G	13			15	80	71	48	9	1						13	1
2N 410	Rc	P	G	13			15	80	71	48	9	1						1	1
2N 411	Rc	P	G	13			15	80	71	75	9	0,6						13	3
2N 412	Rc	P	G	13			15	80	71	75	9	0,6						1	3
2N 413	Ge	P	G	30	18			150	85										3
2N 413A	Ge	P	G	30	15			150	85										3
2N 414	Rc	P	G	30	15		200	150	85				80	6	1			4	5
2N 414A	Sy	P	G	30	15			150	85										3
2N 414B		P	G	30	24			200	100				40						3
2N 414C		P	G	30	24			200	100				40						3
2N 415		P	G	30	10			150	85										3
2N 415A	Sy	P	G	30	10			150	85										3
2N 416		P	G	30	12			150	85										3
2N 417		P	G	30	10			150	85										3
2N 418	So	P	G	100	75	15	4A	25W	100	40	2	4A						3	2
2N 419	So	P	G	25	20	15		35W	95	50....350	1,5	500	25					3	2
2N 420	So	P	G	65	40	15	4A	25W	100	40	2	4A						3	2

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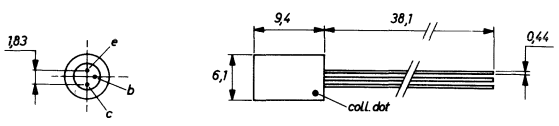

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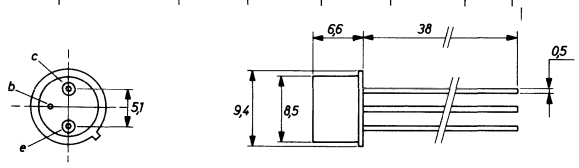

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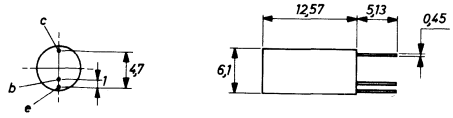

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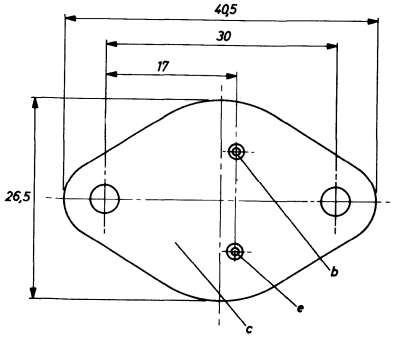

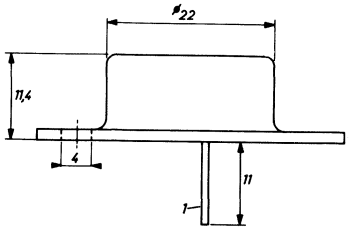

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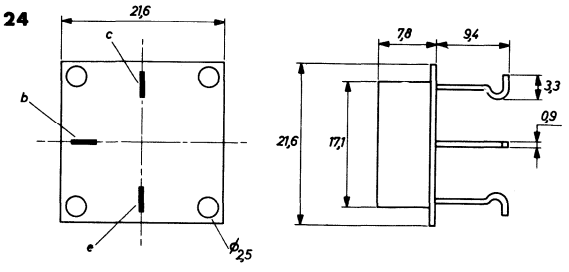

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)	Case	Use
2N 420A	So	P	G	90	65	15	4A	25W	100	40	2	4A						3	2
2N 422		P	G	35	20			150	85										1
2N 422A		P	G	35	20			175	100				30						1
2N 424	Tx	N	S		80	10		85W	200	12.....60	15	1A						24	2
2N 424A	Fa	N	S		80			85W	200	12.....60		1A				1			2
2N 425	Tx	P	G	30	20			175	85	20.....40									5
2N 426	Tx	P	G	30	10			175	85	30.....60									5
2N 427	Tx	P	G	30	15			175	85	40.....80									5
2N 428	Tx	P	G	30	12			175	85	60									5
2N 428A		P	G	30	18			150	100	80									5
2N 438	Sy	N	G	30	25			100	85	20		50							5
2N 438A	Sy	N	G	30	25			150	85	20		50							5
2N 439		N	G	30	20			100	85	30		50							5
2N 439A	Sy	N	G	30	20			150	85	30		50							5
2N 440		N	G	30	15			100	85	40		50							5
2N 440A	Sy	N	G	30	15			150	85	40		50							5
2N 441	Mo	P	G	40	40	20		150W	95	20.....40	2	5A						11	2
2N 442	Mo	P	G	50	45	30		150W	95	20.....40	2	5A						11	2
2N 443	Mo	P	G	60	50	40		150W	95	20.....40	2	5A						11	2
2N 444		N	G	15	15			100	85										1
2N 444A		N	G	40	25			150	100	20.....40		20	15						1
2N 445		N	G	15	12			100	85										1
2N 445A		N	G	30	18			150	100	40....160		20	35						1
2N 446		N	G	15	10			100	85										5
2N 446A		N	G	30	15			150	100	60....250		20	60						5
2N 447		N	G	15	6			100	85										5
2N 447A		N	G	30	12			150	100	80....300		20	85						5
2N 447B		N	G	25	12			150	100	80....300		20	150						5
2N 448	Ge	N	G	15	15			65	85	8.....51		1							3
2N 449	Ge	N	G	15	15			65	85	34		1							3
2N 450	Ge	P	G	20	12			150	85	30		10							5
2N 456	So	P	G	40	40	20	5A	50W	95	10	1,5	5A						3	2
2N 456A	So	P	G	40	40	20	5A	150W		30.....90	1,5	5A						3	2
2N 456B	So	P	G	40	30	30	5A	150W	100	30.....90	1,5	5A				0,2		3	2
2N 457	So	P	G	60	60	20	5A	50W	95	10	1,5	5A						3	2
2N 457A	So	P	G	60	60	20	5A	150W		30.....90	1,5	5A						3	2
2N 457B	So	P	G	60	40	30	5A	150W	100	30.....90	1,5	5A				0,2		3	2
2N 458	So	P	G	80	80	20	5A	50W	95	10	1,5	5A						3	2
2N 458A	So	P	G	80	80	20	5A	150W		30.....90	1,5	5A						3	2
2N 458B	So	P	G	80	45	30	5A	150W	100	30.....90	1,5	5A				0,2		3	2
2N 459	Mo	P	G		60	10	5A	106W	110	20.....701	2	2A						3	2
2N 459A	Mo	P	G	105	60	25	5A	106W	110	40.....70	2	2A						3	2
2N 460	Mo	P	G	45	35	10	400	500	100				17.....36	6	1			4	1
2N 461	Mo	P	G	45	35	10	400	500	100				31....200	6	1			4	1
2N 462		P	G	40				150	75	20		200							5

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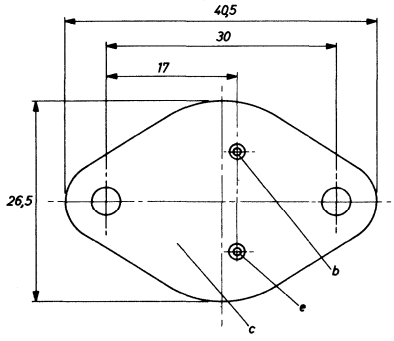

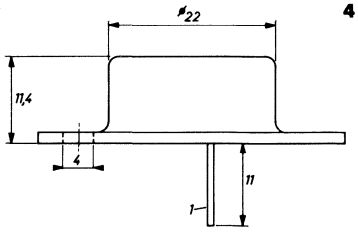

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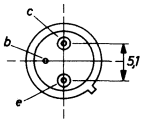

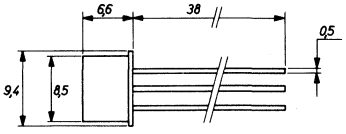

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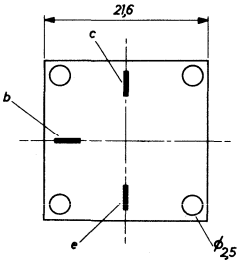

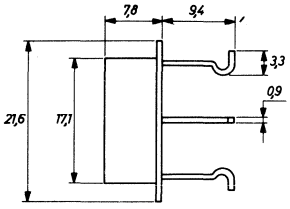

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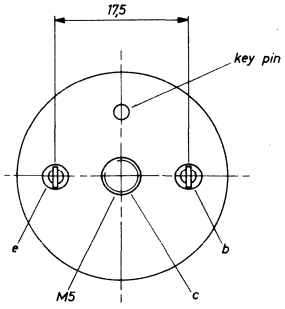

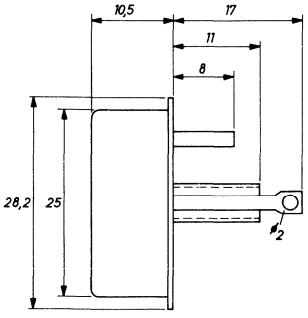

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 463	We	P	G	60	60			37W	100	20.....60		2A							2
2N 464	Mo	P	G	45	40	12	500	200	100				14.....26	6	1		375	4	1
2N 465	Mo	P	G	45	30	12	500	200	100				27.....45	6	1		375	4	1
2N 466	Mo	P	G	35	20	12	500	200	100				56.....90	6	1		375	4	1
2N 467	Mo	P	G	35	15	12	500	200	100				112...180	6	1		375	4	1
2N 470	Tr	N	S	15	15			200	200				10			8			3
2N 471	Tr	N	S	30	30			200	200				10			8			1
2N 471A	Tr	N	S	30	30			200	200				10			8			1
2N 472	Tr	N	S	45	45			200	200				10			8			3
2N 472A	Tr	N	S	45	45			200	200				10			8			1
2N 473	Tr	N	S	15	15			200	200				20			8			1
2N 474	Tr	N	S	30	30			200	200				20			8			1
2N 474A	Tr	N	S	30	30			200	200	10			20			8			1
2N 475	Tr	N	S	45	45			200	200				20			8			1
2N 475A	Tr	N	S	45	45			200	200	10			20			8			1
2N 476	Tr	N	S	15	15			200	200				30			12			1
2N 477	Tr	N	S	30	30			200	200				30			12			1
2N 478	Tr	N	S	15	15			200	200				40			20			3
2N 479	Tr	N	S	30	30			200	200				40			20			3
2N 479A	Tr	N	S	30	30			200	200	10			40			20			1
2N 480	Tr	N	S	45	45			200	200				40			20			3
2N 480A	Tr	N	S	45	45			200	200	10			40			20			1
2N 481		P	G	12	12			150	85										3
2N 482	Sy	P	G	12	12			150	85										3
2N 483	Sy	P	G	12	12			150	85										3
2N 484	Sy	P	G	12	12			150	85										3
2N 485		P	G	12	12			150	85										3
2N 486		P	G	12	12			150	85										3
2N 487		P	G	18	18			100	85	20		1	10			10			1
2N 495		P	S	25	25			150	140				15						3
2N 496		P	S	10	10			150	140	15		15	9			7,2			5
2N 497	Rc	N	S	60	60	8		4W	200	12.....36		200						4	2,5
2N 497A	Tx	N	S	60	60			5W	200	12.....36		200							1
2N 498	Tx	N	S	100	100	8		4W	200	12.....36	10	200	30	30	30			4	2
2N 498A	Tx	N	S	100	100			5W	200	12.....36		200							1
2N 499	Mo	P	G	30		0,5	50	60	100				20.....80	9	1	120		1	3
2N 499A	Mo	P	G	30		0,5	50	60	100				20.....80	9	1	120		1	3
2N 500		P	G	20	15			50	85										3
2N 501	Sp	P	G	15	12			60	100	20		10				90			5
2N 501A	Sp	P	G	15	12			60	100	30		10				90			5
2N 502	Mo	P	G	20		0,5	50	60	100				9	10	2	600		4	3
2N 502A	Mo	P	G	30		0,5	50	75	100				15	10	2	600		4	3
2N 502B	Mo	P	G	30		0,5	50	75	100				20.....80	10	2	600		4	3
2N 503	Sp	P	G	20	20			25	85				9			168			5
2N 504	Sp	P	G	35	25			30	85	20....200		10	16						5
2N 506	Sy	P	G	40				50	85	25.....50		50							1
2N 507	Sy	N	G	40				50	85	25.....50		50							1
2N 508	Mo	P	G	18	18	5	500	225	100	99....198	1	20						4	1
2N 508A	Mo	P	G	30	30	10	200	200	100	100...200	1	20	75....180	5	1			4	1
2N 509		P	G	30				225	100							400			3
2N 511	Tx	P	G	40	30	30	25A	150W	100	20.....60	2	10A				0,26			2
2N 511A	Tx	P	G	60	40	30	25A	150W	100	20.....60	2	10A				0,26			2
2N 511B	Tx	P	G	80	45	30	25A	150W	100	20.....60	2	10A				0,26			2
2N 512	Tx	P	G	40	30	30	25A	150W	100	20.....60	2	15A				0,28			2
2N 512A	Tx	P	G	60	40	30	25A	150W	100	20.....60	2	15A				0,28			2
2N 512B	Tx	P	G	80	45	30	25A	150W	100	20.....60	2	15A				0,28			5
2N 513	Tx	P	G	40	30	30	25A	150W	100	20.....60	2	20A				0,3			2
2N 513A	Tx	P	G	60	40	30	25A	150W	100	20.....60	2	20A				0,3			2
2N 513B	Tx	P	G	80	45	30	25A	150W	100	20.....60	2	20A				0,3			5
2N 514	Tx	P	G	40	30	30	25A	150W	100	20.....60	2	25A				0,43			2

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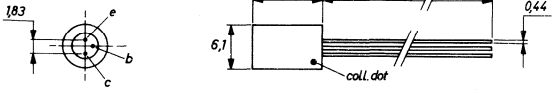

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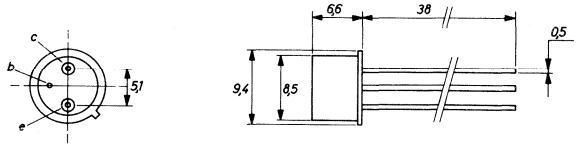

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 514A	Tx	P	G	60	40	30	25A	150W	100	20.....60	2	25A				0,43			5
2N 514B	Tx	P	G	80	45	30	25A	150W	100	20.....60	2	25A				0,43			5
2N 515	Sy	N	G	20	18			50	75				4						3
2N 516	Sy	N	G	20	18			50	75				4						3
2N 517	Sy	N	G	20	18			50	75				4						3
2N 518	Ge	P	G	45	12			150	85	60		10							5
2N 519	Sy	P	G	15	15			100	85				15						5
2N 519A		P	G	25	18			150	100	20.....50		20	15						5
2N 520	Sy	P	G	15	12			100	85				20						5
2N 520A		P	G	25	15			150	100	40....170		20	40						5
2N 521		P	G	15	10			100	85				35						5
2N 521A		P	G	25	12			150	100	60....250		20	70						5
2N 522		P	G	15	8			100	85				60						5
2N 522A		P	G	25	10			150	100	80....320		20	100						5
2N 523		P	G	15	6			100	85				80						5
2N 523A		P	G	20	6			150	100	100...400		20	125						5
2N 524	Mo	P	G	45	30	15	500	225	100	25.....42	1	20	18.....41	5	1		333	4	1
2N 524A		P	G	45	30			225	100	25.....42		20	18						1
2N 525	Mo	P	G	45	30	15	500	225	100	34.....65	1	20	30.....64	5	1		333	4	1
2N 525A		P	G	45	30			225	100	34.....65		20	30						1
2N 526	Mo	P	G	45	30	15	500	225	100	53.....90	1	20	44.....88	5	1		333	4	1
2N 526A		P	G	45	30			225	100	53.....90		20	44						1
2N 527	Mo	P	G	45	30	15	500	225	100	72....121	1	20	60....120	5	1		333	4	1
2N 527A		P	G	45	30			225	100	72....121		20	60						1
2N 529	We	P	G	40	40			2,5W	100	20		500							1
2N 529			G	15	15			100	85										1
2N 530			G	15	15			100	85										1
2N 531			G	15	15			100	85										1
2N 532			G	15	15			100	85										1
2N 533			G	15	15			100	85										1
2N 534		P	G	50	50			25	65				35						1
2N 535		P	G	20	20			50	85				35						1
2N 535A		P	G	20	20			50	85				35						1
2N 535B		P	G	20	20			50	85				35						1
2N 526		P	G	20	20			50	85	100		30							5
2N 537	We	P	G	30					100										3
2N 538	So	P	G	80	60		5A	34W	95	20.....50	2	2A							2
2N 538A	So	P	G	80	60		5A	34W	95	20.....50	2	2A							2
2N 539	So	P	G	80	55		5A	34W	95	30.....75	2	2A							2
2N 539A	So	P	G	80	55		5A	34W	95	30.....75	2	2A							2
2N 540	So	P	G	80	55		5A	34W	95	45....113	2	2A							2
2N 540A	So	P	G	80	55		5A	34W	95	45....113	2	2A							2
2N 541	Tx	N	S	15	15			200	200				80			100			3
2N 541A		N	S	15	15			200	200	20			80			8			3
2N 542	Tx	N	S	30	30			200	200				80			10			3
2N 542A	Ge	N	S	30	30			200	200	20			80			10			3
2N 543	Tr	N	S	50	50			200	200				80			10			3
2N 543A	Tr	N	S	45	45			200	200	20			80			10			3
2N 544	Rc	P	G	34		1	10	80	71	60								5	3
2N 545	Tr	N	S	60	60			5W	200	15.....80		500							3
2N 546	Tr	N	S	30	30			5W	200	15.....80		500							3
2N 547	Tr	N	S	60	60			5W	200	20.....80		500				4			3
2N 548	Tr	N	S	30	30			5W	200	20.....80		500				4			3
2N 549	Tr	N	S	60	60			5W	200	20.....80		200				4			3
2N 550	Tr	N	S	30	30			5W	200	20.....80		200				4			3

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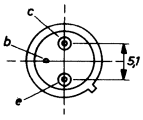

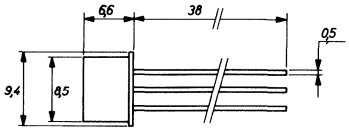

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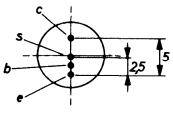

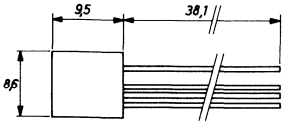

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 551	Tr	N	S	60	60			5W	200	20.....80		50				3			3
2N 552	Tr	N	S	30	30			5W	200	20.....80		50				3			3
2N 553	So	P	G	80	40	40		35W	95	40.....80	2	500						3	5
2N 554	Mo	P	G	15	16	15	3A	10W	90	50	2	500	55	2	500			3	2
2N 555	Mo	P	G	30	30	15	3A	10W	90	50	2	500	55	2	500			3	2
2N 556	Sy	N	G	25	20			100	85	35.....70		1							5
2N 557	Sy	N	G	20	20			100	85	20		1							5
2N 558	Sy	N	G	15	15			100	75	60		1							5
2N 559	We	P	G	15	15			150	100										5
2N 560		N	S		60			500	150	20		100							5
2N 561	Rc	P	G	80	50	60	10A	50W	100	20.....50		4A						40	5
2N 563		P	G	30	25			150	85	10.....30									5
2N 564		P	G	30	25			120	85	10.....30									5
2N 565		P	G	30	25			150	85	30.....50									5
2N 566		P	G	30	25			120	85	30.....50									5
2N 567		P	G	30	25			150	85	50.....70									5
2N 568		P	G	30	25			120	85	50.....70									5
2N 569		P	G	30	25			150	85	70....100									5
2N 570		P	G	30	20			120	85	70....100									5
2N 571		P	G	30	10			150	85	100									5
2N 572		P	G	30	10			120	85	100									5
2N 573		P	G	40	25			200	100	30....300		50							1
2N 574	So	P	G	60	55		45A	180W	100	9.....22	2	10A							2
2N 574A	So	P	G	80	60		45A	180W	100	9.....22	2	10A							2
2N 575	So	P	G	60	50		45A	180W	100	10.....42		10A							2
2N 575A	So	P	G	80	55		45A	180W	100	10.....42		10A							2
2N 576	Sy	N	G	20	20			200	100	20.....60		400							5
2N 576A	Sy	N	G	40	20			200	100	20.....60		400							5
2N 578	Rc	P	G	20		12	400	120	71	10		400						7	
2N 579	Rc	P	G	20		12	400	120	71	20		400						7	
2N 580	Rc	P	G	20		12	400	120	71	30		400						7	
2N 581	Rc	P	G	18	15	10		80	71	20	0,3	20						4	5
2N 582	Rc	P	G	25	14			120	71	40	0,2	20						4	5
2N 583	Rc	P	G	18		10	100	80	71	20		20						1	5
2N 584	Rc	P	G	25		12	100	120	71	40		20						1	1
2N 585	Rc	N	G	25	15	20	200	120	71	20	0,2	20						4	5
2N 586	Rc	P	G	45		12	250	250	85	35	0,2	250						5	5
2N 587	Sy	N	G	40	20			150	100	20		200							5
2N 588	Sp	P	G	15	15			30	85										3
2N 588A		P	G	15	15			60	85	30		10							3

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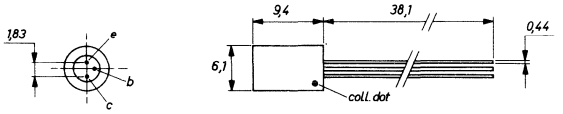

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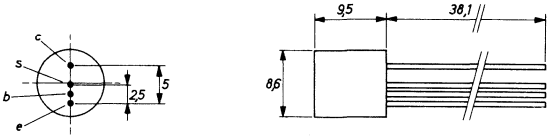

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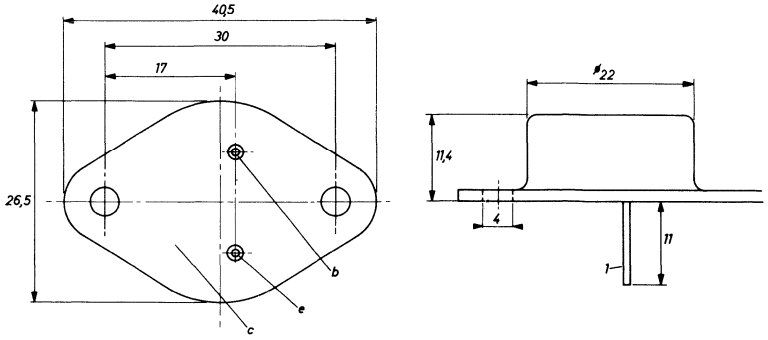

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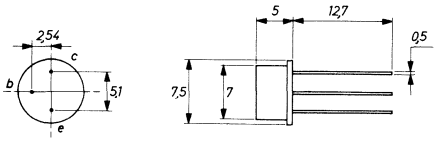

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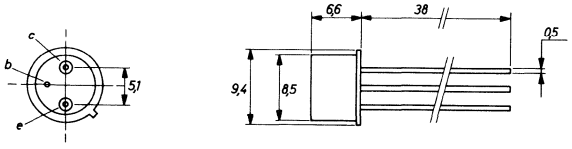

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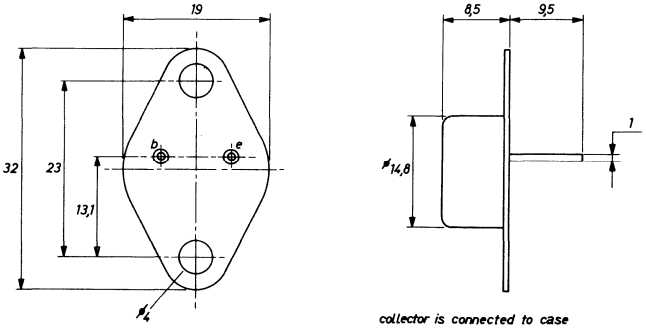

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 589		P	G	100	75			90W	100	20.....40		3A							2
2N 591	Rc	P	G	32	32		40	200	71				40....120	12	2		353	1	1
2N 592		P	G	20	20			125	85	20									5
2N 593		P	G	40	30			125	85	30									5
2N 594	Tx	N	G	20	20			100	85	20									5
2N 595	Tx	N	G	15	15			100	85	35									5
2N 596	Tx	N	G	10	10			100	85	50									5
2N 597		P	G	45	40			250	100	40		100							5
2N 598		P	G	35	35			250	100	70....225		100				5,6			5
2N 599		P	G	30	20			250	100	100		100				10			5
2N 600		P	G	35	35			750	100	70....225		100				5,6			5
2N 601		P	G	30	20			750	100	100		100				10			5
2N 602	Sy	P	G	20	20			120	85	20.....80						10			5
2N 603	Sy	P	G	30	20			120	85	30....100						30			5
2N 604	Sy	P	G	30	20			120	85	40....140						50			5
2N 605		P	G	15	15			120	85										3
2N 606		P	G	15	15			120	85										3
2N 607		P	G	15	15			120	85										3
2N 608		P	G	15	15			120	85										3
2N 609	Wh	P	G	25	15			180	85										1
2N 610	Wh	P	G	25	15			180	85										1
2N 611	Wh	P	G	25	15			180	85										1
2N 612	Wh	P	G	25	15			180	85										1
2N 613	Wh	P	G	25	15			180	85										1
2N 614	Wh	P	G	20	15			180	85										3
2N 615	Wh	P	G	20	15			180	85										3
2N 616	Wh	P	G	15	12			180	85										3
2N 617	Wh	P	G	15	12			180	85										3
2N 618	Mo	P	G	80	60	40	3A	106W	110	60....140	4	1A						3	2
2N 619		N	S	50	40			175	160	9.....22		5							1
2N 620		N	S	50	35			175	160	18.....44		5							1
2N 621		N	S	50	30			175	160	36.....88		5							1
2N 624		P	G	30	20			100	100				20						3
2N 625	Sy	N	G	40	30			1,5W	100	20		500							5
2N 627	So	P	G	40	30	20		90W	100	10.....30	2	10A						3	2
2N 628	So	P	G	60	45	30		90W	100	10.....30	2	10A						3	2
2N 629	So	P	G	80	60	40		90W	100	10.....30	2	10A						3	2
2N 630	So	P	G	100	75	50		90W	100	10.....30	2	10A						3	2
2N 631		P	G	25	20		167	85											1
2N 632		P	G	25	20			167	85										1
2N 633		P	G	35	30			167	85										1
2N 634	Ge	N	G	20	20			150	85	15		200							5
2N 634A	Ge	N	G	25	20			2,5	85	40....120		10							5
2N 635	Ge	N	G	20	20			150	85	25		200							5
2N 635A	Ge	N	G	25	20			2,5	85	80....240		10							5
2N 636	Ge	N	G	20	20			150	85	35		200							5
2N 636A	Ge	N	G	25	15			2,5	85	100...300		10							5
2N 637	So	P	G	60	35	15	3A	60W	100	30.....60	5	3A					45	3	5
2N 637A	So	P	G	90	65	15	3A	60W	100	30.....60	5	3A					45	3	5
2N 637B	So	P	G	100	75	15	3A	60W	100	30.....60	5	3A					45	3	5
2N 638	So	P	G	60	35	15	3A	60W	100	20.....40	5	3A					45	3	5
2N 638A	So	P	G	90	65	15	3A	60W	100	20.....40	5	3A					45	3	5
2N 638B	So	P	G	100	75	15	3A	60W	100	20.....40	5	3A					45	3	5
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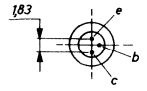

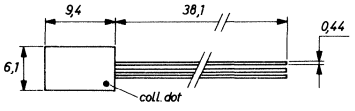

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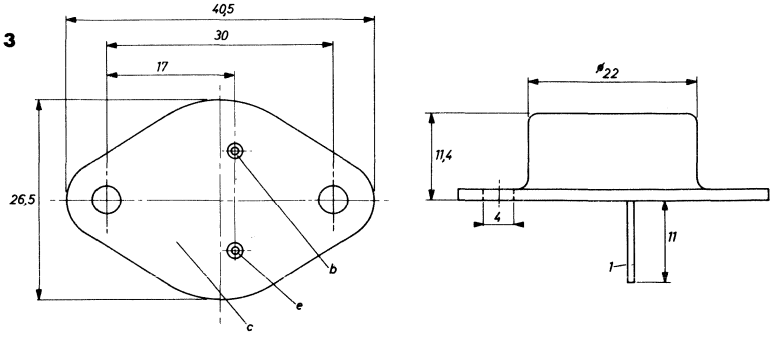
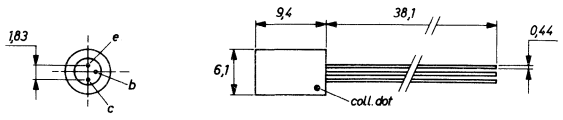


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 639B		P	G		75			37W	100	15		3A							5
2N 640	Rc	P	G	34		1	10	80	71	50								5	1
2N 641	Rc	P	G	34		1	10	80	71	50								5	1
2N 642	Rc	P	G	34		1	10	80	71	50								5	1
2N 643	Rc	P	G	30		2	100	120	71	20						20		7	5
2N 644	Rc	P	G	30		2	100	120	71	20		10				20		7	5
2N 645	Rc	P	G	30		2	100	120	71	20		10				20		7	5
2N 646		N	G	25	25			100	85	50....150		30							1
2N 647	Rc	N	G	25	15	12	100	100	71	50....150	1	50				2		1	1
2N 649	Rc	N	G	20	18	2,5	100	100	71	50....150	1	50				2		1	1
2N 650	Mo	P	G	45	30	30	500	200	100	44	1	10	30.....70	6	1		375	4	1
2N 650A	Mo	P	G	45	30	30	500	200	100	30.....90	1	10	30	6	1		375	4	1
2N 651	Mo	P	G	45	30	30	500	200	100	75	1	10	50....120	6	1		375	4	1
2N 651A	Mo	P	G	45	30	30	500	200	100	45....150	1	10	50	6	1		375	4	1
2N 652	Mo	P	G	45	30	30	500	200	100	115	1	10	100...225	6	1		375	4	1
2N 652A	Mo	P	G	45	30	30	500	200	100	80....250	1	10	100	6	1		375	4	1
2N 653	Mo	P	G	30	25	25	250	200	100				30.....70	6	1		375	4	1
2N 654	Mo	P	G	30	25	25	250	200	100				50....125	6	1		375	4	1
2N 655	Mo	P	G	30	25	25	250	200	100				100...250	6	1		375	4	1
2N 556	Mo	N	S	60	60	8		4W	200	30.....90	10	200						4	1
2N 657	Mo	N	S	100	100	8		4W	200	30.....90	10	200						4	1
2N 657A	Ge	N	S	100	100			5W	200	30.....90		200							1
2N 658	Tx	P	G	25	16			167	85	25.....80									5
2N 659	Tx	P	G	25	14			167	85	40....110									5
2N 660	Tx	P	G	25	11			167	85	60....150									5
2N 661	Tx	P	G	25	9			167	85	80									5
2N 662	Tx	P	G	25	11			167	85	30									5
2N 663	So	P	G	50	25	20		35W	100	25.....75	2	500						3	5
2N 665	Mo	P	G	80		40	3A	35W	95	40.....80	2	500						3	5
2N 669	Mo	P	G	40	30		3A	90W	100	75....250	2	500	90	2	500			3	2
2N 670		P	G	40	40			300	85	40....250		1A							1
2N 671		P	G	40	40			800	85	40....250		1A							1
2N 672		P	G	25	25			300	85										1
2N 673		P	G	25	25			800	85										1
2N 674		P	G	75	75			300	85	40....250		1A							1
2N 675		P	G	75	75			800	85	40....250		1A							1
2N 677	So	P	G	50	30	25	10A	90W	100	20.....60	2	10A						3	2
2N 677A	So	P	G	60	40	25	10A	90W	100	20.....60	2	10A						3	2
2N 677B	So	P	G	90	70	25	10A	90W	100	20.....60	2	10A						3	2
2N 677C	So	P	G	100	80	25	10A	90W	100	20.....60	2	10A						3	2
2N 678	So	P	G	50	20	25	10A	90W	100	50....100	2	10A						3	2
2N 678A	So	P	G	60	30	25	10A	90W	100	50....100	2	10A						3	2
2N 678B	So	P	G	90	60	25	10A	90W	100	50....100	2	10A						3	2
2N 678C	So	P	G	100	60	25	10A	90W	100	50....100	2	10A						3	2
2N 679	Su	N	G	25	20			150	85	20		30							5

1



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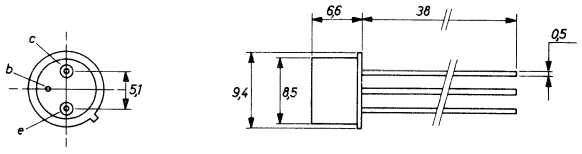

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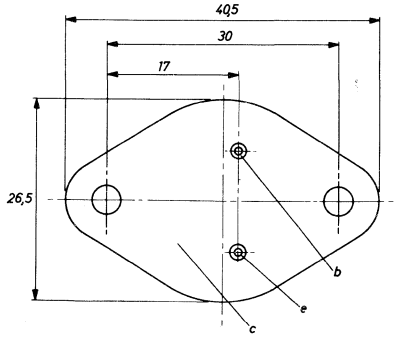

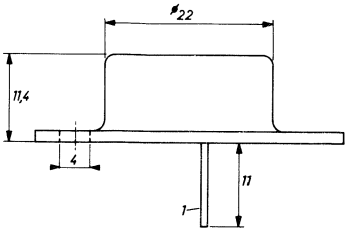

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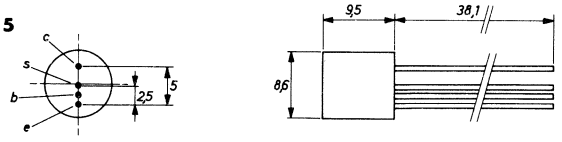

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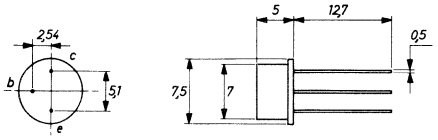

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 680	Tx	P	G	20	20			150	75	18....165		50	15						1
2N 694		P	G	30	15			100	100	10		2				340			3
2N 695	Mo	P	G	15	15			75	100	25		10							5
2N 696	Mo	N	S	60	40	5		2W	200	20.....60	10	150				40		4	5
2N 696A		N	S	60	35			800	300	20.....60		150	15			40			5
2N 697	Mo	N	S	60	40	5		2W	200	40....120	10	150				50		4	5
2N 697A		N	S	60	35			800	300	40....120		150	25			50			5
2N 698	Tx	N	S	120	80			800	200	20.....60		150	15			40			5
2N 699	Mo	N	S	120	80	5		2W	175	40....120	10	150	35....100	5	1	50	250	12	5
2N 699A	Tx	N	S	120	80			800	300	40....120		150	35			50			5
2N 699B		N	S	120	100			870	200	40....120		150	35			60			5
2N 700	Mo	P	G	25	20	0,2	50	75	100				10	6	2	270		108	3
2N 700A	Mo	P	G	25	20	0,2	50	75	100				10	6	2	360		108	3
2N 702	Mo	N	S	25	25	5	50	600	175	20.....60	5	10				150		9	5
2N 703	Mo	N	S	25	25	5	50	600	175	40....100	5	10				70		9	5
2N 705	Mo	P	G	15	15	3,5	50	300	100	40	0,3	10	9	1	10			9	5
2N 705A	Tx	P	G	15	15			150	100	25		10							5
2N 706	Mo	N	S	25	20	3		1W	175	40	1	10	4	15	10	400		9	5
2N 706A	Mo	N	S	25	20	5		1W	175	20.....60	1	10	4	15	10	400		9	5
2N 706B	Mo	N	S	25	20	5		1W	175	20.....60	1	10	4	15	10	400		9	5
2N 706C	Mo	N	S	40	20			360	200	20.....60		10				200			5
2N 707	Mo	N	S	56	28	4		1W	175	12	1	10				350		9	4
2N 707A	Mo	N	S	70	40	5		1,2W	175	9.....50	1	10				350		9	3
2N 708	Mo	N	S	40	15	5		1W	200	30....120	1	10				300		9	5
2N 708A		N	S	50	30			360	200	40....120		10				300			5
2N 709	Tx	N	S	15	6	4		300	200	20....120	0,5	10				600		9	5
2N 709A	Tr	N	S	15	6			300	200	30.....90		10				800			5
2N 710	Rc	P	G	15	15	2	50	300	100	25		10						9	5
2N 710A	Tx	P	G	15	15			150	100	25		10							5
2N 711	Mo	P	G	12	12	1	50	300	100	30	0,5	10	1,5	5	10	150		9	5
2N 711A	Mo	P	G	15	7	1,5	100	300	100	25....150	0,5	10	1,1	0,5	10	150		9	5
2N 711B	Mo	P	G	18	7	2	100	300	100	30....150	0,5	10	1,2	0,5	10	150		9	5
2N 715	Ns	N	S	50	35			500	175	10.....50		15							3
2N 716	Ns	N	S	70	40			500	175	10.....50		15							3
2N 717	Tx	N	S	60	40			400	175	20.....60		150				40			3
2N 718	Tx	N	S	60	40	5	1A	400	175	40....120	10	150				50		9	3
2N 718A	Tx	N	S	75	50	7		500	200	40....120	10	150	30....100	5	1	60		9	3
2N 719	Tx	N	S	120	80			400	175	20.....60		150	15			40			3
2N 719A	Tx	N	S	120	80	7	1A	500	200	20.....60	10	150	15	5	1	40		9	3
2N 720	Tx	N	S	120	80	5		400	175	40....120	10	150	35....100	5	1	50		9	3
2N 720A	Tx	N	S	120	100			500	200	40....120		150	30			50			5
2N 721	Mo	P	S	50	35	5		1,5W	200	45	10	150	50	5	1	50		9	3
2N 721A		P	S	50	50			500	200	20.....45		150	15			50			3
2N 722	Mo	P	S	50	35	5		400	175	30.....90	10	150	25....100	5	1	60		9	1
2N 722A	Tx	P	S	50	50			500	200	30.....90		150	25			60			3
2N 725	Sy	P	G	15	12			150	100	20		10							5
2N 726	Mo	P	S	25	20	5	50	1W	200	15.....45	1	10	15.....90	10	10	140		9	1
2N 727	Mo	P	S	25	20	5	50	1W	200	30....120	1	10	30....240	10	10	140		9	1
2N 728	Tr	N	S	15	15			4	175	20....200		10				100			5
2N 729	Tr	N	S	30	30			4	175	20....200		10				100			5
2N 730	Tx	N	S	60	40			500	175	20.....60		150				40			1
2N 731	Tx	N	S	60	40			500	175	40....120		150				25			1
2N 734	So	N	S	80	60	6	400	500	175	15.....50	5	5	20			30		9	1
2N 734A	So	N	S	80	60	5	400	500	200	15.....50	5	5	20.....50	5	5	30		9	1
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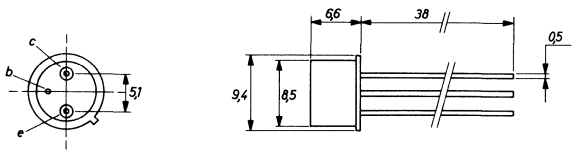

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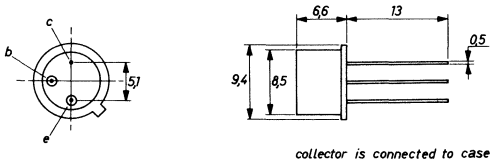
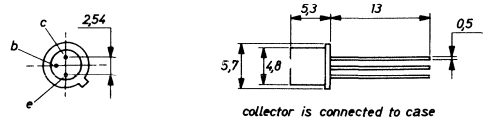


collector is connected to case

9



collector is connected to case

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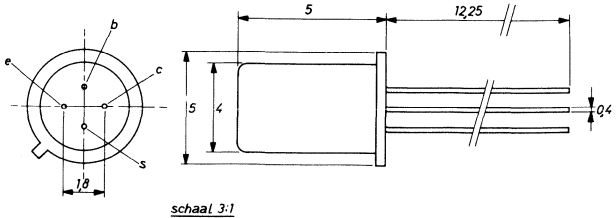

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Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 735A	So	N	S	80	60	6	400	500	200	40....100	5	5	40....100	5	5	60		9	1
2N 736	So	N	S	80	60	5	400	500	175	60....200	5	5	80....200	5	5	100		9	1
2N 736A	So	N	S	80	60	8	400	500	175	60....200	5	5	80....200	5	5	200		9	1
2N 736B	So	N	S	80	60	8	400	500	200	60....200	5	5	80....200	5	5	200		9	1
2N 738	So	N	S	120	80	5	400	175		15.....50	5	5	20.....50	5	5	30		9	1
2N 738A	So	N	S	125	80	8	400	500	200	15.....50	5	5	20.....50	5	5	30		9	1
2N 739	So	N	S	125	80	8	400	500	175	30....100	5	5	40....100	5	5	60		9	1
2N 739A	So	N	S	125	80	8	400	500	200	30....100	5	5	40....100	5	5	60		9	1
2N 740	So	N	S	125	80	5	400	500	200	60....200	5	5	80....200	5	5	200		9	1
2N 740A	So	N	S	125	80	8	400	500	200	60....200	5	5	80....200	5	5	200		9	1
2N 741	Mo	P	G	15	15	1	100	300	100	25	6	5	20	6	5	360		9	3
2N 741A	Mo	P	G	20	20	1	100	300	100	25	6	5	20	6	5	360		9	3
2N 742		N	S	60	60			600	200	25		10							5
2N 742A	Ns	N	S	60	60			500	200	25		10							5
2N 743	Mo	N	S	20	12	5	200	300	200	20.....60	0,35	10				282		9	5
2N 743A		N	S	40	15			360	200	20.....60		10				500			5
2N 744	Mo	N	S	20	12	5	200	1W	200	40....120	0,35	10	4,5	10	10			9	5
2N 745		N	S	45	30			150	175	20.....55		10	19						1
2N 746		N	S	45	30			150	175	45....150		10	39						1
2N 747		N	S	25	25			200	175	30.....90		10							5
2N 748		N	S	30	30			200	175	20.....40		10							5
2N 749		N	S	45	25			200	175	15.....55		10	30						3
2N 751		N	S	20	20			200	175	30....150		10	10						3
2N 752	Ns	N	S	85	45			500	200				40			200			3
2N 753	Mo	N	S	25	20	5		1W	175	40....120	1	10	4	15	10	400		9	5
2N 754	Tr	N	S	60	60			300	175	20.....80		5				30			5
2N 755	Tr	N	S	100	80			300	175	20.....80		5				30			5
2N 756	So	N	S	45	45	6		500	200	12.....22	5	1	12			50		9	1
2N 756A	So	N	S	60	60	6		500	200	12.....22	5	1	12			50		9	1
2N 757	So	N	S	45	45	6		500	200	18.....40	5	1	18			50		9	1
2N 757A	So	N	S	60	60	6		500	200	18.....40	5	1	18			50		9	1
2N 758	So	N	S	45	45	8		500	200	18.....90	5	1	18			50		9	1
2N 758A	So	N	S	60	60	8		500	200	18.....90	5	1	18			50		9	1
2N 758B	So	N	S	60	60	8		500	200	18.....90	5	1	18			50		9	1
2N 759	So	N	S	45	45	8		500	200	36.....90	5	1	36			75		9	1
2N 759A	So	N	S	60	60	8		500	200	36.....90	5	1	36			175		9	1
2N 759B	So	N	S	60	60	8		500	200	36.....90	5	1	36			175		9	1
2N 760	So	N	S	45	45	8		500	200	76....333	5	1	76			60		9	1
2N 760A	So	N	S	60	60	8		500	200	76....333	5	1	76			200		9	1
2N 760B	So	N	S	60	60	8		500	200	50....333	5	1	76			200		9	1
2N 761	Ns	N	S	50	30			500	200	20.....55		10	19						1
2N 762	Ns	N	S	50	30			500	200	45....150		10	39						1
2N 768	Sp	P	G	12	10			35	100	25		2				125			5
2N 769	Sp	P	G	12	7			35	100	25		20				100			5
2N 770		N	S	20	15			150	150	12.....60		20				75			5
2N 771		N	S	20	15			150	150	30....150		20				100			5
2N 772		N	S	25	25			150	150	20		10				75			5
2N 773		N	S	20	15			150	150	4.....16		1,5	6						3
2N 774		N	S	20	15			150	150	7.....30		1,5	11						3
2N 775		N	S	20	15			150	150	20.....80		1,5	28						3
2N 776		N	S	20	15			150	150	4.....16		1,5	6						3
2N 777		N	S	20	15			150	150	7.....30		1,5	11						3
2N 778		N	S	20	15			150	150	20.....80		1,5	28						3
2N 779		P	G	15	15			60	100	50....200		10				320			5
2N 779A	Sp	P	G	15	15			60	100	50....200		10				320			5
2N 779B		P	G	15	15			150	100	50....200		10				320			5
2N 780	Tx	N	S	45	45			1W	175	35....140		0,5				60			1
2N 781	Sy	P	G	15	15			150	100	25		10							5
2N 782	Sy	P	G	12	12			150	100	20		10							5
2N 783	Sy	N	S	40	20			300	175	20.....60		10				200			5

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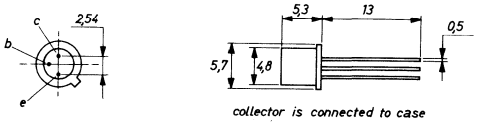

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 784	Sy	N	S	30	15			300	175	25		10				200			5
2N 785		P	G	12	12			50	85				40						1
2N 789		N	S	45	30			150	175				9						1
2N 790		N	S	45	30			150	175				18						1
2N 791		N	S	45	30			150	175				18						1
2N 792		N	S	45	30			150	175				36						1
2N 793		N	S	45	30			150	175				76						1
2N 794	Rc	P	G	13		1	100	120	85	30		10				25		9	5
2N 795	Rc	P	G	13		4	100	120	85	30		10				35		9	5
2N 796	Rc	P	G	13		4	100	120	85	50		10				50		9	5
2N 797	Tx	N	G	20	7	4	150	150	100	40	0,25	10				600		9	5
2N 799		P	G	25	12			75	85	30		12							5
2N 800		P	G	25	12			75	85	30									5
2N 801		P	G	30	18			75	85	30.....60									5
2N 802		P	G	30	18			75	85	30.....60									5
2N 803		P	G	30	15			75	85	40.....80									5
2N 804		P	G	30	15			75	85	40.....80									5
2N 805		P	G	30	12			75	85	60									5
2N 806		P	G	30	12			75	85	60									5
2N 807		P	G	25	14			70	85	40		20							5
2N 808		P	G	25	14			70	85	40		20							5
2N 809		P	G	30	15			75	85	25....110		25	30						3
2N 810		P	G	30	15			75	85	25....110		25	30						3
2N 811		P	G	30	12			75	85	45....180		45	50						3
2N 812		P	G	30	12			75	85	45....180		45	50						3
2N 813		P	G	30	10			75	85	55....220		55	70						3
2N 814		P	G	30	10			75	85	55....220		55	70						3
2N 815		N	G	25	15			75	85	60....180		30							5
2N 816		N	G	25	15			75	85	60....180		30							5
2N 817		N	G	30	15			75	85	20		150							5
2N 818		N	G	30	15			75	85	20		50							5
2N 819		N	G	30	20			75	85	30		50							5
2N 820		N	G	30	20			75	85	30		50							5
2N 821		N	G	30	25			75	85	40		50							5
2N 822		N	G	30	25			75	85	40		50							5
2N 823		N	G	25	12			75	85	40		20							5
2N 824		P	G	30	18			70	85										3
2N 825		P	G	30	20			70	85	40									5
2N 826		P	G	30	20			70	85	20.....40									5
2N 827	Mo	P	G	20	20	4	100	150	150	150	0,3	10	3,5	1	10			9	5
2N 828	Mo	P	G	15	15	2,5	200	300	100	40	0,3	10	4	1	10	400		9	5
2N 828A	Mo	P	G	15	15	2,5	200	300	100	40	0,3	10	40	1	150	400		9	5
2N 829	Mo	P	G	15	15	2,5	200	300	100	80	0,3	10	80	1	150	400		9	5
2N 834	Mo	N	S	40	30	5	200	1W	175	25	1	10				350		9	5
2N 834A		N	S	40	30			360	200	25		10				500			5
2N 835	Mo	N	S	25	20	3	200	1W	175	20	1	10				300		9	5
2N 837		P	G	12	12			150	100	30		10							5
2N 838	Mo	P	G	30	30	2,5	100	150	150	70	0,3	10	4,5	1	10			9	5
2N 839	Tr	N	S	45	45			300	175	15.....50		10	20			30			3
2N 840	Mo	N	S	45	45	2	1A	500	200	30....100	5	10	40.....90	5	1	1,5		9	3
2N 841	Mo	N	S	45	45	2	1A	500	200	60....400	5	10	80....330	5	1	2		9	3
2N 842	Tr	N	S	45	45			300	175	20.....55		10	20			30			3
2N 843	Tr	N	S	45	45			300	175	45....150		10	40			40			3
2N 844	Tr	N	S	60	60			300	175	40....120		5				50			3
2N 845	Tr	N	S	100	80			300	175	40....120		5				50			3
2N 846		P	G	15	15			60	100	25....125		10				320			5
2N 846A	Sp	P	G	15	15			60	100	25....125		10				320			5
2N 846B		P	G	15	15			150	100	25....125		10				320			5
2N 847		N	S	20	15			200	175										5
2N 848		N	S	40	25			200	175										5

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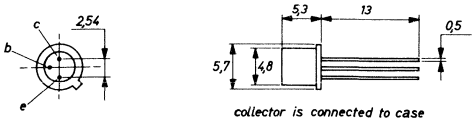

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 849	Tx	N	S	25	15			300	175	20.....60		10				600			5
2N 850	Tx	N	S	25	15			300	175	40....120		10				600			5
2N 851	Tx	N	S	20	12			300	175	20.....60		10				300			5
2N 852	Tx	N	S	20	12			300	175	40....120		10				300			5
2N 858	Sp	P	S	40	40			150	140	10.....60		5	15			5			5
2N 859	Sp	P	S	40	40			150	140	25....100		5	30			6			5
2N 860	Sp	P	S	25	25			150	140	10.....40		5	15			6,5			5
2N 861	Sp	P	S	25	25			150	140	25.....75		5	30			7,5			5
2N 862	Sp	P	S	15	15			150	140	12.....48		5	20			8			5
2N 863	Sp	P	S	15	15			150	140	25....100		5	40			10			5
2N 864	Sp	P	S	6	6			150	140	20....100		5	25			16			5
2N 864A		P	S	6	6			300		20....250		5	25			16			5
2N 865	Sp	P	S	10	6			150	140	45....125		5	100			24			5
2N 865A		P	S	10	10			300		45....400		5	100			24			5
2N 866		N	S	30	20			500	175	15.....45		150				40			5
2N 867		N	S	30	20			500	175	30.....90		150				50			5
2N 869	Mo	P	S	25	18	5		1W	200	20....120	5	10	3	15	10			9	3
2N 869A	Mo	P	S	25	18	5	200	1W	200	40....120	5	10				400			5
2N 870	Tx	N	S	100	80			500	200	40....120		150	30			50			3
2N 871	Tx	N	S	100	80			500	200	100...300		150	50			60			3
2N 902		N	S	45	30			150	175				9						1
2N 903		N	S	45	30			150	175				18						1
2N 904		N	S	45	30			150	175				18						1
2N 905		N	S	45	30			150	175				36						1
2N 906		N	S	45	30			150	175				76						1
2N 907		N	S	45	30			150	175	20.....55		10	19			12			1
2N 908		N	S	45	30			150	175	45....150		10	39			25			1
2N 909	Fa	N	S	60	30			400	175	110...350		50	40			50			1
2N 910	Mo	N	S	100	60	7		2W	200	35	10	0,1	76....200	5	1	60		9	1
2N 911	Mo	N	S	100	60	7		2W	200	20	10	0,1	36.....90	5	1	50		9	1
2N 912	Fa	N	S	100	80			500	200	15		10	18			40			1
2N 914	Mo	N	S	40	15	5	150	1W	200	30....120	1	10				300		9	5
2N 914A		N	S	40	20			360	200	30....120		10				300			5
2N 915	Mo	N	S	70	50	5		1W	200	50....200	5	10	40....200	5	1			9	3
2N 915A		N	S	70	50			1W	200	50....250		5	50			600			4
2N 916	Mo	N	S	45	25	5		1W	200	50....200	1	10	40....200	5	1			9	3
2N 916A		N	S	45	25			360	200	50....200		10	50			300			3
2N 916B		N	S	60	30			1W	200	50....200		10	50			500			4
2N 917	Rc	N	S	30	15	3		200	200	20....200	1	3	5	10	4	500		30	3
2N 917A		N	S	30	15	3		200	200	20....200	1	3	5	10	4	600		30	3
2N 918	Mo	N	S	30	15	3	50	300	200	20....200	1	3						30	3
2N 919		N	S	25	15			360	200	20.....60		10				200			5
2N 920		N	S	25	15			360	200	40....120		10				200			5
2N 921		N	S	50	20			360	200	20.....60		10				200			5
2N 922		N	S	50	20			360	200	40....120		10				200			5
2N 923	So	P	S	40	25	40		250	200				12.....30	6	1			9	1
2N 924	So	P	S	40	25	40		250	200				24.....70	6	1			9	1
2N 925	So	P	S	50	40	50		250	200				10.....24	6	1			9	1
2N 926	So	P	S	50	40	50		250	200				20.....50	6	1			9	1
2N 927	So	P	S	70	60	70		250	200				8.....22	6	1			9	1
2N 928	So	P	S	70	60	70		250	200				18.....50	6	1			9	1
2N 929	Mo	N	S	45	45	5	30	2W	175	350	5	10	60....350	5	1	30		9	1
2N 929A	Mo	N	S	60	60	6	30	2W	175	600	5	10	150...600	5	1	45		9	1
2N 930	Mo	N	S	45	45	5	30	2W	175	350	5	10	60....350	5	1	30		9	1
2N 930A	Mo	N	S	60	60	6	30	2W	175	600	5	10	150...600	5	1	45		9	1
2N 930B	So	N	S	60	45	6	30	500		100...300	5	0,01	150			45		9	1
2N 934	Rc	P	G	13	12			150	85	40		40				35			5
2N 935	So	P	S	50	40	20		250	160				9.....22	0,5				9	1
2N 936	So	P	S	50	35	20		250	160				18.....44	0,5				9	1
2N 937	So	P	S	50	30	20		250	160				36.....88	0,5				9	1

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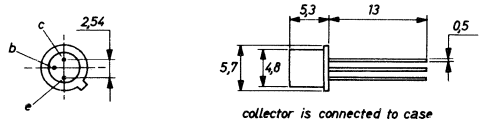

collector is connected to case

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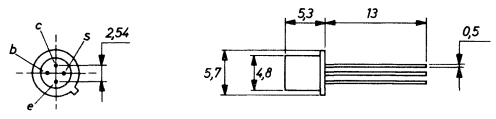

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
2N 938	So	P	S	40	35	40		250	175	9.....22	6	1						9	1
2N 939	So	P	S	40	35	40		250	175	18.....44	6	1						9	1
2N 940	So	P	S	40	35	40		250	175	36.....88	6	1						9	1
2N 941	So	P	S	25	8	25		250	175	10		1	25			16		9	5,2
2N 942	So	P	S	25	8	25		250	175	10		1	25			10		9	5,2
2N 943	So	P	S	40	18	40		250	175	10			25					9	5,2
2N 944	So	P	S	40	18	40		250	175	10			25					9	5,2
2N 945	So	P	S	50	50	50		250	175	10			25					9	5,2
2N 946	So	P	S	80	80	80		250	175	10			25					9	5,2
2N 947		N	S	20	15			360	150	20		10				200			5
2N 955	Rc	N	G	12	8	2	100	150	100	30		30						9	5
2N 956	Mo	N	S	75	50	7		2W	200	75	10	10	50....200	5	1	300		9	3
2N 957	Tr	N	S	40	20			250	150	45		10				200			3
2N 958		N	S	25	15			250	150	20		10				200			5
2N 959		N	S	25	15			250	150	40		10				200			5
2N 960	Mo	P	G	15	15	2,5		300	100	40	0,3	10				460		9	5
2N 961	Mo	P	G	12	12	2		300	100	40	0,3	10				460		9	5
2N 962	Mo	P	G	12	12	1,3		300	100	40	0,3	10				460		9	5
2N 963	Mo	P	G	12	12			300	100	20	0,3	10				300		9	5
2N 964	Mo	P	G	15	15	2,5		300	100	70	0,3	10				460		9	5
2N 964A	Mo	P	G	15	7	2,5	100	300	100	40	0,3	10	4,6	1	20	460		9	5
2N 965	Mo	P	G	12	12	2		300	100	70	0,3	10				460		9	5
2N 966	Mo	P	G	12	12	1,3		300	100	70	0,3	10				460		9	5
2N 967	Mo	P	G	12	12			300	100	40	0,3	10				300		9	5
2N 968	Mo	P	G	15	15	2,5		300	100	35	0,5	10				320		9	5
2N 969	Mo	P	G	12	12	2		300	100	35	0,5	10				320		9	5
2N 970	Mo	P	G	12	12	1,3		300	100	35	0,5	10				320		9	5
2N 971	Mo	P	G	7	7	1,3		300	100	35	0,5	10				320		9	5
2N 972	Mo	P	G	15	15	2,5		300	100	75	0,5	10				320		9	5
2N 973	Mo	P	G	12	12	2		300	100	75	0,5	10				320		9	5
2N 974	Mo	P	G	12	12	1,3		300	100	75	0,5	10				320		9	5
2N 975	Mo	P	G	7	7	1,3		300	100	75	0,5	10				320		9	5
2N 976	Sp	P	G	15	10			100	100	30		20				249			5
2N 977		P	G	15	10			150	100	50		40				400			5
2N 978	Mo	P	S	30	20	6	600	1W	200	15.....60	10	150	2	10	50			9	3
2N 979	Sp	P	G	20	15			60	100	30		10				100			5
2N 980	Sp	P	G	20	12			60	100	30		10				100			5
2N 981	Ns	N	S	80	80			500	200				36						1
2N 982	Sp	P	G	20	15			60	100	50		10							5
2N 983	Sp	P	G	15	15			60	100	40		10							5
2N 984	Sp	P	G	15	10			60	100	50		10							5
2N 985	Mo	P	G	15	7	3	200	300	100	40	0,25	10						9	5
2N 987		P	G	40	40			100	100	40....250		1	40						3
2N 988		N	S	20	10			300	175	20....120		10				300			3
2N 989		N	S	20	10			300	175	20....120		10				300			3
2N 990		P	G	20	20			67	75	40		1	40			44			3
2N 991		P	G	20	20			67	75	40		1	40			44			3
2N 992		P	G	20	20			67	75	40		1	40						3
2N 993		P	G	20	20			67	75	40		1	40			44			3
2N 994		P	G	15	6			200	150	45....140		10							5
2N 995	Mo	P	S	20	15	4		360	200	35....140	1	20	3	10	10	100		9	3
2N 955A	Fa	P	S	20	15			360	200	35....140		20				100			3
2N 996	Mo	P	S	15	12	4	200	1W	200	35	1	20				100		9	3
2N 1000		N	G	40	25			150	100	40		10							5
2N 1003		P	G	35	20			120	100			10							3
2N 1004		P	G	35	20		120	100					10						3
2N 1005		N	S	15	15			150	175	10.....25		10							1
2N 1006		N	S	15	15			150	175	25....150		10							1
2N 1007		P	G	25	20			35W	95	50....250		1A	25			0,06			2
2N 1008	Mo	P	G	20	20	15	300	200	100				40....150	5	10			4	1

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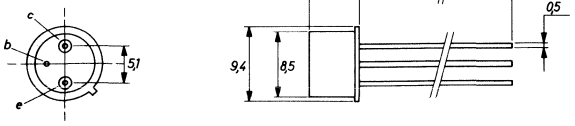

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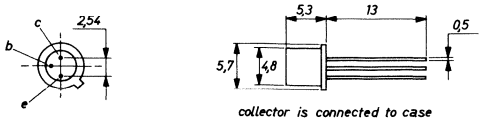

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1008A	Mo	P	G	40	40	15	300	200	100				40....150	5	10			4	1
2N 1009		P	G	35	35			400	85				40						1
2N 1010	Rc	N	G	10	10		2	20	55				35	3,5	0,3			1	1
2N 1011	Mo	P	G	80	40	40	5A	90W	100	30.....75	2	3A						3	2
2N 1012		N	G	40	22			150	100	40		100							5
2N 1014	Rc	P	G	100	65	60	10A	50W	100	20.....50		4A						40	2
2N 1015	Wh	N	S	30	30			150W	150	10		2A							5
2N 1015A	Wh	N	S	60	60			150W	150	10		2A							5
2N 1015B	Wh	N	S	100	100			150W	150	10		2A							5
2N 1015C	Wh	N	S	150	150			150W	150	10		2A							5
2N 1015D	Wh	N	S	200	200			150W	150	10		2A							5
2N 1015E	Wh	N	S	250	250			150W	150	10		2A							5
2N 1015F	Wh	N	S	300	300			150W	150	10		2A							5
2N 1016	Wh	N	S	30	30			150W	150	10		5A							5
2N 1016A	Wh	N	S	60	60			150W	150	10		5A							5
2N 1016B	Wh	N	S	100	100			150W	150	10		5A							5
2N 1016C	Wh	N	S	150	150			150W	150	10		5A							5
2N 1016D	Wh	N	S	200	200			150W	150	10		5A							5
2N 1016E	Wh	N	S	250	250			150W	150	10		5A							5
2N 1016F	Wh	N	S	300	300			150W	150	10		5A							5
2N 1017		P	G	30	10			150	85	70		20							5
2N 1018		P	G	30	6			200	100	70		70							5
2N 1021	Tx	P	G	100	50	30	7A	150W	95	23.....70	1,5	1A				0,43		3	2
2N 1021A	Tx	P	G	100	50	30	7A	150W	100	30.....90	1,5	5A				0,2		3	2
2N 1022	Tx	P	G	120	55	30	7A	150W	95	23.....70	1,5	5A				0,43		3	2
2N 1022A	Tx	P	G	120	55	30	7A	150W	100	30.....90	1,5	5A				0,2		3	2
2N 1023	Rc	P	G	40	40	0,5	10	120	100	20....175	12	1,5					620	15	1
2N 1024	So	P	S	18	15	18		250	175				9	6	1			4	1
2N 1025	So	P	S	40	35	40		250	175				9.....22	6	1			4	1
2N 1026	So	P	S	40	35	40		250	175				18.....44	6	1			4	1
2N 1027	So	P	S	18	15	18		250	175				18	6	1			4	1
2N 1028	So	P	S	12	10	12		250	175				9	6	1	7,2		4	1
2N 1029		P	G	50	20			90W	100	20.....60		10A							2
2N 1029A		P	G	60	30			90W	100	20.....60		10A							2
2N 1029B		P	G	90	60			90W	100	20.....60		10A							2
2N 1029C		P	G	100	70			90W	100	20.....60		10A							2
2N 1030		P	G	50	20			90W	100	50....100		10A							2
2N 1030A		P	G	60	30			90W	100	50....100		10A							2
2N 1030B		P	G	90	60				100	50....100		10A							2
2N 1030C		P	G	100	70				100	50....100		10A							
2N 1031	So	P	G	50	30	25	10A	90W	100	20.....60	2	10A	10					3	2
2N 1031A	So	P	G	60	40	25	10A	90W	100	20.....60	2	10A	10					3	2
2N 1031B	So	P	G	90	70	25	10A	90W	100	20.....60	2	10A	10					3	2
2N 1031C	So	P	G	100	80	25	10A	90W	100	20.....60	2	10A	10					3	2
2N 1032	So	P	G	50	30	25	10A	90W	100	50....100	2	10A	25					3	2

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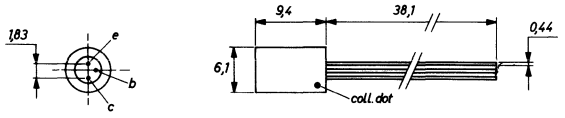

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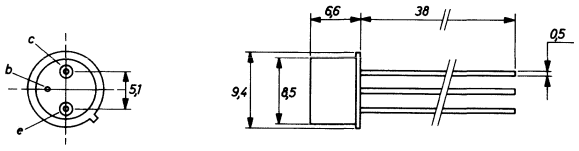

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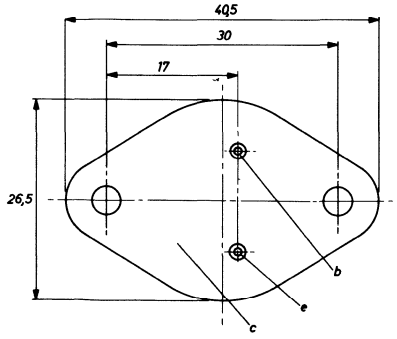

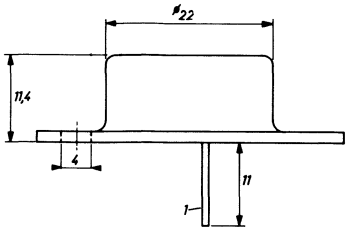

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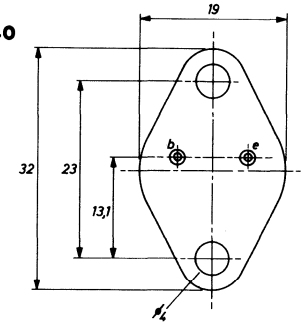

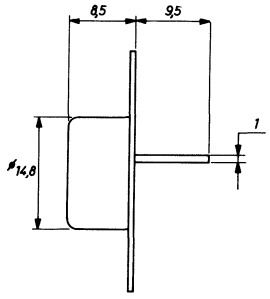

collector is connected to case

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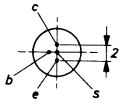

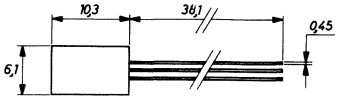

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 1032A	So	P	G	60	40	25	10A	90W	100	50....100	2	10A	25					3	2
2N 1032B	So	P	G	90	70	25	10A	90W	100	50....100	2	10A	25					3	2
2N 1032C	So	P	G	100	80	25	10A	90W	100	50....100	2	10A	25					3	2
2N 1034	So	P	S	50	40	20		250	160				9.....22	6	1			9	1
2N 1035	So	P	S	50	35	20		250	160				18.....42	6	1			4	1
2N 1036	So	P	S	50	30	20		250	160				34.....88	6	1			4	1
2N 1037	So	P	S	50	35	20		250	160				9.....42	6	1			4	1
2N 1038	Mo	P	G	40	30	20	3A	20W	100	33....220	0,5	50	18.....72	1,5	500				2
2N 1039	Mo	P	G	60	40	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500				2
2N 1040	Mo	P	G	80	50	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500			12	2
2N 1041	Mo	P	G	100	60	20	3A	20W	100	33....200	0,5	50	18.....72	1,5	500			12	2
2N 1042	Mo	P	G	40	30	20	3A	20W	100	20.....60	1	3A	25....100	1,5	500			112	2
2N 1043	Mo	P	G	60	40	20	3A	20W	100	20.....60	1	3A	25....100	1,5	500			112	2
2N 1044	Mo	P	G	80	50	20	3A	20W	100	20.....60	1	3A	25....100	1,5	500			112	2
2N 1045	Mo	P	G	100	60	20	3A	20W	100	20.....60	1	3A	25....100	1,5	500			112	2
2N 1046	Tx	P	G	100	50	2	12A	50W	100	40	1,5	5A				15		3	4
2N 1046A	Tx	P	G	130	50			50W	100	40		5A				15			4
2N 1046B	Tx	P	G	130	50			50W	100	20		10A				15			4
2N 1047	Tx	N	S	80	80	6	500	40W	200	12.....36	10	500					175	25	2
2N 1047A	Tx	N	S	80	80	10	500	40W	200	12.....36	10	500					175	25	2
2N 1047B	Tx	N	S	80	80	10	750	40W	200	12.....36	10	500					175	25	2
2N 1047C		N	S	80	80	10	750	40W	200	12.....36	10	500							2
2N 1048	Tx	N	S	120	120	6	500	40W	200	12.....36	10	500					175	25	2
2N 1048A	Tx	N	S	120	120	10	500	40W	200	12.....36	10	500					175	25	2
2N 1048B	Tx	N	S	120	120	10	750	40W	200	12.....36	10	500					175	25	2
2N 1048C		N	S	120	120	10	750	40W	200	12.....36	10	500							2
2N 1049	Tx	N	S	80	80	6	500	40W	200	30.....90	10	500					175	25	2
2N 1049A	Tx	N	S	80	80	10	500	40W	200	30.....90	10	500					175	25	2
2N 1049B	Tx	N	S	80	80	10	750	40W	200	30.....90	10	500					175	25	2
2N 1049C		N	S	80	80			40W	200	30.....90		500							2
2N 1050	Tx	N	S	120	120	10	500	40W	200	30.....90	10	500					175	25	2
2N 1050A	Tx	N	S	120	120	10	500	40W	200	30.....90	10	500					175	25	2
2N 1050B	Tx	N	S	120	120	10	750	40W	200	30.....90	10	500					175	25	2
2N 1050C		N	S	120	80			40W	200	30.....90		500							2
2N 1051	We	N	S	40	40			500	150	25		50	30			80			3
2N 1052	Tr	N	S	200	200			0,6	200	20.....80		200							3
2N 1054	Tr	N	S	125	115			800	200	20		200	15			8			3
2N 1055	Tr	N	S	100	100			5,5	200	20.....80		50				3			3
2N 1056	Ge	P	G	70	50			240	100	18.....43		20							1
2N 1057	Ge	P	G	45	45			240	100	34.....90		20							1

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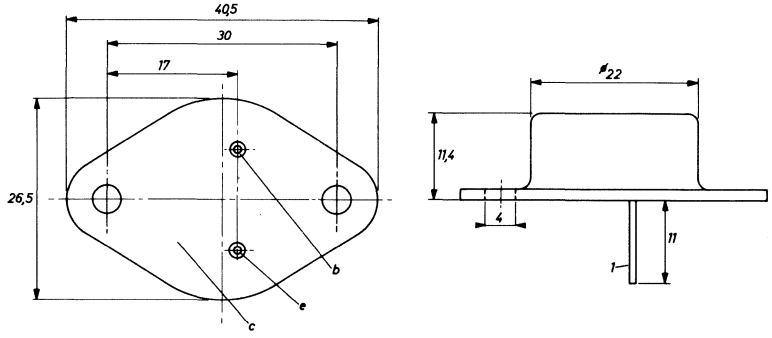

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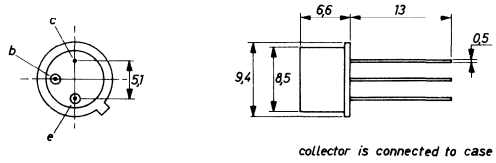

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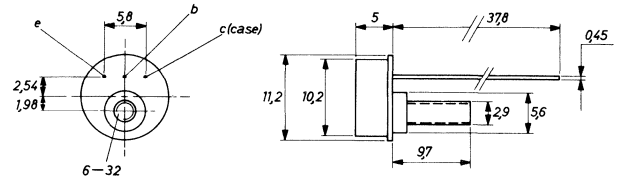

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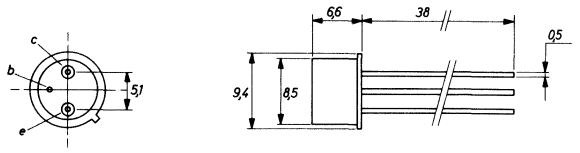

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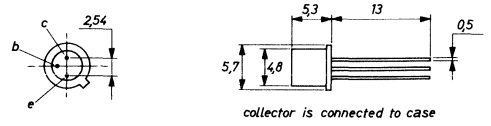

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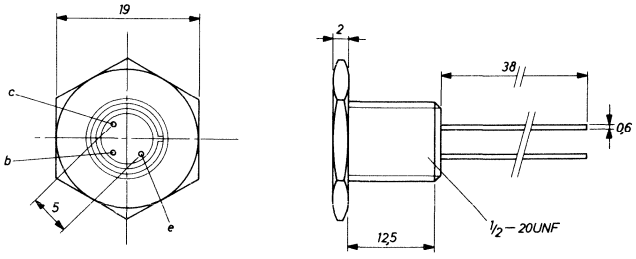

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1058	Sy	N	G	20	20			50	75										
2N 1059	Sy	N	G	40	15			180	75										1
2N 1060	We	N	S	40	40			250	150	17		5							5
2N 1066	Rc	P	G	40	40	0,5	10	120	100	20....175	12	1,5						10	5
2N 1067	Rc	N	S	60	30	12	500	5W	175	15.....75		200						6	5
2N 1068	Rc	N	S	60	30	12	1,5A	10W	175	15.....75		750						6	5
2N 1069	Rc	N	S	60	45		4A	50W	175	20.....50		1,5A						3	5
2N 1070	Rc	N	S	60	45	9	4A	50W	175	20.....50		1,5A						3	5
2N 1072	We	N	S	75	30			2W	150	20		750							5
2N 1073	Mo	P	G	40	40	1,5	10A	85W	110	20.....60	2	5A	15	12	500			14	2
2N 1073A	Mo	P	G	80	80	1,5	10A	85W	110	20.....60	2	5A	15	12	500			14	2
2N 1073B	Mo	P	G	120	120	1,5	10A	85W	110	20.....60	2	5A	15	12	500			14	2
2N 1074		N	S	50	40			250	160				9						1
2N 1075		N	S	50	35			250	160				18						1
2N 1076		N	S	50	30			250	160				36						1
2N 1077		N	S	50	35			250	160				9						1
2N 1078		P	G	60	60			20W	85	40		500							2
2N 1079	Tr	N	S	60	60			60W	200	20.....80		1A	20			10			4
2N 1080	Tr	N	S	60	60			60W	200	20.....80		2A	20			10			4
2N 1081		N	S	40	40			6	200	20....100		500							5
2N 1082		N	S	25	25			200	200	10.....50		10	10			17			3
2N 1086	Ge	N	G	9	9			65	85	17....195		1							3
2N 1086A	Ge	N	G	9	9			65	85	17....195		1							3
2N 1087	Ge	N	G	9	9			65	85	17....197		1							3
2N 1090	Rc	N	G	25	15	20	400	120	85	30	0,2	20						4	5
2N 1091	Rc	N	G	25	12			120	85	40	0,2	20						4	5
2N 1092	Rc	N	G	60	30	12	500	2W	175	15.....75		200						4	5
2N 1093	Tx	P	G	30	15			150	95	50....150		20	40						1
2N 1094	We	P	G	30	15			150	100	15		4				560			3
2N 1097	Ge	P	G	18	18			200	100	34.....90		20							1
2N 1098	Ge	P	G	18	18			200	100	25.....90		20							1
2N 1099	Mo	P	G	80		40		170W	110	35.....70	2	5A						11	2
2N 1100	Mo	P	G	100		80			100	25.....50	2	5A						11	2
2N 1101	Sy	N	G	20	15			180	75	25.....50		35							1
2N 1102	Sy	N	G	40	25			180	75	25.....50		35							1

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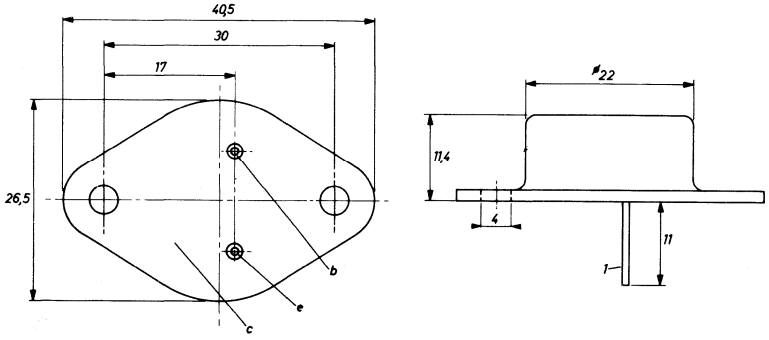

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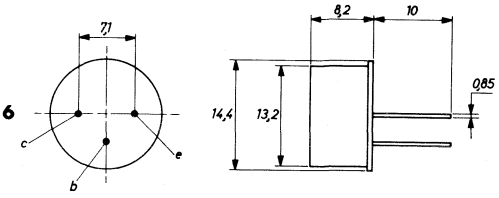

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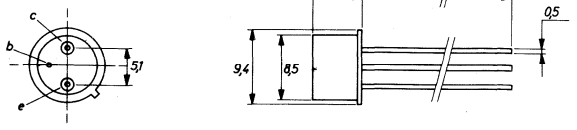

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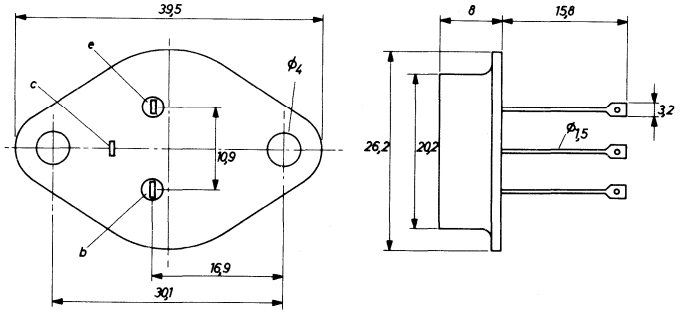

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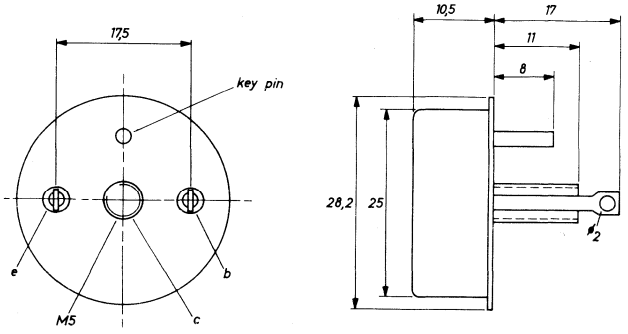

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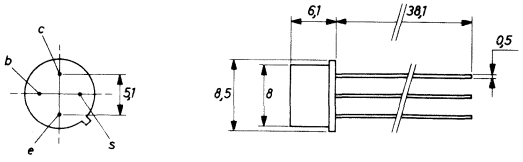

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1103		N	S	45	35			125	150	30.....65		10	20						1
2N 1104		N	S	45	35			125	150	45....150		10	40						1
2N 1105		N	S	60	60			800	200	12.....36		200							1
2N 1106		N	S	100	100			800	200	12.....36		200							1
2N 1107	Tx	P	G	16				30											3
2N 1108	Tx	P	G	16				30											3
2N 1109	Tx	P	G	16				30											3
2N 1110	Tx	P	G	16				30											3
2N 1111	Tx	P	G	16				30											3
2N 1114	Sy	N	G	25	15			150	100	40....180		20							5
2N 1115		P	G	20	15			150	85										5
2N 1116	Tr	N	S	60	60			600	200	40....150		500				6			3
2N 1117	Tr	N	S	60	60			600	200	40....150		200				4			3
2N 1118	Sp	P	S	25	25			150	140				15						3
2N 1118A	Sp	P	S	25	25			150	140	25		15	15						3
2N 1119	Sp	P	S	10	10			150	140	15		15				7,2			5
2N 1120	Mo	P	G	80	40	40		90W	100	20.....50	2	10A						14	2
2N 1121	Ge	N	G	15	15			65	85	34		1							3
2N 1122	Sp	P	G	12	11			25	100	25		10	35						5
2N 1122A	Sp	P	G	15	14			25	100	25		10	35						5
2N 1123		P	G	45	40			10	100	40		100							5
2N 1124		P	G	40	35			300	85				40						1
2N 1125		P	G	40	40			300	85	50....150		500							5
2N 1126		P	G	40	35			1W	85				40						5
2N 1127		P	G	40	40			1W	85	50....150		500							5
2N 1128		P	G	25	18			150	85				70						1
2N 1129		P	G	25	25			150	85	100...200		100							1
2N 1130		P	G	30				150	85	50....165		100							1
2N 1132	Mo	P	S	50	35	5	600	2W	175	20.....45	10	150	15.....50	5	1			4	5
2N 1131A		P	S	60	40			600	175	20.....45		150	15			50			5
2N 1132	Mo	P	S	50	35	5		2W	175	30.....90	10	150	25....100	5	1A	60			5
2N 1132A	Mo	P	S	60	40	5	600	2W	175	30.....90	10	150	25.....75	5	1A	60			5
2N 1132B	Sy	P	S	70	45			600	175	30.....90		150	25			60			5
2N 1135		P	S	12	12			100	140							5,6			5
2N 1135A		P	S	12	12			100	140							5,6			5
2N 1136	So	P	G	60	35	15	3A		100	50....100	5	3A					45	3	2
2N 1136A	So	P	G	90	55	15	3A		100	50....100	5	3A					45	3	2
2N 1136B	So	P	G	100	75	15	3A		100	50....100	5	3A					45	3	2
2N 1137	So	P	G	60	25	15	3A		100	75....150	5	3A					45	3	2
2N 1137A	So	P	G	90	55	15	3A		100	75....150	5	3A					45	3	2
2N 1137B	So	P	G	100	65	15	3A		100	75....150	5	3A					45	3	2
2N 1138	So	P	G	60	40	15	3A		100	100...200	5	3A					45	3	2
2N 1138A	So	P	G	90	70	15	3A		100	100...200	5	3A					45	3	2
2N 1138B	So	P	G	100	80	15	3A		100	100...200	5	3A					45	3	2
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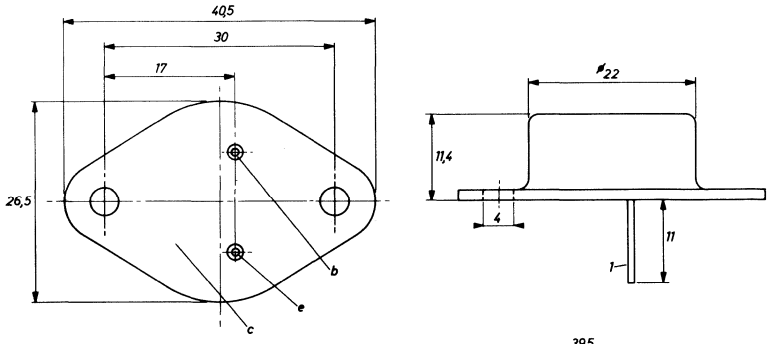

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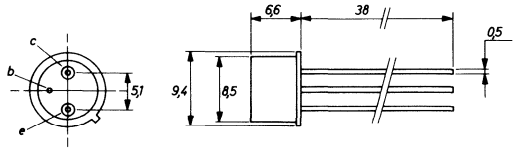

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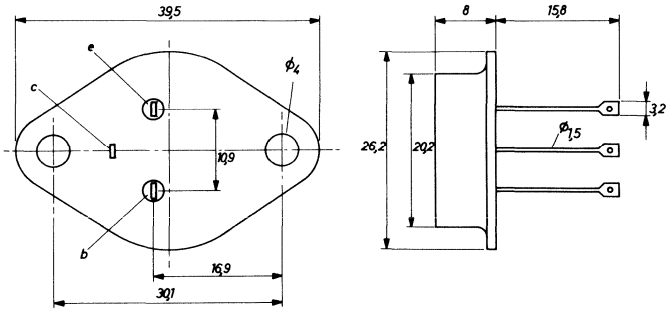

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1141	Mo	P	G	35		1	100	750	100	25	10	10	18	10	10	500		4	3
2N 1141A		P	G	35	25			750	100	15		10				500			3
2N 1142	Mo	P	G	30		0,7	100	750	100	25	10	10	18	10	10	400		4	3
2N 1142A		P	G	30	25			750	100	15						400			3
2N 1143	Mo	P	G	25		0,5	100	750	100	25	10	10	18	10	10	400		4	3
2N 1143A		P	G	30	25			750	100	15		10				400			3
2N 1144	Ge	P	G	16	16			175	85	34.....90		20							1
2N 1145	Ge	P	G	16	16			175	85	25.....90		20							1
2N 1146	It	P	G	40	20			87W	95	60....160		5A							5
2N 1146A	It	P	G	60	30			87W	95	60....150		5A							5
2N 1146B	It	P	G	80	40			87W	95	60....150		5A							5
2N 1146C	It	P	G	100	50			87W	95	60....150		5A							5
2N 1147	So	P	G	40	30	30	5A	87W	95	60....150	2	5A					45	3	5
2N 1147A	So	P	G	60	45	30	5A	87W	95	60....150	2	5A					45	3	5
2N 1147B	So	P	G	80	60	30	5A	87W	95	60....150	2	5A					45	3	5
2N 1147C	So	P	G	100	75	30	5A	87W	95	60....150	2	5A					45	3	5
2N 1149	Tx	N	S	45				150	175	9.....20		25							1
2N 1150	Tx	N	S	45				150	175	18.....40		25							1
2N 1151	Ns	N	S	45				150	175	18.....90		25							1
2N 1152	Ns	N	S	45				150	175	36.....90		25							1
2N 1153	Ns	N	S	45				150	175	76....333		25							1
2N 1154	Ns	N	S	50				750	150	9		60							1
2N 1155	Ns	N	S	80				750	150	9		50							1
2N 1156	Ns	N	S	120				750	150	9		40							1
2N 1157	So	P	G	60	45		45A	187W	100	38.....84		10A				0,75			5
2N 1157A	So	P	G	80	50		45A	187W	100	38.....84		10A				0,75			5
2N 1158		P	G	20	20			60	100				5,7						3
2N 1158A		P	G	20	20			75	100				9						3
2N 1159	So	P	G	80	60	20	3A	35W	95	30.....75	2	3A					45	3	5
2N 1160	So	P	G	80	60	20	5A	35W	95	20.....50	2	5A					45	3	5
2N 1162	Mo	P	G	50	35	25		106W	110	65....125	2	5A						3	5
2N 1162A	Mo	P	G	50	35	25		106W	110	65	2	5A						3	5
2N 1163	Mo	P	G	50	35	25		106W	110	65....125	2	5A						14	5
2N 1163A	Mo	P	G	50	35	25		106W	110	65....125	2	5A						14	5
2N 1164	Mo	P	G	80	60	40		106W	110	15....125	2	5A						3	5
2N 1164A	Mo	P	G	80	60	40		106W	110	65....125	2	5A						3	5
2N 1165	Mo	P	G	80	60	40		106W	110	15....125	2	5A						14	5
2N 1165A	Mo	P	G	80	60	40		106W	110	65....125	2	5A						14	5
2N 1166	Mo	P	G	100	75	50		106W	110	15....125	2	5A						3	5
2N 1166A	Mo	P	G	100	75	50		106W	110	65....125	2	5A						3	5
2N 1167	Mo	P	G	100	75	50		106W	110	15....125	2	5A						14	5
2N 1167A	Mo	P	G	100	75	50		106W	110	65....125	2	5A						14	5
2N 1168	So	P	G	50	30	20	1A	45W	95	70....110	2	1A					45	3	2
2N 1169	Rc	N	G	40	20	25	400	120	71	20		200						4	5
2N 1170	Rc	N	G	40	20	40	400	120	71	20		200						4	5
2N 1171		P	G	30	12			170	85	30		30							5
2N 1172		P	G	40	30				95	30.....90		100							5
2N 1173		N	G	35	20			250	100	50....200		10	50						5
2N 1174		P	G	35	20			250	100	50....200		10	50						5
2N 1175	Ge	P	G	35	25	10	200	200	85	70....140	1	20	60....120					4	1

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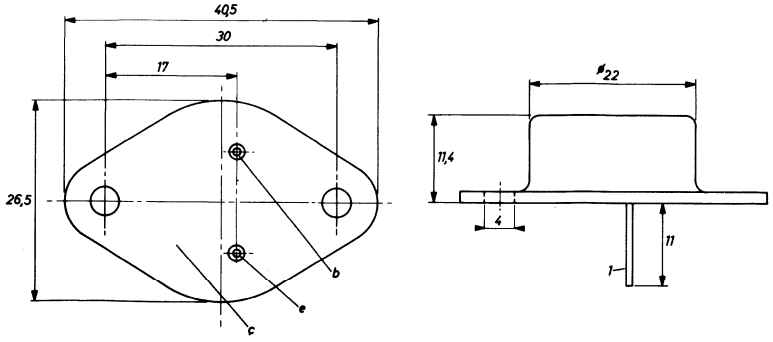

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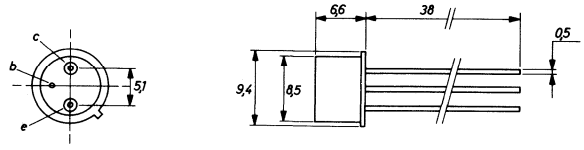

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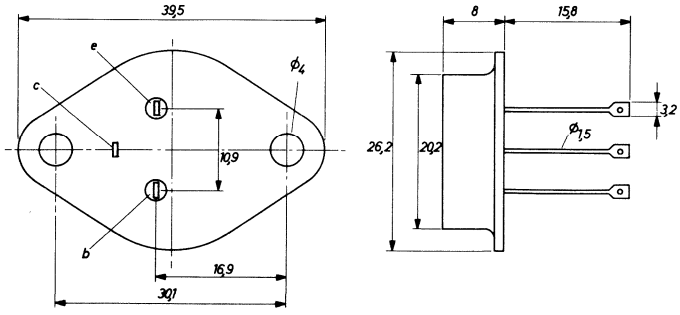

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1175A	Ge	P	G	35	25	10	200	200	85	70....140	1	20	60....120					4	1
2N 1176		P	G	10	10			300	85				20						1
2N 1177	Rc	P	G	30			10	80	71				100	12	1	140		16	3
2N 1178	Rc	P	G	30			10	80	71				40	12	1	140		16	3
2N 1179	Rc	P	G	30			10	80	71				80	12	1	140		16	3
2N 1180	Rc	P	G	30			10	80	71				80	12	1	100		16	3
2N 1182		P	G	50	60			106W	100	30.....85		500							5
2N 1183	Rc	P	G	45	20	20	3A	1W	100	20.....60	2	400				0,5		6	5
2N 1183A	Rc	P	G	60	30	20	3A	1W	100	20.....60	2	400				0,5		6	5
2N 1183B	Rc	P	G	80	40	20	3A	1W	100	20.....60	2	400				0,5		6	5
2N 1184	Rc	P	G	45	20	20	3A	1W	100	40....120	2	400				0,5		6	5
2N 1184A	Rc	P	G	60	30	20	3A	1W	100	40....120	2	400				0,5		6	5
2N 1184B	Rc	P	G	80	40	20	3A	1W	100	40....120	2	400				0,5		6	5
2N 1185	Mo	P	G	45	30	30	500	200	100	170	1	10	190...400	6	1		375	4	1
2N 1186	Mo	P	G	60	45	30	500	200	100	44	1	10	30.....70	6	1		375	4	1
2N 1187	Mo	P	G	60	45	30	500	200	100	75	1	10	50....120	6	1		375	4	1
2N 1188	Mo	P	G	60	45	30	500	200	100	115	1	10	100...225	6	1		375	4	1
2N 1189	Mo	P	G	45	30	15	500	200	100	115	1	10	75....175	6	1		375	4	1
2N 1190	Mo	P	G	45	30	15	500	200	100	170	1	10	125...300	6	1		375	4	1
2N 1191	Mo	P	G	40	25	25	200	200	100	20.....80	1	10	30.....70	6	1		375	4	1
2N 1192	Mo	P	G	40	25	25	200	200	100	40....135	1	10	50....125	6	1		375	4	1
2N 1193	Mo	P	G	40	25	25	200	200	100	70....300	1	10	100...250	6	1		375	4	1
2N 1194	Mo	P	G	40	25	25	200	200	100	125...600	1	10	190...500	6	1		375	4	1
2N 1195	Mo	P	G	30		1	40		100	25	10	10	18	10	10			4	3
2N 1196		P	S	70	70			350	200	5.....30		2							3
2N 1197		P	S	70	70			350	200	5.....30		2							3
2N 1198	Ge	N	G	25	25			65	85	17.....90		8							5
2N 1199		N	S	20	15			150	150	12.....60		20				75			5
2N 1199A		N	S	20	15			150	150	12.....60		20				75			5
2N 1200		N	S	20	15			100	150	7.....200		1,5	9						3
2N 1201		N	S	20	15			100	150	7.....200		1,5	9						3
2N 1202	So	P	G	80	60		5A	34W	95	40....120	2					0,2			5
2N 1203	So	P	G	120	70		5A	34W	95	25.....75	2	2A				0,2			5
2N 1204	Mo	P	G	20	15	4	500	750	100	35	1,5	400	2	10	20			4	5
2N 1204A	Mo	P	G	20	15	4	500	750	100	25	0,5	200	2	10	20			4	5
2N 1206	Tr	N	S	60	60			3	200	20.....80			25			10			3
2N 1207	Tr	N	S	125	125			3	200	20.....80			25			10			3
2N 1208	Se	N	S	60	60			45W	200	15		2A							2
2N 1209	Se	N	S	45	45			45W	200	20.....80		2A				3			4
2N 1210	Tr	N	S	60	60			30W	175	15.....75		2A				3			4
2N 1211	Tr	N	S	80	80			30W	175	15.....75		2A				3			4
2N 1212	Tr	N	S	60	60			45W	200	12.....36		1A				3			4
2N 1213	Rc	P	G	25		1	100	75	71									4	5
2N 1214	Rc	P	G	25		1	100	75	71									4	5
2N 1215	Rc	P	G	25		1	100	75	71									4	5
2N 1216	Rc	P	G	25		1	100	75	71									4	5
2N 1217	Ge	N	G	20	20			75	85	40....100		0,5							5
2N 1218	Sy	N	G	45	45			20W	90	30....120		1A							2
2N 1219	So	P	S	30	25	20		250	175	18		5						4	1
2N 1220	So	P	S	30	25	20		250	175	9		5						4	1
2N 1221	So	P	S	30	25	10		250	175				18	6	1			4	1
2N 1222	So	P	S	30	25	10		250	175				9	6	1			4	1
2N 1223	So	P	S	40	40	10		250	175				6	6	1			4	1
2N 1224	Rc	P	G	40	40	0,5	10	120	85	20....175		1,5	20....175	12	1,5			10	5
2N 1225	Rc	P	G	40	40	0,5	10	120	85	20....175	12	1,5						10	5

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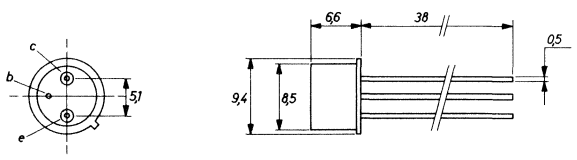

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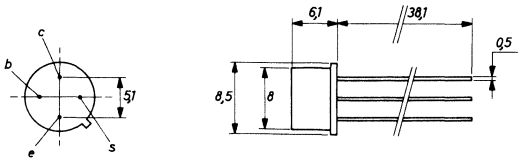

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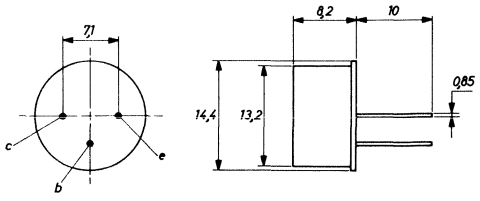

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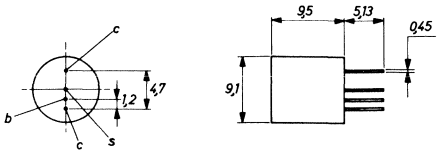

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1226	Rc	P	G	60	40	0,5	10	120	85	20....175	12	1,5						10	5
2N 1227	So	P	G	40	30	20	500	50W	95	50....350	14	500	25					3	5
2N 1228	So	P	S	15	15	15		400	160				14.....32	5	1			4	5
2N 1229	So	P	S	15	15			400	160				28						5
2N 1230	So	P	S	35	35	35		400	160				14.....32	5	1			4	5
2N 1231	So	P	S	35	35	35		400	160				28.....65	5	1			4	5
2N 1232	So	P	S	60	60	60		400	160				14.....32	5	1			4	5
2N 1233	So	P	S	60	60	60		400	160				28.....65	5	1			4	5
2N 1234	So	P	S	110	110	110		400	160				14.....32	5	1			4	5
2N 1235	Tr	N	S	120	120			85W	200	12.....60		1A							2
2N 1238	So	P	S	15	15	15		1W	160				14.....32	5	1			57	5
2N 1239	So	P	S	15	15	15		1W	160				28.....65	5	1			57	5
2N 1240	So	P	S	35	35	35		1W	160				14.....32	5	1			57	5
2N 1241	So	P	S	35	35	35		1W	160				28.....65	5	1			57	5
2N 1242	So	P	S	60	60	60		1W	160				14.....32	5	1			57	5
2N 1243	So	P	S	60	60	60		1W	160				28.....65	5	1			57	5
2N 1244	So	P	S	110	110	110		1W	160				14.....32	5	1			57	5
2N 1245		P	G	30	25			20W	85	50		500							2
2N 1246		P	G	30	25			20W	85	50		500							2
2N 1247	Ns	N	S	6	6			30	150	15		0,5							1
2N 1248	Tr	N	S	6	6			30	150	15		0,02							1
2N 1249	Tr	N	S	6	6			30	150	20		0,03							1
2N 1250	Tr	N	S	60	60			85W	200	15		2A							2
2N 1251	Sy	N	G	20	15			150	85				70						1
2N 1252	Tx	N	S	30	20			600	175	15.....45		150				40			5
2N 1253	Tx	N	S	30	20			600	175	30.....90		150				50			5
2N 1253A		N	S	60	30			800	300	30.....90		150				50			5
2N 1254	Tr	P	S	30	30			275	200	25.....50		10				30			5
2N 1255	Tr	P	S	30	30			275	200	40.....80		10				50			5
2N 1256	Tr	P	S	40	40			275	200	25.....50		10				30			5
2N 1257	Tr	P	S	40	40			275	200	40.....80		10				50			5
2N 1258	Tr	P	S	30	30			275	200	75....150		10				50			5
2N 1259	Tr	P	S	50	50			275	200	25....100		10				40			5
2N 1260	Tr	N	S	120	120			85W	200	12.....60		1A							2
2N 1261	So	P	G	80	45		5A	34W	95	20.....50	2	2A				0,2			5
2N 1262	So	P	G	80	45		5A	34W	95	30.....75	2	2A				0,2			5
2N 1263	So	P	G	80	45		5A	34W	95	45....113	2	2A				0,2			5
2N 1264	Sy	P	G	20				50	75				15						3
2N 1265		P	G	12	10			50	85				25						3
2N 1266		P	G	10				80	85				10						3
2N 1267		N	S	20	15			150	150	4.....15		1,5	6						3
2N 1268		N	S	20	15			150	150	7.....30		1,5	11						3
2N 1269		N	S	20	15			150	150	20.....80		1,5	28						3
2N 1270		N	S	20	15			150	150	4.....16		1,5	6						3
2N 1271		N	S	20	15			150	150	7.....30		1,5	11						3
2N 1272		N	S	20	15			150	150	20.....80		1,5	28						3
2N 1273	Tx	P	G	15	15		200	250	100	27....165		50	20					4	1
2N 1274	Tx	P	G	25	25		200	250	100	27....165		50	20					4	1
2N 1275	So	P	S	100	80	60		250	160	9.....25	0,5	1						9	
2N 1276	Tx	N	S	40	30			150	150				9						1

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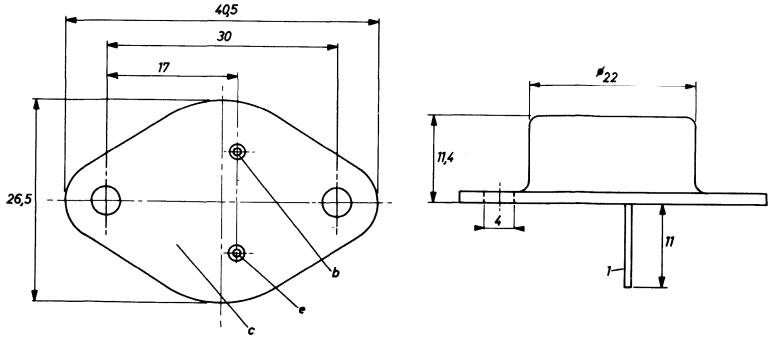

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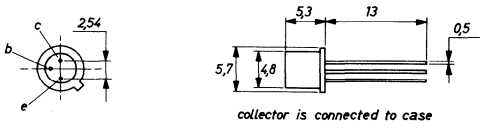

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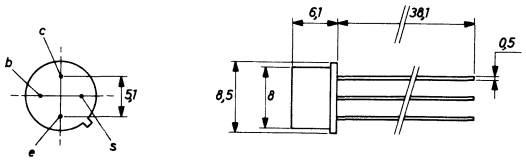

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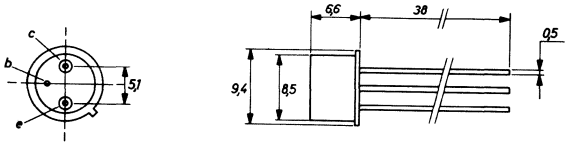

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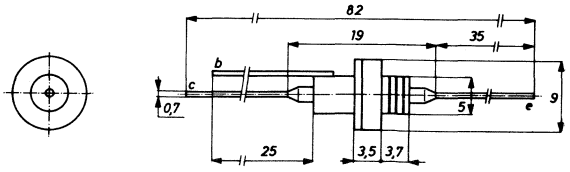
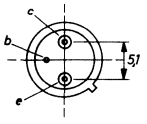
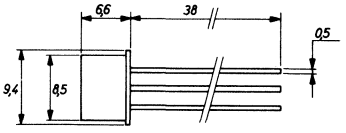


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1277	Tx	N	S	40	30			150	150				18						1
2N 1278	Tx	N	S	40	30			150	150				37						1
2N 1279	Tx	N	S	40	30			150	150				76						1
2N 1280		P	G	16	16			200	85	40		20							5
2N 1281		P	G	16	12			200	85	60		20							5
2N 1282		P	G	16	6			200	85	70		20							5
2N 1284		P	G	20	15			150	85	30....150		10							5
2N 1285	Sy	P	G	40	40			240	71	30....100		1,5							3
2N 1287		P	C	25	25			300	85				40						1
2N 1287A		P	G	25	25			300	85				60						1
2N 1288	Ge	N	G	15	10			75	100	50....300		10							5
2N 1289	Ge	N	G	20	15			75	85	50....300		10							5
2N 1291		P	G	35	30			20W	85	40		500							2
2N 1292	Sy	N	G	35	30			25W	100	30		500							2
2N 1293		P	G	60	60			20W	85	40		500							2
2N 1294	Sy	N	G	60	45			25W	100	30		500							2
2N 1295		P	G	80	80			20W	85	40		500							2
2N 1296	Sy	N	G	80	60			25W	100	30		500							2
2N 1297		P	G	100	100			20W	85	40		500							2
2N 1298		N	G	100	80			25W	100	30		500							2
2N 1299	Sy	N	G	40	20			150	100	35....110		50							5
2N 1300	Rc	P	G	13	12	1	100	150	85	30	3	10				25	400	4	5
2N 1301	Rc	P	G	13	12	4	100	150	85	30	3	10				35	400	4	5
2N 1302	Tx	N	G	25			300	150	85	20		10				3		4	5
2N 1303	Tx	P	G	30	25		300	150	85	20....100		10				3		4	5
2N 1304	Tx	N	G	25			300	150	85	40....200		10				5		4	5
2N 1305	Tx	P	G	30	25		300	150	85	40....200		10				5		4	5
2N 1306	Tx	N	G	25			300	150	85	60....300		10				10		4	5
2N 1307	Tx	P	G	30	25		300	150	85	60....300		10				10		4	5
2N 1308	Tx	N	G	25			300	150	85	80		10				15		4	5
2N 1309	Tx	P	G	30	25		300	150	85	80....100		10				15		4	5
2N 1309A		P	G	35	15			150	85	80		10							5
2N 1312	Tx	N	G	50	50			120	85	20		20							5
2N 1313		P	G	30	15			180	100	40....125									5
2N 1314		P	G	40	40			125W	90	20.....55		1A							2
2N 1315		P	G	32	16			125W	90	45....135		1A							2
2N 1316		P	G	30	15			200	85	50....200									5
2N 1317		P	G	20	12			200	85	45....180									5
2N 1318		P	G	10	6			200	85	40....150									5
2N 1319	Rc	P	G	20	20	20	400	120	71	15		400				3		4	5
2N 1320		P	G	35	30			20W	85	40		500							2
2N 1321		N	G	35	30			25W	100	30		500							2
2N 1322		P	G	60	60			20W	85	40		500							2
2N 1323		N	G	60	45			25W	100	30		500							2
2N 1324		P	G	80	80			20W	85	40		500							2
2N 1325		N	G	80	60			25W	100	30		500							2
2N 1326		P	G	100	100			20W	85	40		500							1
2N 1327		N	G	100	80			25W	100	30		500							2
2N 1328		P	G	35	30			20W	85	40		500							2
2N 1329		N	G	35	30			25W	100	30		500							2
2N 1330		N	G	60	45			25W	100	30		500							2
2N 1331		P	G	80	80			20W	85	40		500							2
2N 1332		N	G	80	60			25W	100	30		500							2
2N 1333		P	G	100	100			20W	85	40		500							2
2N 1334		N	G	100	80			25W	100	30		500							2
2N 1335		N	S	120	45			800	175	10....150		30				70			4
2N 1336		N	S	120	45			800	175	10....150		30				70			4
2N 1337		N	S	120	45			800	175	10....150		30				70			4
2N 1338		N	S	80	25			800	175	10....150		30				70			4
2N 1339		N	S	120	50			800	175	10....150		30				70			4

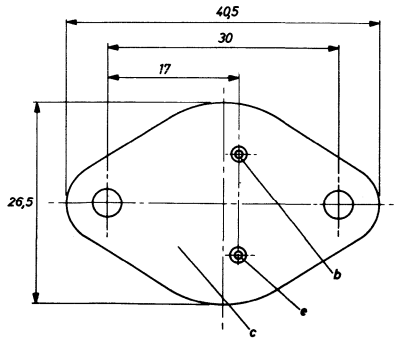
4

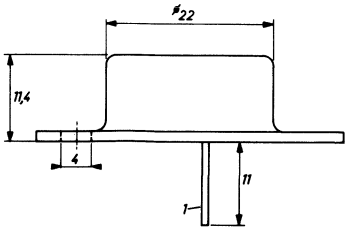




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1340		N	S	120	50			800	175	10....150		30				70			4
2N 1341		N	S	120	50			800	175	10....150		30				70			4
2N 1342		N	S	150	65			800	175	10....150		30				70			4
2N 1343		P	G	20	16			150	85	15		50							5
2N 1344		P	G	15	10			150	85	60		20							5
2N 1345		P	G	10	8			150	85	30....100		400							5
2N 1346		P	G	12	10			150	85	40....250		0,35							5
2N 1347		P	G	20	12			150	85	30		10							5
2N 1352		P	G	30	20			150	85	40....100									1
2N 1353		P	G	15	10			200	85	25....150		10							5
2N 1355		P	G	30	20			200	85	30....150		10							5
2N 1356		P	G	30	20			200	100	40....140		10							5
2N 1357		P	G	30	15			200	85	40....150		10							5
2N 1358	Mo	P	G	80		60			110	40.....80	2	1,2A						11	5
2N 1359	Mo	P	G	50	40	25	3A	106W	110	35.....90	4	1A						3	2,5
2N 1360	Mo	P	G	50	40	25	3A	106W	110	60....140	4	1A						3	2,5
2N 1361		P	G	25	20			150	100	40....100		25							5
2N 1362	Mo	P	G	100	75	50	3A	106W	110	35.....90	4	1A						3	2,5
2N 1363	Mo	P	G	100	75	50	3A	106W	110	60....140	4	1A						3	2,5
2N 1364	Mo	P	G	120	100	60	3A	106W	110	35.....90	4	1A						3	2,5
2N 1365	Mo	P	G	120	100	60	3A	106W	110	60....140	4	1A						3	2,5
2N 1366		N	G	18	18			100	85	20		1	10			5			1
2N 1367		N	G	18	18			100	85	10		1	5			2,5			1
2N 1370	Tx	P	G	25	25			250	100	45....165		50	40						1
2N 1371	Tx	P	G	45	45		200	250	100	45....165		50	40					4	1
2N 1372	Tx	P	G	25	25	15	200	250	100	25....105	1	50	20....127	5	1			4	1
2N 1373	Tx	P	G	45	45	25	200	250	100	27....105	1	50	20....127	5	1			4	1
2N 1374	Tx	P	G	25	25	15	200	250	100	45....165	1	50	40....187	5	1			4	1
2N 1375	Tx	P	G	45	45	25	200	250	100	45....165	1	50	40....187	5	1			4	1
2N 1376	Tx	P	G	25	25	15	200	250	100	67....165	1	50	60....187	5	1			4	1
2N 1377	Tx	P	G	45	45	25	200	250	100	67....165	1	50	60....187	5	1			4	1
2N 1378	Tx	P	G	12	12	7	200	250	100	85....330	1	50	75....385	5	1			4	1
2N 1379	Tx	P	G	25	25	15	200	250	100	85....330	1	50	75....385	5	1			4	1
2N 1380	Tx	P	G	12	12	7	200	250	100	27....330	1	50	20....385	5	1			4	1
2N 1381	Tx	P	G	25	25	15	200	250	100	27....330	1	50	20....385	5	1			4	1
2N 1382	Tx	P	G	25	25			250	100	45....165		50	40						1
2N 1383	Tx	P	G	25	25			250	100	27....165		50	20						1
2N 1384	Rc	P	G	30	30	1	500	240	85	20		200				20		11	5
2N 1385	Tx	P	G	25	10			750	100	10		10				250			5
2N 1386		N	S	25	25			300	175	30.....90		10							5
2N 1387		N	S	30	30			300	175	20.....40		10							5
2N 1388		N	S	45	25			300	175	15.....55		10	30						3
2N 1389		N	S	50	50			300	175							24			3
2N 1390		N	S	20	20			300	175	30....150		10	10						3
2N 1391		N	G	25	18			150	100	40....160		20	35						1

3





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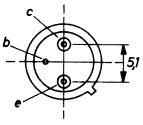

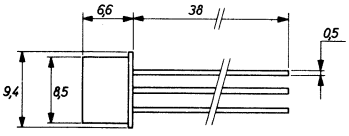

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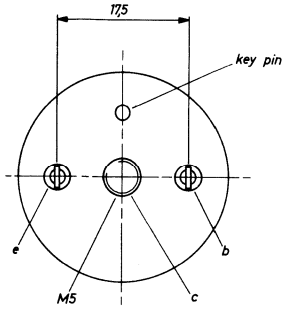
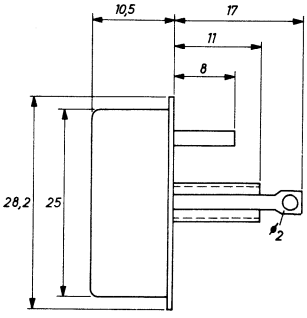
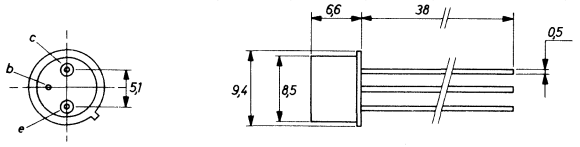




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1395	Rc	P	G	40	40	0,5	10	120	100	50....175	12	1,5						10	3
2N 1396	Rc	P	G	40	40	0,5	10	120	100	50....175	12	1,5						10	3
2N 1397	Rc	P	G	40	40	0,5	10	120	100	50....175	12	1,5						10	3
2N 1398	Tx	P	G	30	20			50	85	10		0,5				140			3
2N 1399	Tx	P	G	30	20			50	85	3,5		0,5				140			3
2N 1400	Tx	P	G	30	20			50	85	5.....12		0,5				100			3
2N 1401	Tx	P	G	30	20			50	85	5		0,5				120			3
2N 1402	Tx	P	G	30	20			50	85	3,5....12		1,5				100			3
2N 1403		P	G	15	12			250	100	25....250		7				200			3
2N 1404	Tx	P	G	25				150	85										5
2N 1404A		P	G	25	15			150	85	30....200		12				3			5
2N 1405	Tx	P	G	30	20			75	100	10....200		2	10			250			3
2N 1406	Tx	P	G	30	20			75	100	10....200		2	10			250			3
2N 1407	Tx	P	G	30	20			75	100	10....200		2	10			200			3
2N 1408	Mo	P	G	50	50	10	200	150	100	10	1	1	10	5	1			4	5
2N 1409		N	S	30	25			600	200	15.....45		150				200			5
2N 1409A		N	S	30	25			800	200	15.....45		150				200			5
2N 1410		N	S	45	30			600	200	30.....90		150				130			5
2N 1410A		N	S	30	30			800	200	30.....90		150				130			5
2N 1411	Sp	P	G	5	5			25	85	20		50				25			5
2N 1412	Mo	P	G	100	60	60			100	25.....50	2	5A						11	5
2N 1413	Mo	P	G	35	25	10	500	225	100	25.....42	1	20	20.....41	5	1			4	5
2N 1414	Mo	P	G	35	25	10	500	225	100	34.....65	1	20	30.....64	5	1			4	5
2N 1415	Mo	P	G	35	25	10	500	225	100	53.....90	1	20	44.....88	5	1			4	5
2N 1416		P	G		18			100	65				39						1
2N 1417	Tr	N	S	15	15			150	150				30						1
2N 1418	Tr	N	S	30	30			150	150				30						1
2N 1419		P	G	80	40			87W	95	40....100		25A							5
2N 1420	Mo	N	S	60	40	5		3W	175	100...300	10	150	15	10	50			4	5
2N 1420A		N	S	60	40			800	200	100...300		150				60			3
2N 1421		N	S	60	60			30W	200	20.....80		1A	20			10			4
2N 1422		N	S	60	60			30W	200	20.....80		1A	20			10			4
2N 1423		N	S	60	60			60W	200	20.....80		2A	20			10			4
2N 1424		N	S	60	60			60W	200	20.....80		2A	20			10			4
2N 1425	Rc	P	G	24		0,5	10	80	85	50								5	1
2N 1426	Rc	P	G	24		0,5	10	80	85	130			17					5	1
2N 1427	Sp	P	G	6	6			25	100	20		50	40			50			5
2N 1428		P	S	6	6			100	140	12		5	25			16			5
2N 1429	So	P	S	6	6	6		100	140	12		5	25	3	1	16		4	5
2N 1430	So	P	G	120	100	1	10A	70W	110	30.....90	2	5A				0,6		14	5
2N 1431	Sy	N	G	20	15			180	75	75....150		35							1
2N 1432	Sy	P	G	45	45			100	100				30						1
2N 1433		P	G	80	50				95	20.....50		2A							2
2N 1434		P	G	80	50				95	45....115		2A							2
2N 1435		P	G	80	50				95	30..... 75		2A							2

4



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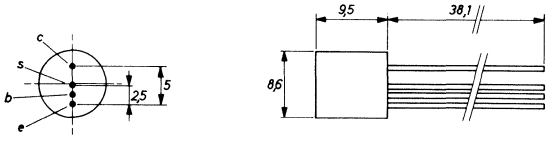

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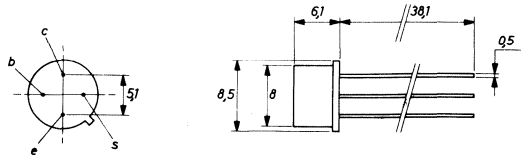

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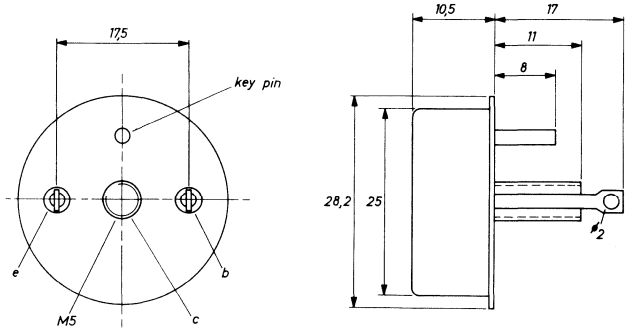

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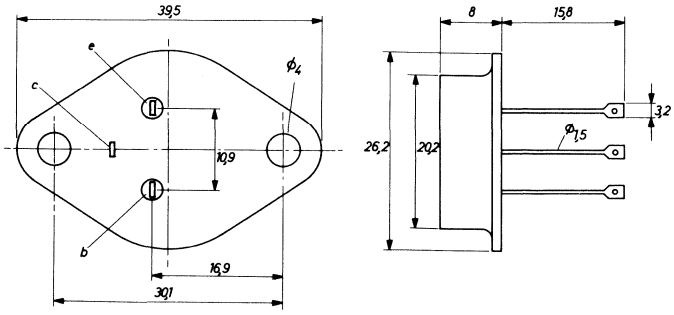

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1436		P	G	15	12			50	100	20		10							5
2N 1437		P	G	100	90			23W	95	20		500							2
2N 1438		P	G	100	90			23W	95	20		500							2
2N 1439	So	P	S	50	50	50		400	200				9.....22	6	1			4	1
2N 1440	So	P	S	60	50	60		400	200				9.....22	6	1			4	1
2N 1441	So	P	S	50	35	50		400	200				18.....45	6	1			4	1
2N 1442	So	P	S	50	30	50		400	200				30.....65	6	1			4	1
2N 1443	So	P	S	50	15	50		400	200				50	6	1			4	1
2N 1444	We	N	S	60	20			500	150	20		250							5
2N 1445	Tr	N	S	120	120			4W	200	20.....80		200							2
2N 1446		P	G	45	25			200	85	16.....45		20	16						1
2N 1447		P	G	45	25			200	85	35.....65		20	30						1
2N 1448		P	G	45	25			200	85	50.....90		20	45						1
2N 1449		P	G	45	25			200	85	70....125		20	60						1
2N 1450	Rc	P	G	30	20	1	100	120	85	20		10						7	5
2N 1451		P	G	45	20			200	85	20.....65		20							1
2N 1452		P	G	45	20			200	85	30.....90		20							1
2N 1453		P	G	30	20				90	40.....90		1A							2
2N 1454		P	G	30	20				90	70....150		1A							2
2N 1455		P	G	60	40				90	40.....90		1A							2
2N 1456		P	G	60	40				90	70....150		1A							2
2N 1457		P	G	80	60				90	40.....90		1A							2
2N 1458		P	G	80	60				90	70....150		1A							2
2N 1461		P	G	30	20				90	40.....90		1A							2
2N 1462		P	G	30	20				90	70....150		1A							2
2N 1463		P	G	60	40				90	40.....90		1A							2
2N 1464		P	G	60	40				90	70....150		1A							2
2N 1465		P	G	120	70			20W	85	20		500							2
2N 1466		P	G	120	70			20W	85	20		500							2
2N 1469	So	P	S	40	35	40		250	175				36.....88	6	1			4	1
2N 1470		N	S	60	60			55W	200	15		1A							2
2N 1471		P	G	12	15			200	85				100						5
2N 1472		N	S	25	25			150	150	20		10				75			5
2N 1473	Sy	N	G	40	20			167	75	25.....50		400							5
2N 1474	So	P	S	60	60	60		250	175				12.....44	6	1			4	1
2N 1474A	So	P	S	60	60	60		250	175				18.....44	6	1			4	1
2N 1475	So	P	S	60	60	60		250	175				36.....88	6	1			4	1
2N 1476	So	P	S	100	100	100		250	175				12.....36	6	1			4	1
2N 1477	So	P	S	100	100	100		250	175				30.....66	6	1			4	1
2N 1478		P	G	30	20			250	100	40		100							5
2N 1479	Rc	N	S	60	60	12	1,5A	5W	200	20.....60	4	200	50	4	5	1,5	200	4	5
2N 1480	Rc	N	S	100	100	12	1,5A	5W	200	20.....60	4	200	50	4	5	1,5	200	4	5
2N 1481	Rc	N	S	60	60	12	1,5A	5W	200	35....100	4	200	50	4	5	1,5	200	4	5
2N 1482	Rc	N	S	100	100	12	1,5A	5W	200	35....100	4	200	50	4	5	1,5	200	4	5
2N 1483	Rc	N	S	60	60	12	3A	25W	200	20.....60	4	750					100	6	5
2N 1484	Rc	N	S	100	100	12	3A	25W	200	20.....60	4	750					100	6	5
2N 1485	Rc	N	S	60	60	2,5	3A	25W	200	35....100	4	750					100	6	5
2N 1486	Rc	N	S	100	100	2,5	3A	25W	200	35....100	4	750					100	6	5
2N 1487	Tx	N	S	60	60			75W	200	15.....45		200							5
2N 1488	Tx	N	S	100	100			75W	200	15.....45		200							5
2N 1489	Tx	N	S	60	60			75W	200	25.....75		1,5A							5
2N 1490	Tx	N	S	100	100			75W	250	25.....75		1,5A							5
2N 1491	Rc	N	S	30	30	1	100	3W	175				15....200	20	15	300		12	3
2N 1492	Rc	N	S	60	60	2	100	3W	175				15....200	20	15	300		12	3
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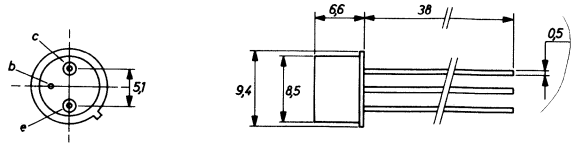

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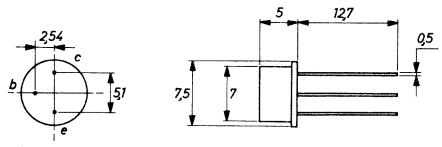

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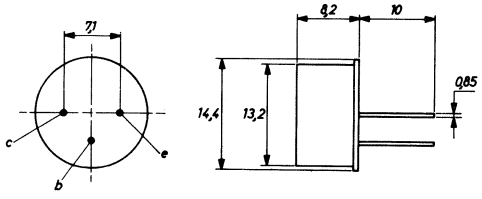

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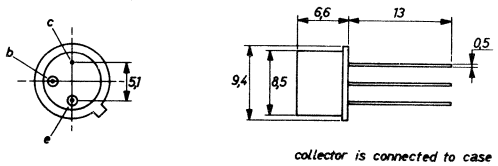
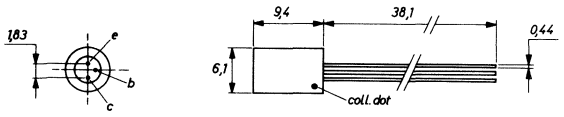


collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1494	Mo	P	G	20	20	4	500	750	100	35	1,5	400	2	10	20				5
2N 1494A	Mo	P	G	20	15	4	500	750	100	25	0,5	200	2	10	20				5
2N 1495	Mo	P	G	40	25	4	500	750	100	25	0,5	200	1,5	10	20			4	5
2N 1495A		P	G	40	25			250	100	25		200				150			5
2N 1496	Mo	P	G	40	25	4	500	750	100	25	0,5	200	1,5	10	20				5
2N 1499		P	G	25	15			25	85	20		10							5
2N 1499A	Sp	P	G	20	20			60	100	30		10				100			5
2N 1499B	Sp	P	G	30	20			75	100	40		10				150			5
2N 1500	Sp	P	G	15	12			60	100	20		10				120			5
2N 1501	So	P	G	60	40	25		34W	95	25....100	2	2A				0,2			5
2N 1502	So	P	G	40	40	25		34W	95	25....100	2	2A				0,2			5
2N 1504		P	G	80	60			25W	95	21		500							2
2N 1505	Ns	N	S	50	20			800	175	7.....100		100				70			4
2N 1506	So	N	S	60	40	4	2A	800	175	10....100		100				140		4	4
2N 1506A	So	N	S	80	80	5	2A	800	200	10....100		100				140		4	4
2N 1507	Tx	N	S	60	30	5	1A	600	175	100...300	10	150				50		4	5
2N 1508	Tx	N	S	100	55			1W	175	20.....60		600				50			5
2N 1509	Tx	N	S	60	35			1W	175	20.....60		600				50			5
2N 1511	Rx	N	S	60	60	60	6A	75W	200	4		6A				0,3		11	5
2N 1512	Rc	N	S	100	100	100	6A	75W	200	7		6A				0,3		11	5
2N 1513	Rc	N	S	60	60	60	6A	75W	200	7		6A				0,3		11	5
2N 1514	Rc	N	S	100	100	100	6A	75W	200							0,3		11	5
2N 1516		P	G	25				83	75	20		1							3
2N 1518	So	P	G	50	40		65A	50W	95	15.....60		15A						71	5
2N 1519	So	P	G	80	60		65A	50W	95	15.....60		15A						71	5
2N 1520	So	P	G	50	40		65A	50W	95	17.....68		35A						71	5
2N 1521	So	P	G	80	60		65A	50W	95	17.....68		35A						71	5
2N 1522	So	P	G	50	40		65A	50W	95	25....100		50A						71	5
2N 1523	So	P	G	80	60		65A	50W	95	25....100		50A						71	5
2N 1524	Rc	P	G	24		0,5	10	80	85				60	12	1		400	1	3
2N 1525	Rc	P	G	24		0,5	10	80	85				60	12	1			13	3
2N 1526	Rc	P	G	24		0,5	10	80	85				130	12	1			1	3
2N 1527	Rc	P	G	24		0,5	10	80	85				130	12	1			13	3
2N 1528		N	S	25	25			150	175				10						3
2N 1529	Mo	P	G	40	20	20	5A	106W	110	20.....40	2	3A						3	2,5

1



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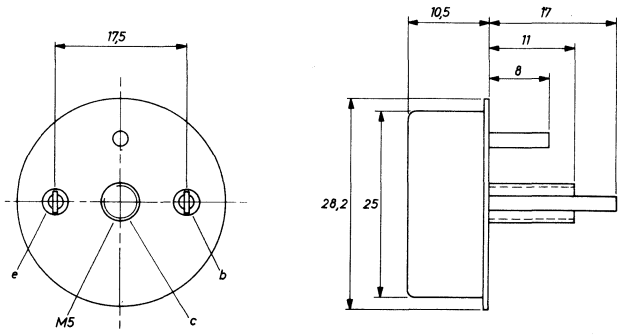

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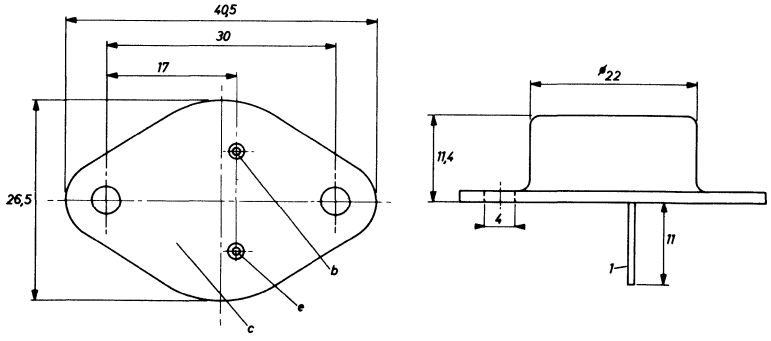

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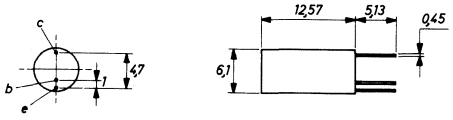

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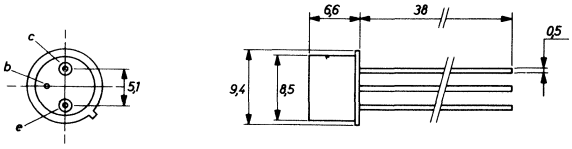

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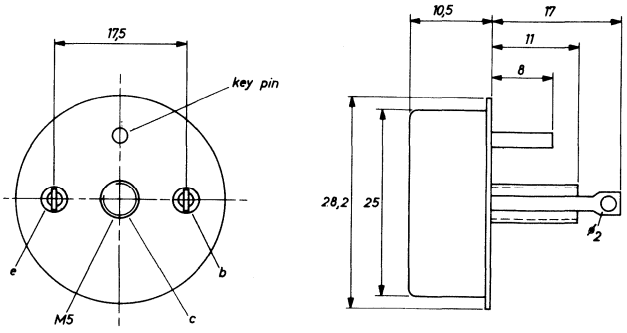

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1529A	Mo	P	G	40	20	20	5A	106W	110	20.....40	2	3A						14	2,5
2N 1530	Mo	P	G	60	30	30	5A	106W	110	20.....40	2	3A						3	2,5
2N 1530A	Mo	P	G	60	30	30	5A	106W	110	20.....40	2	3A						14	2,5
2N 1531	Mo	P	G	80	40	40	5A	106W	110	20.....40	2	3A						3	2,5
2N 1531A	Mo	P	G	80	40	40	5A	106W	110	20.....40	2	3A						14	2,5
2N 1532	Mo	P	G	100	50	50	5A	106W	110	20.....40	2	3A						3	2,5
2N 1532A	Mo	P	G	100	50	50	5A	106W	110	20.....40	2	3A						14	2,5
2N 1533	Mo	P	G	120	60	50	5A	106W	110	20.....40	2	3A						3	2,5
2N 1533A	Mo	P	G	120	60	60	5A	106W	110	20.....40	2	3A						14	2,5
2N 1534	Mo	P	G	40	20	20	5A	106W	110	35.....70	2	3A						3	2,5
2N 1534A	Mo	P	G	40	20	20	5A	106W	110	35.....70	2	3A						14	2,5
2N 1535	Mo	P	G	60	30	30	5A	106W	110	35.....70	2	3A						3	2,5
2N 1535A	Mo	P	G	60	30	30	5A	106W	110	35.....70	2	3A						14	2,5
2N 1536	Mo	P	G	80	40	40	5A	106W	110	35.....70	2	3A						3	2,5
2N 1536A	Mo	P	G	80	40	40	5A	106W	110	35.....70	2	3A						14	2,5
2N 1537	Mo	P	G	100	50	50	5A	106W	110	35.....70	2	3A						3	2,5
2N 1537A	Mo	P	G	100	50	50	5A	106W	110	35.....70	2	3A						14	2,5
2N 1538	Mo	P	G	120	60	60	5A	106W	110	35.....70	2	3A						3	2,5
2N 1539	Mo	P	G	40	20	20	5A	106W	110	50....100	2	3A						3	2,5
2N 1539A	Mo	P	G	40	20	20	5A	106W	110	50....100	2	3A						14	2,5
2N 1540	Mo	P	G	60	30	30	5A	106W	110	50....100	2	3A						3	2,5
2N 1540A	Mo	P	G	60	30	30	5A	106W	110	50....100	2	3A						14	2,5
2N 1541	Mo	P	G	80	40	40	5A	106W	110	50....100	2	3A						3	2,5
2N 1541A	Mo	P	G	80	40	40	5A	106W	110	50....100	2	3A						14	2,5
2N 1542	Mo	P	G	100	50	50	5A	106W	110	50....100	2	3A						3	2,5
2N 1542A	Mo	P	G	100	50	50	5A	106W	110	50....100	2	3A						14	2,5
2N 1543	Mo	P	G	120	50	60	5A	106W	110	50....100	2	3A						3	2,5
2N 1543A	Mo	P	G	120	60	60	5A	106W	110	50....100	2	3A						14	2,5
2N 1544	Mo	P	G	40	20	20	5A	106W	110	75....150	2	3A						3	2,5
2N 1544A	Mo	P	G	40	20	20	5A	106W	110	75....150	2	3A						14	2,5
2N 1545	Mo	P	G	60	30	30	5A	106W	110	75....150	2	3A						3	2,5
2N 1545A	Mo	P	G	60	30	30	5A	106W	110	75....150	2	3A						14	2,5
2N 1546	Mo	P	G	80	40	40	5A	106W	110	75....150	2	3A						3	2,5
2N 1546A	Mo	P	G	80	40	40	5A	106W	110	75....150	2	3A						14	2,5
2N 1547	Mo	P	G	100	50	50	5A	106W	110	75....150	2	3A						3	2,5
2N 1547A	Mo	P	G	100	50	50	5A	106W	110	75....150	2	3A						14	2,5
2N 1548	Mo	P	G	120	60	60	5A	106W	110	75....150	2	3A						3	2,5
2N 1548A	Mo	P	G	120	60	60	5A	106W	110	75....150	2	3A						14	2,5
2N 1549	Mo	P	G	40	20	20	15A	106W	110	10.....30	2	10A						3	2,5
2N 1549A	Mo	P	G	40	20	20	15A	106W	110	10.....30	2	10A						14	2,5
2N 1550	Mo	P	G	60	30	30	15A	106W	110	10.....30	2	10A						3	2,5
2N 1550A	Mo	P	G	60	30	30	15A	106W	110	10.....30	2	10A						14	2,5
2N 1551	Mo	P	G	80	40	40	15A	106W	110	10.....30	2	10A						3	2,5
2N 1551A	Mo	P	G	80	40	40	15A	106W	110	10.....30	2	10A						14	2,5
2N 1552	Mo	P	G	100	50	50	15A	106W	110	10.....30	2	10A						3	2,5
2N 1552A	Mo	P	G	100	50	50	15A	106W	110	10.....30	2	10A						14	2,5
2N 1553	Mo	P	G	40	20	20	15A	106W	110	30.....60	2	10A						3	2,5
2N 1553A	Mo	P	G	40	20	20	15A	106W	110	30.....60	2	10A						14	2,5
2N 1554	Mo	P	G	60	30	30	15A	106W	110	30.....60	2	10A						3	2,5
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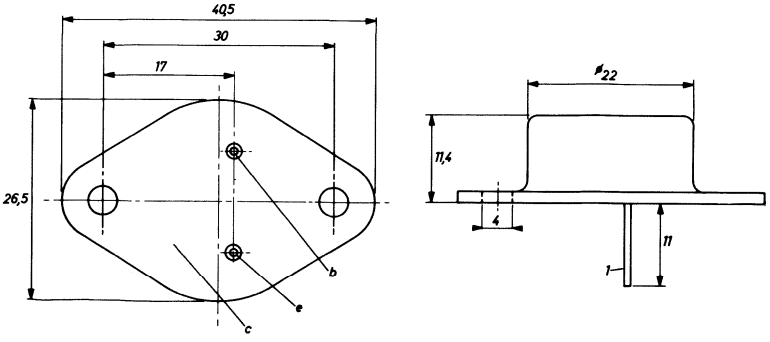
3



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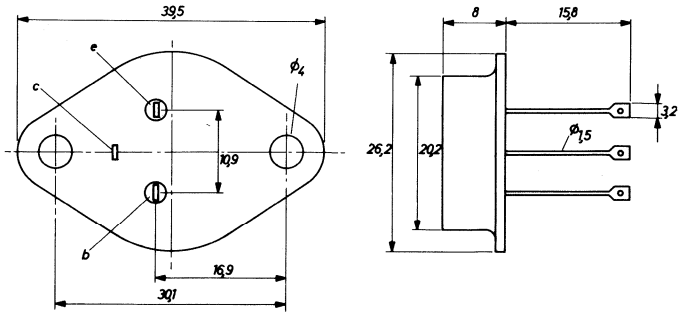

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1555	Mo	P	G	80	40	40	15A	106W	110	30.....60	2	10A						3	2,5
2N 1555A	Mo	P	G	80	40	40	15A	106W	110	30.....60	2	10A						14	2,5
2N 1556	Mo	P	G	100	50	50	15A	106W	110	30.....60	2	10A						3	2,5
2N 1556A	Mo	P	G	100	50	50	15A	106W	110	30.....60	2	10A						14	2,5
2N 1557	Mo	P	G	40	20	20	15A	106W	110	50....100	2	10A						3	2,5
2N 1557A	Mo	P	G	40	20	20	15A	106W	110	50....100	2	10A						14	2,5
2N 1558	Mo	P	G	60	30	30	15A	106W	110	50....100	2	10A						3	2,5
2N 1558A	Mo	P	G	60	30	30	15A	106W	110	50....100	2	10A						14	2,5
2N 1559	Mo	P	G	80	40	40	15A	106W	110	50....100	2	10A						3	2,5
2N 1559A	Mo	P	G	80	40	40	15A	106W	110	50....100	2	10A						14	2,5
2N 1560	Mo	P	G	100	50	50	15A	106W	110	50....100	2	10A						3	2,5
2N 1560A	Mo	P	G	100	50	50	15A	106W	110	50....100	2	10A						14	2,5
2N 1561	Mo	P	G	25	25	3	250	3W	100							500		101	4
2N 1562	Mo	P	G	25	25	2	250	3W	100							450		101	4
2N 1564	Tx	N	S	80	60			600	175	15.....50		5	20						1
2N 1565	Se	N	S	80	60			600	175	30....100		5	40						1
2N 1566	Se	N	S	80	60			600	175	60....200		5	80						1
2N 1566A	Se	N	S	80	60			600	175	60....200		5	80			100			1
2N 1572	Tx	N	S	125	80			600	175	15.....50		5	20						1
2N 1573	Tx	N	S	125	80			600	175	30....100		5	40						1
2N 1574	Tx	N	S	125	80			600	175	60....200		5	80						1
2N 1585		N	G	25	10			750	100	20		10							1
2N 1586	Tx	N	S	15	10			125	85	5.....27		1	9						1
2N 1587	Tx	N	S	30	20			125	85	5.....27		1	9						1
2N 1588	Tx	N	S	60	40			125	85	5.....27		1	9						1
2N 1589	Tx	N	S	15	10			125	85	20.....75		1	25						1
2N 1590	Tx	N	S	30	20			125	85	20.....75		1	25						1
2N 1591	Tx	N	S	60	40			125	85	20.....75		1	25						1
2N 1592	Tx	N	S	15	10			125	85	40....210		1	70						1
2N 1593	Tx	N	S	30	20			125	85	40....210		1	70						1
2N 1594	Tx	N	S	60	40			125	85	40....210		1	70						1
2N 1605	Rc	N	G	25	24	12	100	150	100	40		0,25	20					4	5
2N 1605A	Rc	N	G	40	40	12	100	200	100	40	0,25	20						4	5
2N 1606		P	S	10	10			100	140	6.....30		15				7,2			5
2N 1607		P	S	10	10			100	140	6.....30		15				10			5
2N 1608		P	S	10	10			100	140	6.....30		15				25			5
2N 1609		P	G	80	60				95	30.....75		100							2
2N 1610		P	G	80	60				95	50....125		100							1
2N 1611		P	G	60	40				95	30.....75		100							2
2N 1612		P	G	60	40				95	50....125		100							2
2N 1613	Mo	N	S	75	50	7		2W	200	40....120	10	150	30....100	5	1	300		4	5
2N 1613A		N	S	75	50			1W	200	40....120		150	30			60			5
2N 1613B		N	S	120	55			1W	200	40....120		150	30			60			5
2N 1614	Ge	P	G	65	40			240	100	18.....43		20							5
2N 1615	Tr	N	S	100	100			5,5	200	25		5				2			3

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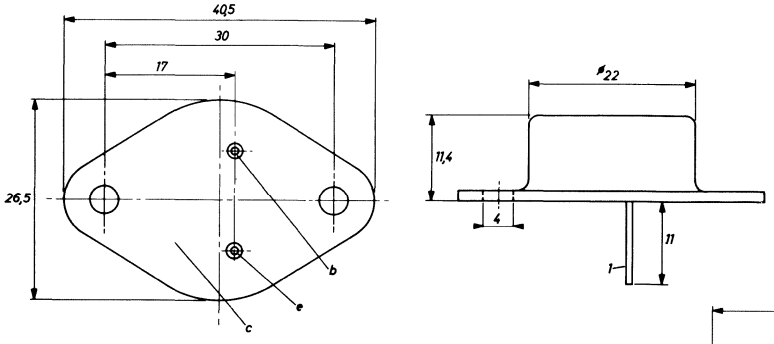

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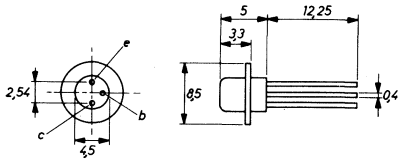

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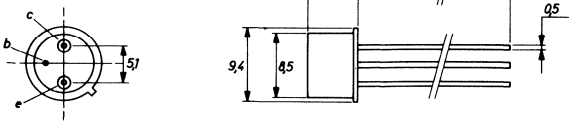

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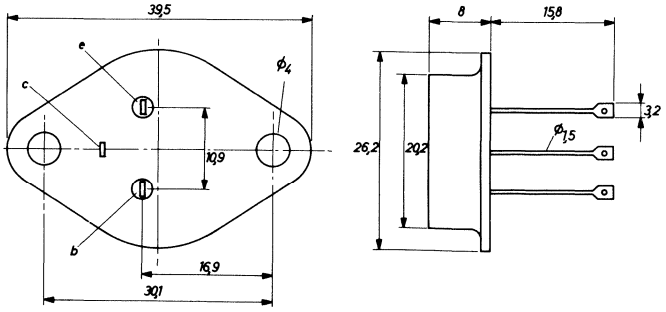

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)	Case	Use
2N 1616	Se	N	S	60	60			60W	175	15.....75		2A				3			4
2N 1617	Se	N	S	80	80			60W	175	15.....75		2A				3			4
2N 1617A	Tr	N	S	80	70			85W	200	20.....60		2A				3			2
2N 1618	Se	N	S	100	100			60W	175	15.....75		2A				3			4
2N 1618A	Tr	N	S	100	80			85W	200	20.....60		2A				3			2
2N 1620	Tr	N	S	100	100			60W	175	15.....75		2A				3			4
2N 1622		N	G	90	90			120	85	40		5							1
2N 1623	So	P	S	50	20	20		250	160	9.....40	6	1						4	1
2N 1624		N	G	25	20			150	100	60....180		30							5
2N 1631	Rc	P	G	34			10	80	85				40	12	1		400	13	3
2N 1632	Rc	P	G	34		0,5	10	80	85				40....170	12	1			1	3
2N 1633	Rc	P	G	34		0,5	10	80	85				27					13	3
2N 1634	Rc	P	G	34		0,5	10	80	85				27					1	3
2N 1635	Rc	P	G	34		0,5	10	80	85				40					13	3
2N 1636	Rc	P	G	34		0,5	10	80	85				40					1	3
2N 1637	Rc	P	G	34		1,5	10	80	85				40	12	1			1	3
2N 1638	Rc	P	G	34		1,5	10	80	85				70	12	1		400	1	3
2N 1639	Rc	P	G	34		1,5	10	80	85				40	12	1			1	3
2N 1640	Ns	P	S	30	20			250	160	6		0,1							5,9
2N 1641	Ns	P	S	30	10			250	160	10		0,1							5,9
2N 1642		P	S	30	6			250	160	15		0,1							5,9
2N 1643	So	P	S	25	25	20		250	160	10.....25								4	1
2N 1644		N	S	60	40			2W	175	40....120		150				50			5
2N 1645	We	P	G	35	20			1W	200	20		200	25			450			4
2N 1647	Tr	N	S	80	80			267	175	15.....45		500				3			4
2N 1648	Tr	N	S	120	80			267	175	15.....45		500				2			4
2N 1649	Tr	N	S	80	80			267	175	30.....90		500				3			4
2N 1650	Tr	N	S	120	80			267	175	30		500				2			4
2N 1651	Mo	P	G	60	30	1,5	25A	106W	110	25....140	2	10A	20	6	500			14	5
2N 1652	Mo	P	G	100	60	1,5	25A	106W	110	25....140	2	10A	20	6	500			14	5
2N 1653	Mo	P	G	120	80	1,5	25A	106W	110	25....140	2	10A	20	6	500			14	5
2N 1654	So	N	S	100	80	60		250	160	20.....45	0,5	1						9	2
2N 1655	So	N	S	125	100	125		250	160	10.....22	0,5	1						9	2
2N 1656	Se	N	S	125	100			250	160	20.....45		1						9	2
2N 1657		N	S	60	60				200	7,3....30		850							2
2N 1660		N	S	60	60			85W	200	45....135		1A				25			2
2N 1661		N	S	80	80			85W	200	45....135		1A				25			2
2N 1662		N	S	100	100			85W	200	45....135		1A				25			2
2N 1663		N	S	20	15			150	150	30....150		20				100			5
2N 1664		P	G	45	40			200	100	45....120		10	50						1
2N 1665		P	G	15	12			150	85	5.....100		10				300			3
2N 1666		P	G	80	60			30W	90	15.....30		6A							5
2N 1667		P	G	60	48			30W	90	35.....80		6A							5
2N 1668		P	G	60	48			30W	90	20.....45		6A							5
2N 1669		P	G	80	60			30W	90	20.....65		6A							5
2N 1670		P	G	100				120	85	15		10							5
2N 1672		N	G	40	40			120	85	20		1	15						
2N 1672A		N	G	40	40			120	85	20		1	15						
2N 1673	Sy	P	G	35				80	85				20						3
2N 1674	Tr	N	S	45	45			200	200				50			20			1

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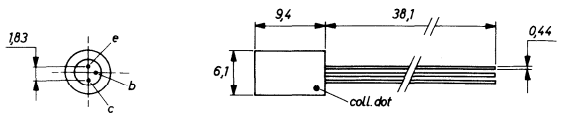

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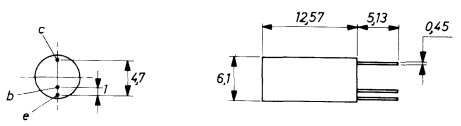

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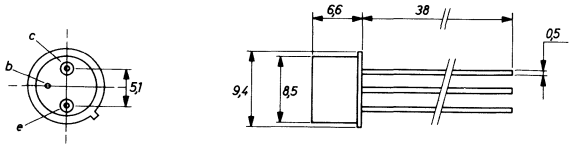

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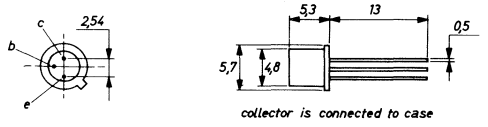

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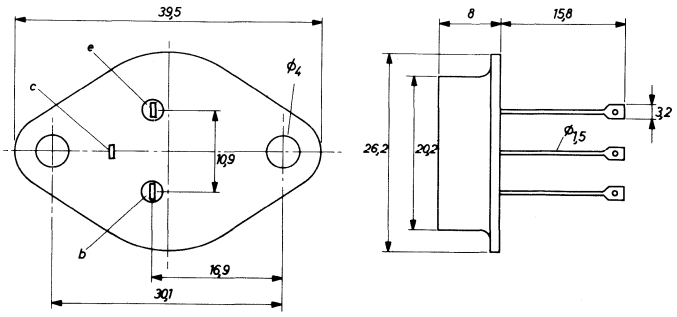

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1675	We	N	S	100	100			50W	150	25....100		1A				120			5
2N 1676	Sp	P	S	4,5	4,5			100	140							16			5,9
2N 1677	Sp	P	S	4,5	4,5			100	140				25			16			5,9
2N 1678		P	G	60	60			120	85	25		20							5
2N 1679		N	S	100	55			1W	175	40....120		600				50			5
2N 1680		N	S	60	35			1W	175	40....120		600				50			5
2N 1681		P	G	30	15			180	100	30....120		10							5
2N 1682		N	S	25	20			500	175	20		10				200			5
2N 1683	Rc	P	G	13	12	4	100	150	85	50	0,5	40				50		4	5
2N 1684	Sy	P	G	25	25			100	100										5
2N 1685	Sy	P	G	25	20			100	100	60....180		30							5
2N 1690	Tx	N	S	80	80			40W	200	20.....60		500							2
2N 1691	Tx	N	S	120	120			40W	200	20.....60		500							2
2N 1692	Mo	P	G	25	25	3	250	3W	100							500		109	4
2N 1693	Mo	P	G	25	25	2	250	3W	100							450		109	4
2N 1694	Ge	N	G	20	20			75	85	17.....50		1							5
2N 1699	Sy	P	G	40	40			100	100	20....175		1,5	20						3
2N 1700	Rc	N	S	60	60	6	1A	5W	200	20.....80	4	100				400		4	5
2N 1701	Rc	N	S	60	60	6	2,5A	25W	200	20.....80	4	300				100		6	5
2N 1702	Rc	N	S	60	60	6	5A	75W	200	15.....60	4	800						3	5
2N 1703	Rc	N	S	60	60			75W	200	15.....60		800							5
2N 1704		N	S	45	45			3,3	175	50....200		1	40						5
2N 1705	Mo	P	G	18	12	5	400	200	100				70....150	6	1			4	1
2N 1706	Mo	P	G	25	18	5	400	200	100	60....120	1	20	50....150	5	10			4	1
2N 1707	Mo	P	G	30	25	10	400	200	100	40....150	5	10	30....150	5	10			4	1
2N 1708	Mo	N	S	25	12	3	200	1W	175	20	1	10				200		17	5
2N 1708A		N	S	40	20			300	175	30....120		10				300			5
2N 1709		N	S	75	30			15W	175	7,5....75		350				175			4
2N 1710		N	S	60	30			15W	175	4.....100		350				140			4
2N 1711	Mo	N	S	75	50	7		800	200	100...300	10	150	50....200	5	1	300		4	5
2N 1711A	Tx	N	S	75	50			1W	200	100...300		150	50			70			3
2N 1711B		N	S	120	55			1W	200	100...300		150	50			70			3
2N 1713		P	G	30	12			80	85	20		1,5	40						
2N 1714	Tx	N	S	90	60	6	750	10W	175	20.....60	5	200				16		4	2
2N 1715	Tx	N	S	150	100	6	750	10W	175	20.....60	5	200				16		4	2
2N 1716	Tx	N	S	90	60	6	750	10W	175	40....120	5	200				16		4	2
2N 1717	Tx	N	S	150	100	6	750	10W	175	40....120	5	200				16		4	2
2N 1718	Tx	N	S	90	60	6	750	10W	175	20.....60	6	200				16		62	2
2N 1719	Tx	N	S	150	100	6	750	10W	175	20.....60	5	200				16		62	2
2N 1720	Tx	N	S	90	60	6	750	10W	175	40....120	5	200				16		62	2

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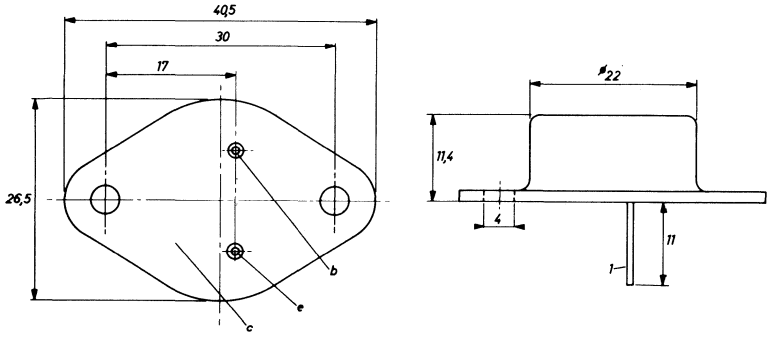

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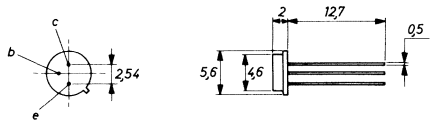

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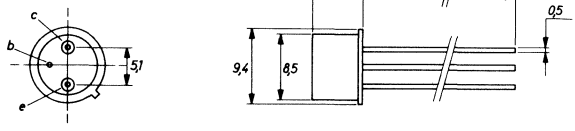

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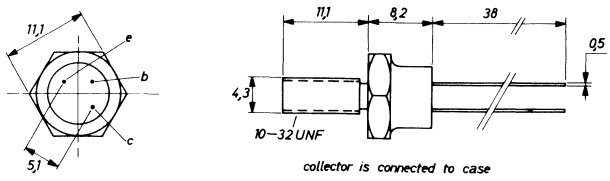

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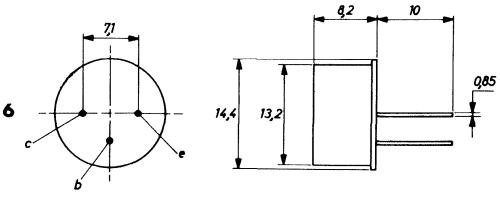

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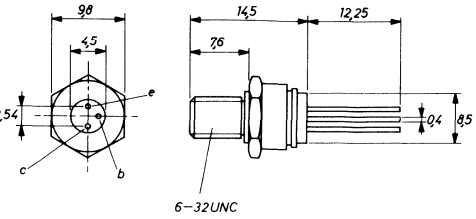

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1721	Tx	N	S	150	100	6	750	10W	175	40....120	5	200				16		62	2
2N 1722	Tx	N	S	120	80	10	5A	50W	175	20.....90	15	2A				10	50	24	2
2N 1722A	Tx	N	S	180	120	10	5A	50W	175	30.....90	15	2A				10	50	24	2
2N 1723	Tx	N	S	120	80	10	5A	50W	175	50....150	15	2A				10	50	24	2
2N 1724	Tx	N	S	120	80	10	5A	50W	175	20.....90	15	2A				10	50	27	2
2N 1724A	Tx	N	S	180	120	10	5A	50W	175	30.....90	15	2A				10	50	27	2
2N 1725	Tx	N	S	120	80	10	5A	50W	175	50....150	15	2A				10	50	27	2
2N 1726	Sp	P	G	20	20			60	100	50		1							3
2N 1727	Sp	P	G	20	20			60	100	20		1							3
2N 1728	Sp	P	G	20	20			60	100	20		1							3
2N 1729		P	G	25	15			150	85	30		100							5
2N 1730		N	G	20	15			150	85	30		100							5
2N 1731		P	G	30	30			150	85	40		10							1
2N 1732		N	G	30	30			150	85	40		10							1
2N 1742	Mo	P	G	20	20	0,5	50	60	125									4	3
2N 1743	Sp	P	G	20	20			60	125	10		2							3
2N 1744	Sp	P	G	20	20			60	125	10		2							3
2N 1745	Sp	P	G	20	20			60	100	10		2							3
2N 1746	Sp	P	G	20	20			60	100	10		1							3
2N 1747	Sp	P	G	20	20			60	100	10		1							3
2N 1748	Sp	P	G	25	25			60	100				30			80			3
2N 1748A	Sp	P	G	25	25			60	100				50			100			3
2N 1749	Sp	P	G	40	40			75	100				30			80			3
2N 1750		P	G	14	6			15	75	18.....40		0,5							1
2N 1751	Mo	P	G	80	60	2,5	25A	106W	110	30.....90	1,5	20A	20	6	500				5
2N 1752	Sp	P	G	12	12			60	100				50						1
2N 1753		P	G	30	18			30	85	50....220		0,1							3
2N 1754	Sp	P	G	13	13			50	85	20		10							5
2N 1755		P	G	40	35			28W	95	30.....75		500							5
2N 1756		P	G	60	50			28W	95	30.....75		500							5
2N 1757		P	G	80	65			28W	95	30.....75		500							5
2N 1758		P	G	100	75			28W	95	30.....75		500							5
2N 1759		P	G	40	35			28W	95	60....150		500							5
2N 1760		P	G	60	50			28W	95	60....150		500							5
2N 1761		P	G	80	65			28W	95	60....150		500							5
2N 1762		P	G	100	75			28W	95	60....150		500							5
2N 1763		N	S	40	25			300	175										5
2N 1764		N	S	20	15			300	175										5
2N 1768	Rc	N	S	60	40	12	3A	40W	200	35....100		750						25	5
2N 1769	Rc	N	S	100	55	12	3A	40W	200	35....100		750						25	5
2N 1779	Sy	P	G	25	20			100	100	20.....60		30							4
2N 1780	Sy	P	S	25	25			100	100	30....110		30							5
2N 1781	Sy	P	G	25	25			100	100	40		20							5
2N 1782	Sy	P	G	30	20			100	100	30....150		10							5
2N 1783	Sy	P	G	30	15			100	100	20		10	30						5

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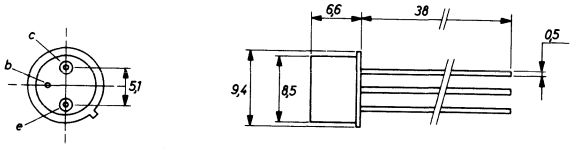

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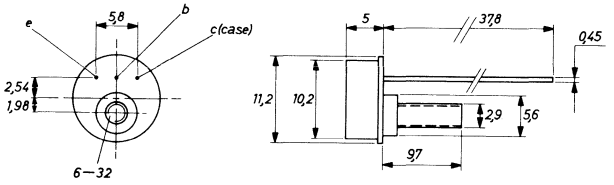

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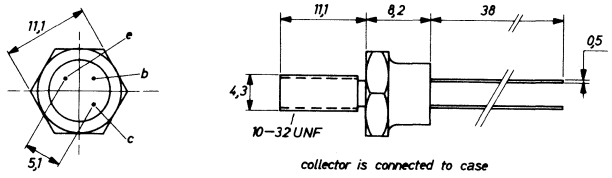

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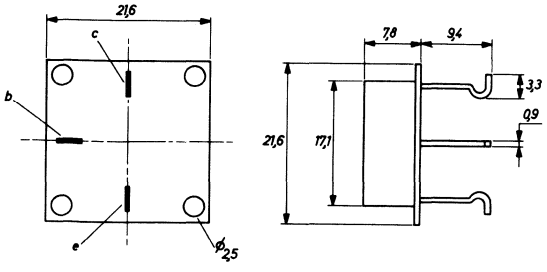

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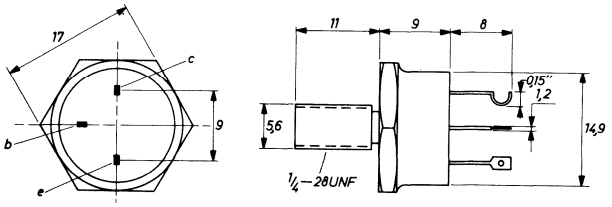

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1784	Sy	P	G	30	20			100	100	20		10							5
2N 1785	Sp	P	G	10	10			45	85	40		1							3
2N 1786	Sp	P	G	10	10			45	85	15		1							3
2N 1787	Sp	P	G	15	15			45	85	25		1							3
2N 1788	Sp	P	G	35	35			50	100	50		1							3
2N 1789	Sp	P	G	35	35			60	100	20		1							3
2N 1790	Sp	P	G	35	35			60	100	40		1							3
2N 1808	Tx	N	G	25				150	85										5
2N 1809	Wb	N	S	50	50			250W	175	10		10A							5
2N 1810	Wb	N	S	100	100			250W	175	10		10A							5
2N 1811	Wb	N	S	150	150			250W	175	10		10A							5
2N 1812	Wb	N	S	200	200			250W	175	10		10A							5
2N 1813	Wb	N	S	250	250			250W	175	10		10A							5
2N 1814	Wb	N	S	300	300			250W	175	10		10A							5
2N 1816	Wb	N	S	50	50			250W	175	10		15A							5
2N 1817	Wb	N	S	100	100			250W	175	10		15A							5
2N 1818	Wb	N	S	150	150			250W	175	10		15A							5
2N 1819	Wb	N	S	200	200			250W	175	10		15A							5
2N 1820	Wb	N	S	250	250			250W	175	10		15A							5
2N 1821		N	S	300	300			250W	175	10		15A							5
2N 1823	Wb	N	S	50	50			250W	175	10		20A							5
2N 1824	Wb	N	S	100	100			250W	175	10		20A							5
2N 1825	Wb	N	S	150	150			250W	175	10		20A							5
2N 1826	Wb	N	S	200	200			250W	175	10		20A							5
2N 1827		N	S	250	250			250W	175	10		20A							5
2N 1828		N	S	300	300			250W	175	10		20A							5
2N 1830	Wb	N	S	50	50			250W	175	10		25A							5
2N 1831	Wb	N	S	100	100			250W	175	10		25A							5
2N 1832	Wb	N	S	150	150			250W	175	10		25A							5
2N 1833	Wb	N	S	200	200			250W	175	10		25A							5
2N 1834		N	S	250	250			250W	175	10		25A							5
2N 1835		N	S	300	300			250W	175	10		25A							5
2N 1837		N	S	80	30			800	300	40....120		150				140			5
2N 1837A		N	S	80	30			800	175	40....120		150				140			5
2N 1837B		N	S	80	30			800	200	40....120		150				140			5
2N 1838		N	S	45	20			600	175	40....150		100				90			5
2N 1839		N	S	45	20			600	175	12.....50		100				90			5
2N 1840		N	S	25	15			600	175	10....100		150				90			5
2N 1841	We	N	S	100	50			2W	150	15.....50		15							4
2N 1853	Rc	P	G	18	6	2	100	150	85	30....400	0,4	6						4	5
2N 1854	Rc	P	G	18	6	0,8	100	150	85	40	0,5	20				40		4	5
2N 1864	Sp	P	G	20	20			60	100	10		1	20						3
2N 1865	Sp	P	G	20	20			60	100	40		1							3
2N 1866	Sp	P	G	35	35			60	100	40		1							3
2N 1867	Sp	P	G	35	35			60	100	10		1							3
2N 1868	Sp	P	G	20	20			60	100	10		2							3
2N 1886	Tr	N	S	60	60			20W	175	20.....80		500				2			4
2N 1889	Tx	N	S	100	80	7		800	200	40....120	10	150	30....100	5	1	50		4	3
2N 1890	Tx	N	S	100	80	7		800	200	100...300	10	150	50....200	5	1	60		4	3
2N 1891		N	G	25	15			150	85	25		100							5
2N 1892		P	G	30	15			150	85	40....200		10	30						5
2N 1893	Mo	N	S	120	80	7	500	3W	200	40....120	10	150	30....100	5	1	50	219	4	2,5
2N 1893A	Ns	N	S	140	80			800	200	40....120		150	30			100			4
2N 1894		N	S	60	60				200	12.....60		1A							2
2N 1895		N	S	80	80				200	12.....60		1A							2
2N 1896		N	S	60	60				200	45....135		1A				25			2
2N 1897		N	S	80	80				200	45....135		1A				25			2
2N 1898		N	S	100	100				200	45....135		1A				25			2
2N 1899		N	S	140	50			125W	150	10.....30		10A				50			5
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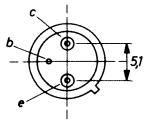
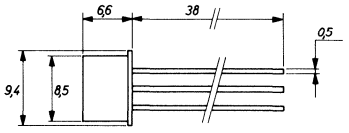
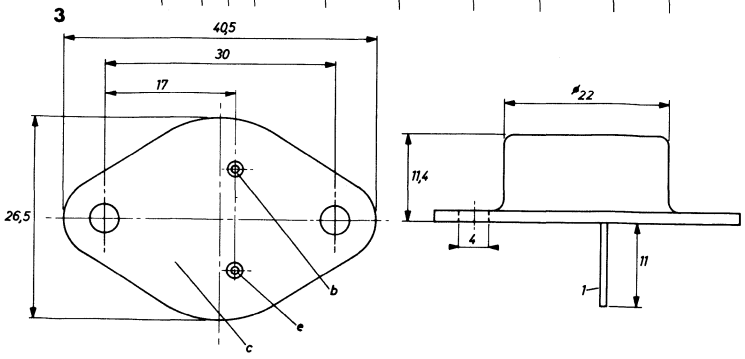




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1901		N	S	140	50			125W	150	20.....60		10A				50			5
2N 1902		N	S	140	50			125W	150	10.... 30		10A				50			5
2N 1903		N	S	140	50			125W	150	8		10A				50			4
2N 1904		N	S	140	50			125W	150	20.....60		10A				50			5
2N 1905	Rc	P	G	100	50	1,5	6A	30W	100	50....150	2	1A	30			2		3	2
2N 1906	Rc	P	G	130	60	1,5	6A	30W	100	75....250	2	1A	50			3		3	2
2N 1907	Tx	P	G	100	40	1,5	20A	60W	100	30....170	1,5	10A				10		3	4
2N 1908	Tx	P	G	130	50	1,5	20A	60W	100	30....170	1,5	10A				10		3	4
2N 1908A		P	G	130	50			60W		30....170		10A	2						4
2N 1917	So	P	S	25	8	25		250	175				25			16		4	5,9
2N 1918	So	P	S	25	8	25		250	175				25			10		4	5,9
2N 1919	So	P	S	40	18	40		250	175									4	5,9
2N 1920	So	P	S	40	18	40		250	175									4	5,9
2N 1921	So	P	S	50	50	50		250	175									4	5,9
2N 1922	So	P	S	80	80	80		250	175									4	5,9
2N 1923		N	S	85	85			750	150	4.....90			28						1
2N 1924	Mo	P	G	60	40	25	500	225	100	34.....65	1	20	30.....64	5	1			4	2
2N 1925	Mo	P	G	60	40	25	500	225	100	53.....90	1	20	44.....88	5	1			4	2
2N 1926	Mo	P	G	60	40	25	500	225	100	72....121	1	20	60....120	5	1			4	2
2N 1936	Tx	N	S	125	60	6	20A	150W	175	7.....50	3	10A	15.....90	10	1A	18	37,5	28	2
2N 1937	Tx	N	S	125	80	6	20A	150W	175	7.....50	3	10A	15.....90	10	1A	18	37,5	28	2
2N 1940		P	G	30	15			3,6W	100	5		40							4
2N 1941		N	S	45	30			600	175	30....150		10	40			60			1
2N 1942		P	G	20	10			200	85	20.....60		200							5
2N 1943		N	S	60	60			800	200	30.....90		200	12						1
2N 1944		N	S	20	20			600	175	150...450		1	100			60			5
2N 1945		N	S	30	30			600	175	150...450		1	100			60			5
2N 1946		N	S	40	40			600	175	150...450		1	100			60			5
2N 1947		N	S	20	20			600	175	500...800		100	100			60			5
2N 1948		N	S	30	30			600	175	500...800		100	100			60			5
2N 1949		N	S	40	40			600	175	500...800		100	100			60			5
2N 1950		N	S	20	20			600	175	250...500		100	75			60			5
2N 1951		N	S	30	30			600	175	250...500		100	75			60			5
2N 1952		N	S	40	40			600	175	250...500		100	75			60			5
2N 1953		N	S	20	20			600	175	15....150		10	28			40			1
2N 1954		P	G	60	20			200	100	30....120		20							5
2N 1955		P	G	60	18			200	100	50....200		20							5
2N 1956		P	G	60	16			200	100	30....120		20							5
2N 1957		P	G	60	14			200	100	30....120		20							5
2N 1958	Sy	N	S	60	40			600	175	20.....60		150				100			5
2N 1958A	Sy	N	S	60	40			600	175	20.....60		150				100			5
2N 1959	Mo	N	S	60	40	5	500	2W	175	40....120	10	150				100		4	5
2N 1959A	Sy	N	S	60	40			600	175	40....120		150				100			5
2N 1960	Sy	P	G	15	15			150	100	25		10							5
2N 1961	Sy	P	G	12	12			150	100	20		10							5
2N 1962	Sy	N	S	40	20			400	175	20.....60		10				200			5
2N 1963	Sy	N	S	30	15			400	175	25		10				200			5
2N 1964	Sy	N	S	60	40			400	175	20.....60		150				100			5
2N 1965	Sy	N	S	60	40			400	175	40....120		150				100			5
2N 1969	Sy	P	G	30	15			150	85	50....200		0,2							5

3



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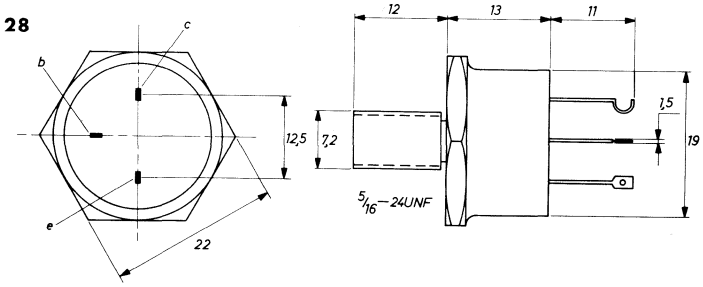

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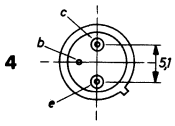
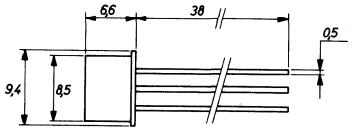
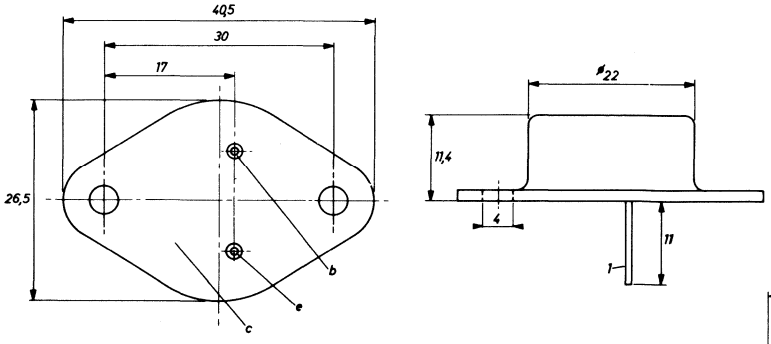




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 1970	Mo	P	G	100	50	40	15A	170W	110	17.....40	2	5A						11	5
2N 1971	So	P	G	80	40	40	5A		100	25.....60	2	500						3	2
2N 1972	Tr	N	S	60	30			600	175	110...350		50	40			50			3
2N 1973	Tx	N	S	100	80			800	200	75		10	76			60			1
2N 1974	Tx	N	S	100	80			800	200	35		10	36			50			1
2N 1975	Tx	N	S	100	80			800	200	15		10	18			40			1
2N 1978	Fa	N	S	60	40			30W	200	20		500				40			4
2N 1980	Mo	P	G	50	30	20	15A	170W	110	50....100	2	5A						11	5
2N 1981	Mo	P	G	70	40	20	15A	170W	110	50....100	2	5A						11	5
2N 1982	Mo	P	G	90	50	20	15A	170W	110	50....100	2	5A						11	5
2N 1983	Mo	N	S	50	25	5	1A	2W	150				70....210	5	1	40	208	4	1
2N 1984	Mo	N	S	50	25	5	1A	2W	150				35....100	5	1	40	208	4	1
2N 1985	Fa	N	S	50	25			600	150				15			40			1
2N 1986	Fa	N	S	50	25			600	150	60....240		150				40			3
2N 1987	Fa	N	S	50	25			600	150	20.....80		150				40			3
2N 1988	Fa	N	S	100	45			600	150	35....120		30	20			40			3
2N 1989	Fa	N	S	100	45			600	150	20.....60		30	10			40			3
2N 1990	Mo	N	S	100		3	1A	2W	150	20	10	30					208	12	5
2N 1991	Mo	P	S	30	20	5	600	2W	175	15.....60	10	150	20	10	5			4	5
2N 1992		N	S	15	15			350	200	30....120		1				300			5
2N 1993		N	G	30	18			150	100	50....300		10							5
2N 1994	Tx	N	G	30	15			150	85	15		10							5
2N 1995	Tx	N	G	25	15			150	85	25		10							5
2N 1996	Tx	N	G	20	15			150	85	35		10							5
2N 1997	Tx	P	G	45	40	45	500	250	100	40....200	1	100						4	5
2N 1998	Tx	P	G	35	35	30	500	250	100	70....225	1	100				5,6		4	5
2N 1999	Tx	P	G	30	20	20	500	250	100	100...350	1	100				10		4	5
2N 2000	Tx	P	G	50	20	7	1A	300	100	50....300	0,3	100						4	5
2N 2001	Tx	P	G	30	20		1A	300	100	100	0,3	100						4	5
2N 2002	So	P	S	30	5	30		250	200									4	5,9
2N 2003	So	P	S	30	5	30		250	200									4	5,9
2N 2004	So	P	S	50	15	50		250	175	12		1	15					4	5,9
2N 2005	So	P	S	50	15	50		250	200									4	5,9
2N 2006	So	P	S	60	35	60		250	200									4	5,9
2N 2007	So	P	S	60	35	60		250	200									4	5,9
2N 2008		N	S	175	110			800	200	30.....90		10	20			40			1
2N 2015	Rc	N	S	100	50	10	10A	150W	200	15.....50	4	5A	12.....60	4	1A			11	2
2N 2016	Rc	N	S	130	65	10	10A	150W	200	15.....50	4	5A	12.....60	4	1A			11	2
2N 2017	Ns	N	S	60	60			1W	200	50....200		200							1
2N 2018	Tr	N	S	150	150			20W	175	20.....60		500				2			4
2N 2019	Tr	N	S	200	200			20W	175	20.....60		500				2			4
2N 2020	Tr	N	S	150	125			20W	175	40.....90		500				3			4
2N 2021	Tr	N	S	200	140			20W	175	40.....90		500				3			4
2N 2022		P	G	15	12			150	100	25....150		10				250			5
2N 2032	Tr	N	S	45	45			45W	200	20		2A				3			4

3



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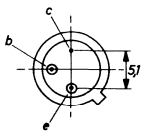

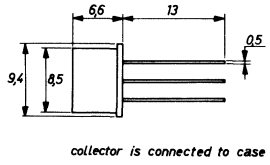

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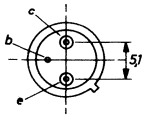

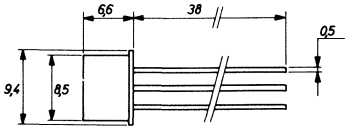

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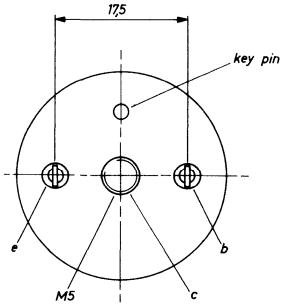

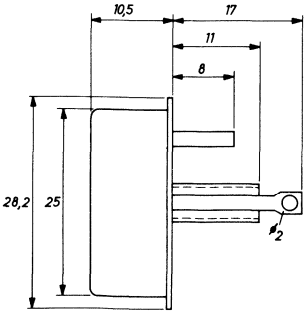

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max.	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 2033	So	N	S	80	60	10	2A	5W	200	20.....60		500				1	20	4	5
2N 2034	So	N	S	80	60	10	2A	14W	200	20.....60		1A				1	20	4	5
2N 2035		N	S	80	60			17W	200	20.....60		1,5A				1			5
2N 2036		N	S	80	60			17,5W	200	20.....60		2A				1			5
2N 2038	Tr	N	S	45	45			600	200	12.....36		200				2			3
2N 2039	Tr	N	S	75	75			600	200	12.....36		200				2			3
2N 2040	Tr	N	S	45	45			600	200	30.....90		200				2			3
2N 2041	Tr	N	S	75	75			600	200	30.....90		200				2			3
2N 2042	Mo	P	G	105	105	75	200	200	100	20.....50	0,35	5	20.....80	6	1		375	4	1,5
2N 2043	Mo	P	G	105	105	75	200	200	100	40....100	0,35	5	45....180	6	1		375	4	1,5
2N 2048	Sp	P	G	20	15			150	100	50....300		10				150			5
2N 2048A		P	G	30	20			150	100	50....300		10				150			5
2N 2049	Fa	N	S	75	50			800	200	100...300		150	75			50			1
2N 2059		P	G	10	8			60	100	20		10				50			5
2N 2061		P	G	20	10			40W	85	10.....60		500							5
2N 2064A	It	P	G	20	15			90W	100	20.....60		2A							5
2N 2062		P	G	20	10			40W	85	20....200		2A							5
2N 2062A	It	P	G	20	15			90W	100	50....140		2A							5
2N 2063		P	G	40	15			35W	95	10....200		2A							5
2N 2063A	It	P	G	40	20			90W	100	20.....60		2A							5
2N 2064		P	G	40	15			35W	95	20....200		2A							5
2N 2064A	It	P	G	40	20			90W	100	50....140		2A							5
2N 2065		P	G	80	25			35W	95	10....200		2A							5
2N 2065A	It	P	G	80	40			90W	100	20.....60		2A							5
2N 2066		P	G	80	25			35W	95	20....200		2A							5
2N 2066A	It	P	G	80	40			90W	100	50....140		2A							5
2N 2067		P	G	40	25			28W	95	20....100		500							5
2N 2068		P	G	80	55			28W	95	20....100		500							5
2N 2069		P	G	40	30			70W	95	30....200		5A							5
2N 2070		P	G	80	60			70W	95	30....200		5A							5
2N 2071		P	G	40	30			70W	95	30....200		5A							5
2N 2072		P	G	80	60			70W	95	30....200		5A							5
2N 2075	Mo	P	G	80	65	40	15A	170W	110	25....100	2	1,2A						11	2
2N 2075A	Mo	P	G	80	80			170W	110	20.....40		5A							2
2N 2076	Mo	P	G	70	55	35	15A	170W	110	25....100	2	1,2A						11	2
2N 2076A	Mo	P	G	70	70			170W	110	20.....40		5A							2
2N 2077	Mo	P	G	50	45	25	15A	170W	110	25....100	2	1,2A						11	2
2N 2077A	Mo	P	G	50	50			170W	110	20.....40		5A							2
2N 2078	Mo	P	G	40	25	20	15A	170W	110	25....100	2	1,2A						11	2
2N 2078A	Mo	P	G	40	40			170W	110	20.....40		5A							2
2N 2079	Mo	P	G	80	65	40	15A	170W	110	40....160	2	1,2A						11	2
2N 2079A	Mo	P	G	80	80			170W	110	35.....70		5A							2
2N 2080	Mo	P	G	70	55	35	15A	170W	110	40....160	2	1,2A						11	2
2N 2080A	Mo	P	G	70	70			170W	110	35.....70		5A							2
2N 2081	Mo	P	G	50	45	25	15A	170W	110	40....160	2	1,2A						11	2
2N 2081A	Mo	P	G	50	50			170W	110	35.....70		5A							2
2N 2082	Mo	P	G	40	25	20	15A	170W	110	40....160	2	1,2A						11	2
2N 2082A	Mo	P	G	40	40			170W	110	35.....70		5A							2
2N 2083		P	G	30				60	85	25		1				30			1
2N 2084		P	G	40	20			125	100	40....250		1	40						3
2N 2085		N	G	33	23			150	100	50....300		10	20						1
2N 2086	Ns	N	S	120	80			600	175	20		150				150			5
2N 2087		N	S	120	80			600	175	40....120		150				150			5
2N 2089		P	G	20	20			100	85	40		1	40			44			3
2N 2090		P	G	20	20			100	85	40		1	40			44			3

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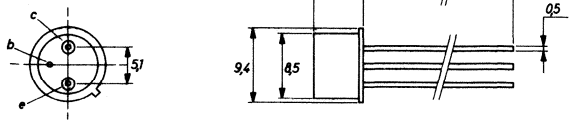

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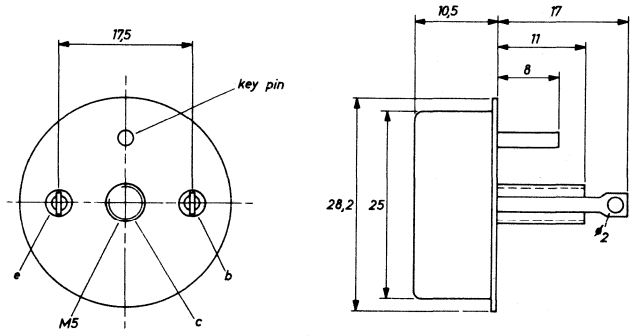

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2091		P	G	20	20			100	85	40		1	40			44			3
2N 2092		P	G	20	20			100	85	40		1	40			44			3
2N 2093		P	G	25	25			100	85	40		1	40			30			3
2N 2095	Sp	P	G	30	15			1W	100							500			4
2N 2096	Mo	P	G	25	12	4	500	750	100	15.....35	1,5	400							
2N 2097	Mo	P	G	40	20	4	500	750	100	20.....50	1,5	400							
2N 2098	Sp	P	G	30	15			1W	100							500			3
2N 2099	Mo	P	G	25	12	4	500	750	100	15.....35	1,5	400						4	5
2N 2100	Mo	P	G	40	20	4	500	750	100	30.....70	1	200						4	5
2N 2100A	Sp	P	G	40	20			300	100	20		400							5
2N 2101	So	N	S	60	40	10	10A	75W	200	15.....60	15	1A				0,25	2	27	2
2N 2102	Ph	N	S	120	80			5W	200	35		10	35						5
2N 2102A		N	S	120	65			1W	200	40....120		150	30						5
2N 2104		P	S	50	35			3W	200	25.....80		150				60			5
2N 2105		P	S	50	35			3W	200	15.....40		150				50			5
2N 2106	Ge	N	S	60	60			1W	150	12.....36		200							1
2N 2107	Ge	N	S	60	60			1W	150	30.....90		200							1
2N 2108	Ge	N	S	60	60			1W	150	75....200		200							1
2N 2109	Wh	N	S	50	50			250W	175	10		10A							5
2N 2110	Wh	N	S	100	100			250W	175	10		10A							5
2N 2122	Wh	N	S	150	150			250W	175	10		10A							5
2N 2112	Wh	N	S	200	200			250W	175	10		10A							5
2N 2113	Wh	N	S	250	250			250W	175	10		10A							5
2N 2114	Wh	N	S	300	300			250W	175	10		10A							5
2N 2116	Wh	N	S	50	50			250W	175	10		15A							5
2N 2117	Wh	N	S	100	100			250W	175	10		15A							5
2N 2118	Wh	N	S	150	150			250W	175	10		15A							5
2N 2119	Wh	N	S	200	200			250W	175	10		15A							5
2N 2120	Wh	N	S	250	250			250W	175	10		15A							5
2N 2121	Wh	N	S	300	300			250W	175	10		15A							5
2N 2123	Wh	N	S	50	50			250W	175	10		20A							5
2N 2124	Wh	N	S	100	100			250W	175	10		20A							5
2N 2125	Wh	N	S	150	150			250W	175	10		20A							5
2N 2126	Wh	N	S	200	200			250W	175	10		20A							5
2N 2127		N	S	250	250			250W	175	10		20A							5
2N 2128		N	S	300	300			250W	175	10		20A							5
2N 2130	Wh	N	S	50	50			250W	175	10		25A							5
2N 2131	Wh	N	S	100	100			250W	175	10		25A							5
2N 2132	Wh	N	S	150	150			250W	175	10		25A							5
2N 2133	Wh	N	S	200	200			250W	175	10		25A							5
2N 2134		N	S	250	250			250W	175	10		25A							5
2N 2135		N	S	300	300			250W	175	10		25A							5
2N 2137	Mo	P	G	30	30			62W	100	30.....60		500						3	2
2N 2137A	Mo	P	G	30	20	15		70W	110	30.....60	2	500						3	2
2N 2138	Mo	P	G	45	45			62W	100	30.....60		500						3	2
2N 2138A	Mo	P	G	44	30	25		70W	110	30.....60	2	500						3	2
2N 2139	Mo	P	G	60	60			62W	100	30.....60		500						3	2
2N 2139A	Mo	P	G	60	45	30		70W	110	30.....60	2	500						3	2
2N 2140	Mo	P	G	75	75			62W	100	30.....60		500						3	2
2N 2140A	Mo	P	G	75	60	40		70W	110	30.....60	2	500						3	2

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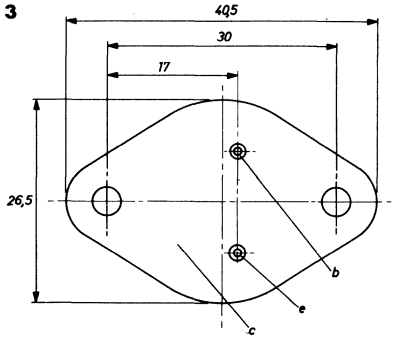

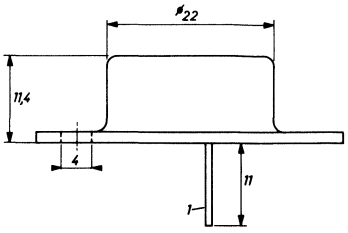

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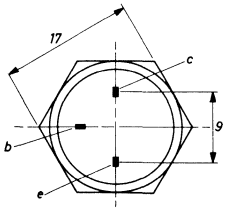

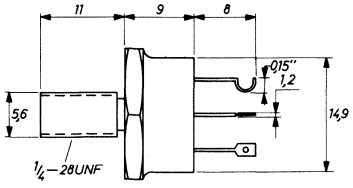

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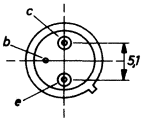

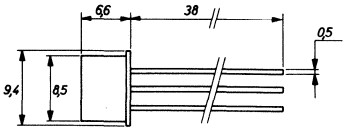

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2141	Mo	P	G	90	90			62W	100	30.....60		500						3	2
2N 2141A	Mo	P	G	90	65	45		70W	110	22	2	2A						3	2
2N 2142	Mo	P	G	30	30			62W	100	50....100		500						3	2
2N 2142A	Mo	P	G	30	20	15		70W	110	33	2	2A						3	2
2N 2143	Mo	P	G	45	45			62W	100	50....100		500						3	2
2N 2143A	Mo	P	G	45	30	25		70W	110	33	2	2A						3	2
2N 2144	Mo	P	G	60	60			72W	100	50....100		500						3	2
2N 2144A	Mo	P	G	60	45	30		70W	110	33	2	2A						3	2
2N 2145	Mo	P	G	75	75			62W	100	50....100		500						3	2
2N 2145A	Mo	P	G	75	60	40		70W	110	33	2	2A						3	2
2N 2146	Mo	P	G	90	90			62W	100	50....100		500						3	2
2N 2146A	Mo	P	G	90	65	45		70W	110	33	2	2A						3	2
2N 2147	Rc	P	G	75	50	1,5	5A	12W	100	100...300	2	1A	75			4		3	2
2N 2148	Rc	P	G	60	40	1,5	5A	12W	100	40....160	2	1A	30			4		3	2
2N 2150	Tx	N	S	125	80	8	2A	30W	175	20.....60	5	1A	20.....80	30	100	10			4
2N 2151	Tx	N	S	125	80	8	2A	30W	175	40....120	3	1A	40....160	30	100	10			4
2N 2152	Mo	P	G	45	30	25	30A	170W	110	50....100	2	5A						11	2
2N 2152A	Mo	P	G	45	30			170W	110	50....100		5A							2
2N 2153	Mo	P	G	60	45	30	30A	170W	110	50....100	2	5A						11	2
2N 2153A	Mo	P	G	60	45			170W	110	50....100		5A							2
2N 2154	Mo	P	G	75	60	40	30A	170W	110	50....100	2	5A						11	2
2N 2154A	Mo	P	G	75	60			170W	110	50....100		5A							2
2N 2155	Mo	P	G	90	90			170W	110	50....100		5A							2
2N 2155A	Mo	P	G	90	65			170W	110	50....100		5A							2
2N 2156	Mo	P	G	45	30	25	30A	170W	110	80....160	2	5A						11	2
2N 2156A	Mo	P	G	45	30			170W	110	80....160		5A							2
2N 2157	Mo	P	G	60	45	30	30A	170W	110	80....160	2	5A						11	2
2N 2157A	Mo	P	G	60	45			170W	110	80....160		5A							2
2N 2158	Mo	P	G	75	60	40	30A	170W	110	80....160	2	5A						11	2
2N 2158A	Mo	P	G	75	60			170W	110	80....160		5A							2
2N 2159	Mo	P	G	90	90			170W	110	80....160		5A							2
2N 2159A	Mo	P	G	90	65			170W	110	80....160		5A							2
2N 2161		N	S	55	35			200	150	60....160		10	75						5
2N 2162	Sp	P	S	30	30			150	140							14			5,9
2N 2163	Sp	P	S	15	15			150	140							14			5,9
2N 2164	Sp	P	S	12	8			150	140							24			5,9
2N 2165	Sp	P	S	30	30			150	140							10			5,9
2N 2166	Sp	P	S	15	15			150	140							10			5,9
2N 2167	Sp	P	S	12	8			150	140							16			5,9
2N 2168	Sp	P	G	20	15			60	100	50		10							5

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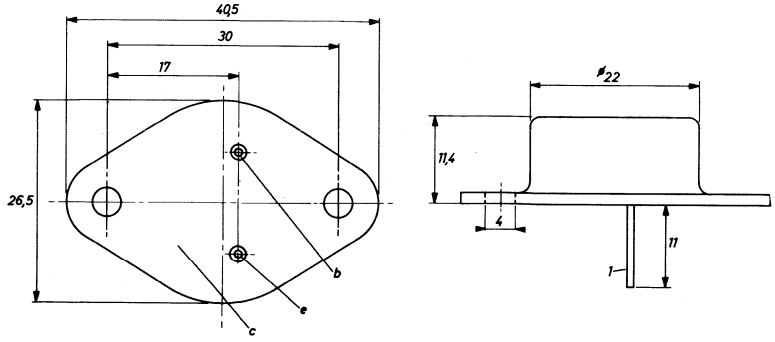

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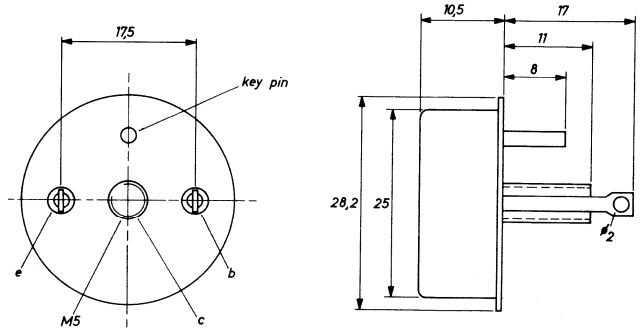
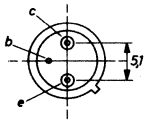
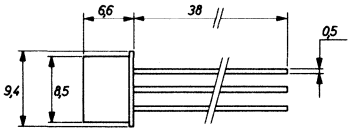


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2169	Sp	P	G	15	15			60	100	40		10							5
2N 2170	Sp	P	G	15	10			60	100	20		10							5
2N 2171	Mo	P	G	50	25	20	400	500	100	110...250	1	20	120...310	5	10			4	2,5
2N 2172		P	G	20	15			200	85	30....150		10							5
2N 2173		P	G	25	15			240	100	30		200							5
2N 2175	Sp	P	S	6	6	6		400	175	30	1,5					10		4	1
2N 2176	So	P	S	6	6	6		385	175	30	1,5					10		9	1
2N 2177	So	P	S	6	6	6		100	160	35	4,5		50					4	1
2N 2178	So	P	S	6	6	6		385	160	35	4,5			50				9	1
2N 2180		P	G	15	6			50	100	100		10	120			60			5
2N 2181		P	S	25	25			150	140	10		5				6			5,9
2N 2182		P	S	25	25			150	140	10		5				6			5,9
2N 2183		P	S	15	10			150	140	10		5				6			5,9
2N 2184		P	S	15	10			150	140	10		5				6			5,9
2N 2185	Sp	P	S	30	30			150	140							6,5			5,9
2N 2186	Sp	P	S	30	30			150	140							6,5			5,9
2N 2187	Sp	P	S	30	30			150	140							6,5			5,9
2N 2188	Tx	P	G	40	25			125	85	40....160		1,5	40			60			3
2N 2189	Tx	P	G	40	25			125	85	60....180		1,5	40			102			3
2N 2190	Tx	P	G	60	25			125	85	40....160		1,5	40			60			3
2N 2191	Tx	P	G	60	25			125	85	60....180		1,5	60			102			3
2N 2192	Mo	N	S	60	40	5	1A	3W	200	100...300	10	150	2,5	10	50			4	2,5
2N 2192A	Mo	N	S	60	40	5	1A	3W	200	100...300	10	150	2,5	10	50			4	2,5
2N 2192B	Mo	N	S	60	40	5	1A	3W	200	100...300	10	150	2,5	10	50			4	2,5
2N 2194	Mo	N	S	60	40	5	1A	3W	200	20.....60	10	150	2,5	10	50			4	2,5
2N 2194A	Mo	N	S	60	40	5	1A	3W	200	20.....60	10	150	2,5	10	50			4	2,5
2N 2194B	Mo	N	S	60	40	5	1A	3W	200	20.....60	10	150	2,5	10	50			4	2,5
2N 2195	Mo	N	S	45	25	5	1A	3W	200	20	10	150	2,5	10	50			4	2,5
2N 2195A	Mo	N	S	45	25	5	1A	3W	200	20	10	150	2,5	10	50			4	2,5
2N 2195B	Mo	N	S	45	25	5	1A	3W	200	20	10	150	2,5	10	50			4	2,5
2N 2196	Se	N	S	80	60			2W	175	30.....90		200	30						2
2N 2197	Se	N	S	80	60			2W	175	75....200		200	30						2
2N 2198		N	S	80	80			5,5	200	35.....55		100				4			3
2N 2199		P	G	15	10			75	100	9		3	20			120			3
2N 2200		P	G	15	10			75	100	9		3				120			3
2N 2201	Ge	N	S	120	100			1W	175	25.....90		200	30						1
2N 2202	Ge	N	S	120	100			1W	175	25.....90		200	30						1
2N 2203	Ge	N	S	120	100			1W	175	25.....90		200	30						1
2N 2204	Ge	N	S	120	100			1W	175	25.....90		200	30						1
2N 2205	Rc	N	S	25	12			1W	175	20		10	2						5
2N 2206	Rc	N	S	25	12			1W	175	40....120		10	2						5
2N 2207		P	G	70	50			260	75	36....370		10							3
2N 2208		P	G	40	10			120	85	15		1,5	30						3
2N 2209		P	G	30	12			150	85	50		24							5
2N 2210		P	G	100	65			75W	100	25.....50		5A							2
2N 2211		P	G	80	60			90W	100	60....140		1A							2
2N 2212	Mo	P	G	120	120	1,5	10A	102W	110	50....200	1	600	15	6	500			14	5
2N 2214		N	S	25	15			250	150	25		10				200			5
2N 2216		P	S	150	100			3W	200	25....120		50				50			5
2N 2217	Tx	N	S	60	30	5	800	800	175	20.....60	10	150				250		12	5

4





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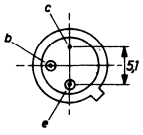
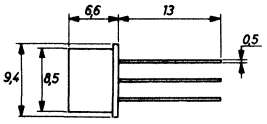
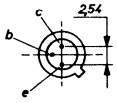
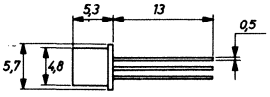




collector is connected to case

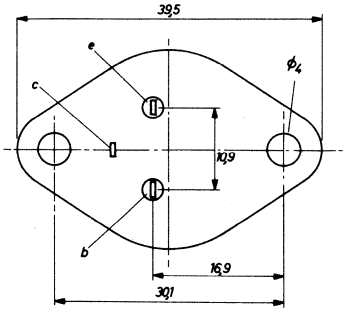
9

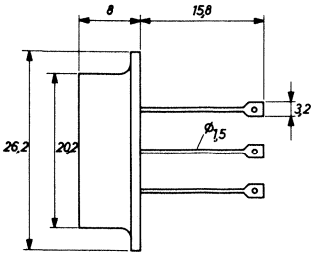




collector is connected to case

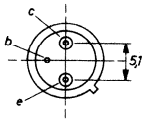
14

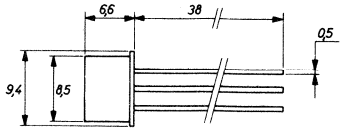




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2218	Mo	N	S	60	30	5	800	3W	200	40....120	10	150				250		4	3,5
2N 2218A	Mo	N	S	75	40	6	800	3W	200	40....120	10	150	30....150	10	1	250		4	3,5
2N 2219	Mo	N	S	60	30	5	800	3W	200	100...300	10	150				250		4	3,5
2N 2219A	Mo	N	S	75	40	6	800	3W	200	100...300	10	150	50....300	10	1	300		4	3,5
2N 2220	Tx	N	S	60	30	5	800	500	175	20.....60	10	150				250		9	5
2N 2221	Mo	N	S	60	30	5	800	1,8W	200	40....120	10	150				250		9	3,5
2N 2221A	Mo	N	S	75	40	6	800	1,8W	200	40....120	10	150	30....150	10	1	250		9	3,5
2N 2222	Mo	N	S	60	30	5	800	2W	200	100...300	10	150				250		9	3,5
2N 2222A	Mo	N	S	75	40	6	800	2W	200	100...300	10	150	50....300	10	1	300		9	3,5
2N 2222B		N	S	75	40			2W		100...300		150	50			300			5
2N 2224	Mo	N	S	65	40	5	500	3W	175	40....120	1	100				250		4	5
2N 2225		P	G	15	4			200	100	100...300		100							5
2N 2226	Wh	N	S	50	50			150W	150	100...500		9A	50						2
2N 2227	Wh	N	S	100	100			150W	150	100...500		9A	50						2
2N 2228	Wh	N	S	150	150			150W	150	100...500		9A	50						2
2N 2229	Wh	N	S	200	200			150W	150	100...500		9A	50						2
2N 2230	Wh	N	S	50	50			150W	150	350		9A	100						2
2N 2231	Wh	N	S	100	100			150W	150	350		9A	100						2
2N 2232	Wh	N	S	150	150			150W	150	350		9A	100						2
2N 2233	Wh	N	S	200	200			150W	150	350		9A	100						2
2N 2234		N	S	40	20			12W	150	15.....60		100				50			5
2N 2235		N	S	40	20			12W	150	40....125		100				100			5
2N 2236		N	S	40	20			575	150	15.....60		100				50			5
2N 2237		N	S	40	20			575	150	40....125		100							5
2N 2238		P	G	30	30			300	100	10		10	25			400			3
2N 2239		N	S	60	50			1W	150	30....200		200							1
2N 2240		N	S	25	20			600	200	40....100		1				50			5
2N 2241		N	S	25	20			600	200	100...200		1				50			5
2N 2242	Mo	N	S	40	15	5	225	360	200	40....120	1	10				250		9	5
2N 2243	Tx	N	S	120	80	7	1A	800	200	20.....60	10	150				50		4	5
2N 2243A	Tx	N	S	120	80	7	1A	800	200	20.....60	10	150				50		4	5
2N 2244		N	S	20	20			500	200	5.....15			40			60			1
2N 2245		N	S	20	20			500	200	10.....30			80			60			1
2N 2246		N	S	20	20			500	200	5.....15			40			60			1
2N 2247		N	S	45	45			500	200	5.....15			40			60			1
2N 2248		N	S	45	45			500	200	10.....30			80			60			1
2N 2249		N	S	45	45			500	200	20.....60			150			60			1
2N 2250		N	S	25	20			500	200	5.....15			40			60			1
2N 2251	Ns	N	S	25	20			500	200	10.....30			80			60			1
2N 2252	Ns	N	S	25	20			500	200	20.....60			150			60			1
2N 2253		N	S	45	50			500	200	5.....15			40			60			1
2N 2254		N	S	45	50			500	200	10.....30			80			60			1
2N 2255	Ns	N	S	45	50			500	200	20.....60			150			60			1
2N 2256	Mo	N	S	7	7	1	100	300	175	30	1	10				320		9	5
2N 2257	Mo	N	S	7	7	1	100	300	175	50	1	10				320		9	5
2N 2258	Mo	P	G	7	7	1	100	150	100	30	1	10				320		9	5
2N 2259	Mo	P	G	7	7	1	100	150	100	50	1	10				320		9	5
2N 2266	So	P	G	100	55		4A	50W	125	25.....75	2	5A				0,2			5
2N 2267	So	P	G	120	55		4A	50W	125	25.....75	2	5A				0,2			5
2N 2268		P	G	100	55			50W	125	40....120		500				0,2			5
2N 2269		P	G	120	55			50W	125	40....120		500				0,2			5
2N 2270	Rc	N	S	60	45	7	1A	5W	200	50....200	10	150	30....180	10	5		175	4	2,3
2N 2271		P		20	15			250	100	50....100		35							1
2N 2272		N	S	40	20			360	200	80....240		10	3						5
2N 2273	Mo	P	G	25	15	1	100	150	100	20.....75	10	1	20.....28	6	1			9	3
2N 2274	Sp	P	S	25	25			150	140	10		5				6			5,9
2N 2275	Sp	P	S	25	25			150	140	10		5				6			5,9
2N 2276	Sp	P	S	15	10			150	140	10		5				6			5,9
2N 2277	Sp	P	S	15	10			150	140	10		5				6			5,9
2N 2278	Sp	P	S	15	15			150	140							7,6			5,9

4





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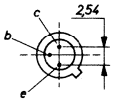
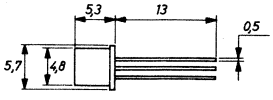
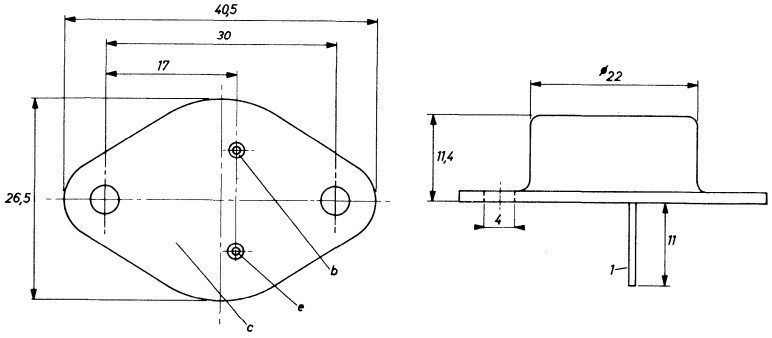




collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 2279	Sp	P	S	15	15			150	140							7,6			5,9
2N 2280	Sp	P	S	10	6			150	140							16			5,9
2N 2281	Sp	P	S	10	6			150	140							16			5,9
2N 2282	So	P	G	60	30	1,5	3A	5W	110	30.....75	1	500	40			20		104	4
2N 2283	So	P	G	100	60	1,4	3A	5W	110	30.....75	1	500	40			20		104	4
2N 2284	So	P	G	200	100	1,5	3A	5W	110	30.....75	1	500	40			20		104	4
2N 2285	Mo	P	G	60	30	1,5	25A	106W	110	35....140	2	10A	20	6	500			3	5
2N 2286	Mo	P	G	100	60	1,5	25A	106W	110	35....140	2	10A	20	6	500			3	5
2N 2287	Mo	P	G	120	80	1,5	25A	106W	110	35....140	2	10A	20	6	500			3	5
2N 2288	Mo	P	G	40	40	0,7	10A	70W	110	20.....60	2	5A	25....100	14	500			3	5
2N 2289	Mo	P	G	80	80	0,7	10A	70W	110	20.....60	2	5A	25....100	14	500			3	5
2N 2290	Mo	P	G	120	120	0,7	10A	70W	110	20.....60	2	5A	25....100	14	500			3	5
2N 2291	Mo	P	G	40	30	1,5	10A	70W	110	50....120	2	5A	50....200	14	500			3	5
2N 2292	Mo	P	G	80	50	1,5	10A	70W	110	50....120	2	5A	50....200	14	500			3	5
2N 2293	Mo	P	G	120	70	1,5	10A	70W	110	50....120	2	5A	50....200	14	500			3	5
2N 2294	So	P	G	40	40	0,7	10A	70W	110	50....120	2	5A	50			0,45		14	5
2N 2295	So	P	G	80	80	0,7	10A	70W	110	50....120	2	5A	50			0,45		14	5
2N 2296	So	P	G	120	120	0,7	10A	70W	110	50....120	2	5A	50			0,45		14	5
2N 2297	Ph	N	S	80	35			800	200	40....120		150				60			3
2N 2303	Mo	P	S	50	35	5	500	600	175	75....200	10	150	75....300	5	1	60		4	5
2N 2304		N	S	60	60			25W	200	20.....80		300							2
2N 2305	So	N	S	60	40	10	15A	83W	200	15.....60	4	800					45	3	2
2N 2306		N	S	75	50			13W	175	12.....75		350				175			5
2N 2308		N	S	100	80			25W	200	20.....60		1A	15						2
2N 2309		N	S	30	30			600	200	25....125		0,2	40						1
2N 2310		N	S	60	60			350	200	12.....36		200							1
2N 2311		N	S	100	100			350	200	12.....36		200							1
2N 2312		N	S	60	60			350	200	30.....90		200							1
2N 2313		N	S	100	100			350	200	30.....90		200							1
2N 2314		N	S	60	40			350	200	20.....60		150	15			40			1
2N 2315		N	S	60	40			350	200	40....120		150	25			50			1
2N 2316		N	S	120	80			350	200	40....120		150	30			50			1
2N 2317		N	S	75	50			350	200	40....120		150	30			60			1
2N 2318		N	S	30	25			360	200	15		0,1				300			5
2N 2319		N	S	30	25			300	200	15		0,1				300			5
2N 2320		N	S	30	25			600	200	15		0,1				300			5
2N 2330	Mo	N	S	30	20	5	500	800	175	50	1	10				100		4	5,9
2N 2331	Mo	N	S	30	20	5	500	500	175	50	1	10				100		9	5,9
2N 2332	So	P	S	15	5	15		150	200									9	5,9
2N 2333	So	P	S	15	5	15		150	200									9	5,9

3



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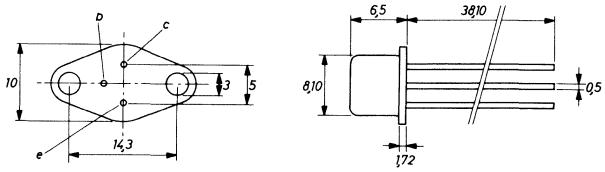

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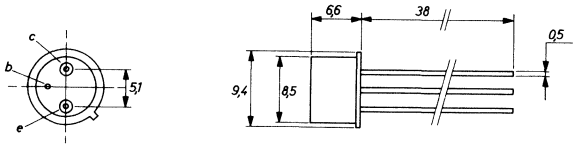

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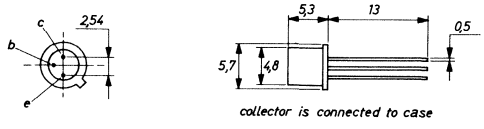

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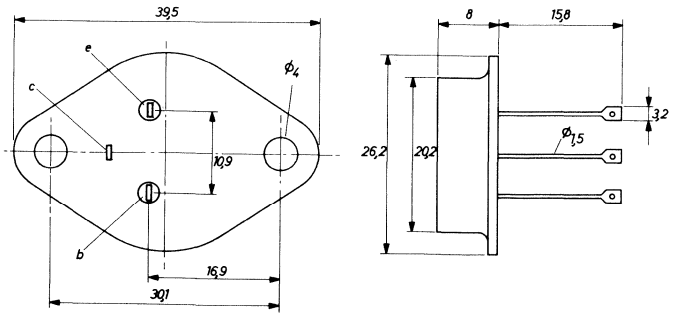
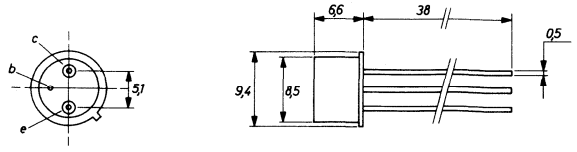


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2334	So	P	S	30	15	30		150	200									9	5,9
2N 2335	So	P	S	30	15	30		150	200									9	5,9
2N 2336	So	P	S	50	35	50		150	200									9	5,9
2N 2337	So	P	S	50	35	50		150	200									9	5,9
2N 2338	Rc	N	S	60	40	6	7,5A	150W	200	75.....60	4	3A	12.....72	4	500			11	2
2N 2339	Rc	N	S	60	40			40W	200	6		1,5A	12			0,7			2
2N 2340		N	S	50	40			15W	175	10.....40		750							4
2N 2341		N	S	50	40			15W	175	40....100		750							4
2N 2342		N	S	100	40			15W	175	40.....40		750							4
2N 2343		N	S	100	40			15W	175	40....100		750							4
2N 2349		N	S	40	24			150	200	120...250		10	60						1
2N 2350	Ge	N	S	60	40			400	200	100...300		150	2,5						5
2N 2350A	Ge	N	S	60	40			400	200	100...300		150	2,5						5
2N 2351	Ge	N	S	80	50			400	200	40....120		150	2,5						5
2N 2351A	Ge	N	S	80	50			400	200	40....120		150	2,5						5
2N 2352	Ge	N	S	60	40			400	200	20.....60		150	2,5						5
2N 2352A	Ge	N	S	60	40			400	200	20.....60		150	2,5						5
2N 2353	Ge	N	S	45	25			400	200	20		150	2,5						5
2N 2353A	Ge	N	S	45	25			400	200	20		150	2,5						5
2N 2354	Sy	N		20	15			180	85	50....150		35							1
2N 2356	Ge	N	S	25	7			600	200							50			5,9
2N 2356A	Ge	N	S	25	7			600	200							50			5,9
2N 2357	Mo	P	G	60	30	2,5	50A	170W	110	30.....90	1,5	20A	20	6	500			14	5
2N 2358	Mo	P	G	100	60	2,5	50A	170W	110	30.....90	1,5	20A	20	6	500			14	5
2N 2359	Mo	P	G	120	80	2,5	50A	170W	110	30.....90	1,5	20A	20	6	500			14	5
2N 2360	Sp	P	G	20	20			60	125	10		2							3
2N 2361	Sp	P	G	20	20			60	125	10		2							3
2N 2362	Sp	P	G	20	20			60	100	10		2							3
2N 2363	Tx	P	G	30	20			75	100	10....200		2	10			250			3
2N 2364	Ge	N	S	120	80			400	200	40....120		150				50			5
2N 2364A	Ge	N	S	120	80			400	200	40....120		150				50			5
2N 2368	Mo	N	S	40	15	4,5		360	200	20.....60	1	10				400		9	5
2N 2369	Mo	N	S	40	15	4,5		360	200	40....120	1	10	5	10	10			9	5
2N 2369A	Mo	N	S	40	15	4,5	200	360	200	40....120	1	10				500		9	5
2N 2370		P	S	15	15			200	200	15			15						
2N 2371		P	S	15	15			200	200	20			20						
2N 2372		P	S	15	15			150	200	15			15						
2N 2373		P	S	15	15			150	200	20			20						
2N 2374		P	G	35	35			250	100	100...300		100	100						
2N 2375		P	G	35	35			250	100	35....110		100	35						1
2N 2376		P	G	35	35			250	100	35....110		100	35						1
2N 2377	Sp	P	S	25	25			150	140	10....100		5	15			8			3
2N 2378	Sp	P	S	10	10			150	140	15		15				7,2			3
2N 2379		P	G	100	80			150W	95	25.....37		5A							5
2N 2380	Ns	N	S	80	40			600	175	20....120		150				100			5
2N 2381	Mo	P	G	30	15	4	500	300	100	40	0,5	200				300		4	5
2N 2382	Mo	P	G	45	20	4	500	300	100	40	0,5	200				300		4	5
2N 2383		N	S	80	60			85W	180	20.....60		1,5A	15						2
2N 2384		N	S	80	60			85W	180	20.....60		1,5A	15						2

4



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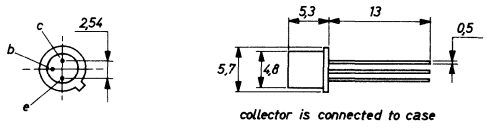

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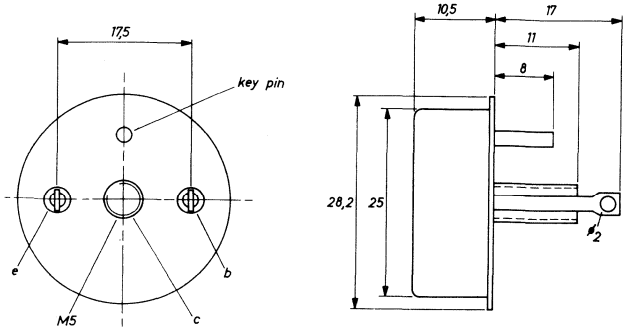

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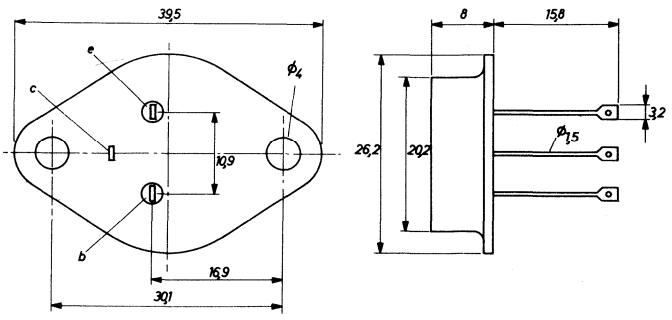

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2387	Tx	N	S	45	45			300	175	40....120			60			30			1
2N 2388	Tx	N	S	45	45			300	175	100...300			150			30			1
2N 2389	Tx	N	S	75	50			450	200	40....120		150	30			60			1
2N 2390	Tx	N	S	75	50			450	200	100...300		150	50			70			1
2N 2391	Tx	P	S	25	20			300	175	15.....45		10	15			140			1
2N 2392	Tx	P	S	25	20			300	175	30.....90		10	30			140			1
2N 2393	Tx	P	S	50	35			450	175	20.....45		150	15			50			1
2N 2394	Tx	P	S	50	35			450	175	30.....90		150	25			60			1
2N 2395	Tx	N	S	60	40			450	200	20.....60		150				40			1
2N 2396	Tx	N	S	60	40			450	200	40....120		150				50			1
2N 2397		N	S	35	15			300	200	25....120		10				200			5
2N 2398	Sp	P	G	20	20			60	100	10		2							3
2N 2399	Sp	P	G	20	20			60	100	10		2							3
2N 2400	Sp	P	G	12	7			150	100	30		10				150			5
2N 2401	Sp	P	G	15	10			150	100	50		10				200			5
2N 2402	Sp	P	G	18	12			150	100	60		10				250			5
2N 2403		N	S	60	60			1W	200	20.....60		600				147			5
2N 2404		N	S	60	60			1W	200	40....120		600				147			5
2N 2405	Mo	N	S	120	90	7	1A	1W	200	60....200	10	150	50....275	5	5	50	175	4	5
2N 2410	Mo	N	S	60	30	5	800	800	200	30....120	10	10				200		4	5
2N 2411	Mo	P	S	25	20	5	100	300	200	20.....60	0,5	10				140		9	5
2N 2412	Mo	P	S	25	20	5	100	300	200	40....120	0,5	10				140		9	5
2N 2413	Tx	N	S	40	18			300	175	30....120		10				300			3
2N 2414		N	S	60	40			500	200	50....250		10	50			50			
2N 2415	Mo	P	G	15	10	0,3	20	75	100	10....200	6	2	15....300	6	2	500		30	3
2N 2416	Mo	P	G	15	10	0,3	20	75	100	8.....200	6	2	10....300	6	2	400		30	3
2N 2423	So	P	G	100	80	30	2A	90W	100	20....100	2	2A						3	5
2N 2424		P	S	40	5			375	160	30....200		5							5
2N 2425		P	S	50	10			375	160	25....110		5							1
3N 2426		N	G	40	25			150	100				35						1
2N 2427	Tr	N	S	40	40			500	200	20.....60			40			50			3
2N 2428		P	G	32	32			500	75	50....150		2	80						1
2N 2429		P	G	32	32			500	75	65....300		2	130						1
2N 2430		N	G	32	32			280	75	60....210		100							1
2N 2431		P	G	32	32			550	90	60....175		300							1
2N 2432	Tx	N	S	30	30	15	100	300	175	50	5	1				20		9	5,9
2N 2432A	Tx	N	S	45	45	18	100	300	175	50	5	1				20		9	5,9
2N 2433		N	S	75	45			500	200	40....120		150	30			80			5
2N 2434		N	S	75	45			500	200	100...300		150	50			90			5
2N 2435		N	S	120	80			500	200	40....120		150	30			80			5
2N 2436		N	S	120	80			500	200	100...300		150	50			90			5
2N 2437		N	S	100	75			500	200	15		10	18			70			3
2N 2438		N	S	100	75			500	200	35		10	36			80			3
2N 2439		N	S	100	75			500	200	75		10	76			90			3
2N 2440		N	S	120	80			300	200	100...300		150	50			90			5
2N 2443	Fa	N	S	120	100			800	200	50....150		50	45			50			3
2N 2444	So	P	G	80	80	1	10A	85W	110	90....120	2	3A	50			4,5		3	2
2N 2445	So	P	G	100	50	12	25A	90W	100	30.....60	2	10A	30			0,1		3	2
2N 2446		P	G	60	50			90W	100	15.....45		5A							5
2N 2447	Mo	P	G	45	24			75	85				25						1

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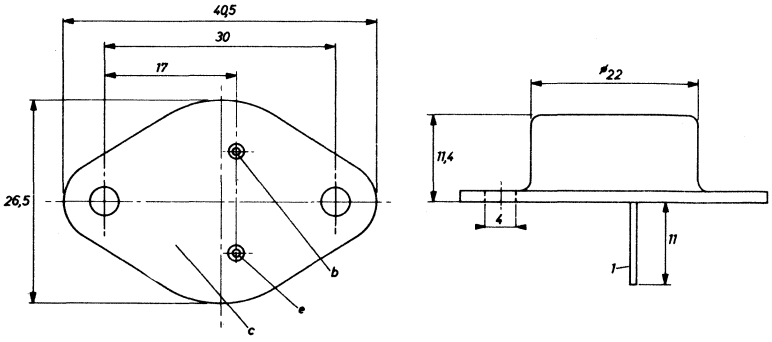

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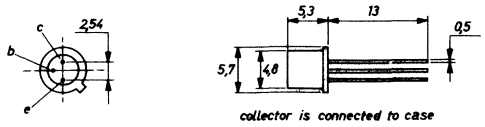

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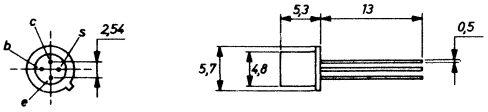

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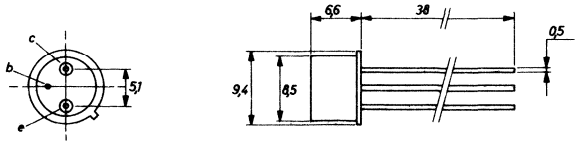
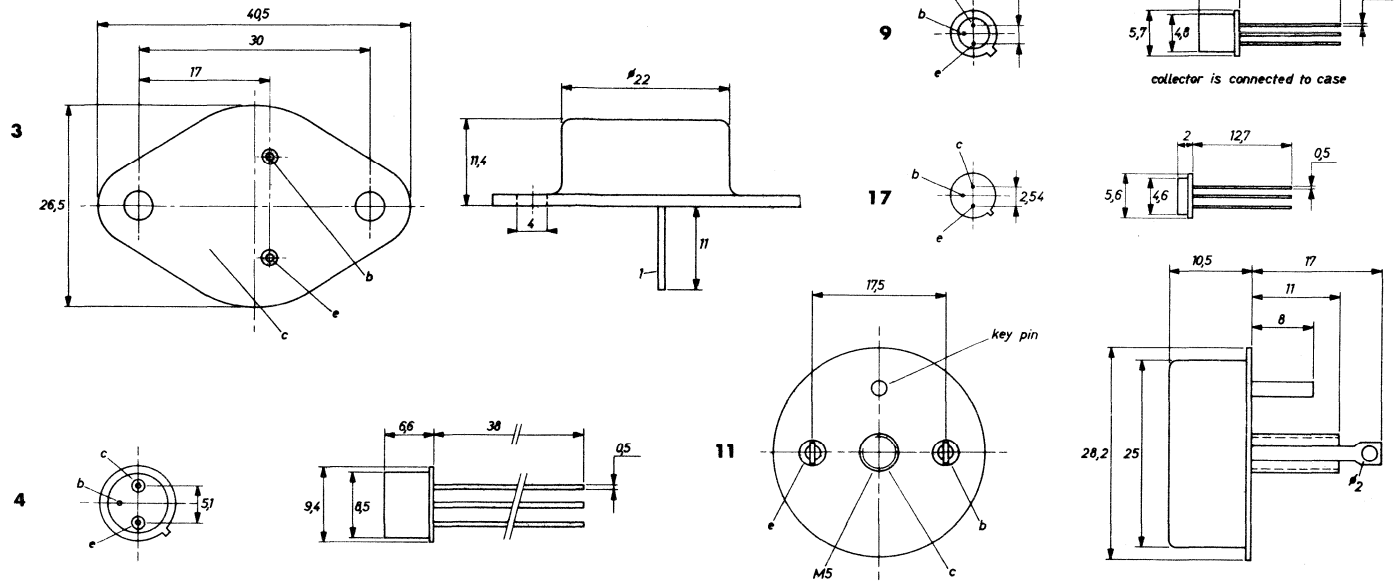


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2448	Mo	P	G	45	24			75	86				25						1
2N 2449	Mo	P	G	35	20			75	85				50						1
2N 2450	Mo	P	G	35	20			75	85				50						1
2N 2451	Sp	P	G	6	5			25	85	25		10	40			80			5
2N 2455	Sy	P	G	15	15			150	100	20....100		2	30			600			5
2N 2456	Sy	P	G	15	15			150	100	20....100		2	30			1000			5
2N 2459	So	N	S	100	60	8		400	200	10		0,1	40.....80	5	5	100		17	1
2N 2460	So	N	S	100	60	8		400	200	20		0,1	70....130	5	5	120		17	1
2N 2461	So	N	S	100	60	8		400	200	40		0,1	115...180	5	5	140		17	1
2N 2462	So	N	S	100	60	8		400	200	60		0,1	160...230	5	5	160		17	1
2N 2463	So	N	S	100	60	8		500	200	10		0,1	30.....80	5	1	100		9	1
2N 2464	So	N	S	100	60	8		500	200	20		0,1	70....130	5	5	120		9	1
2N 2465	So	N	S	100	60	8		500	200	40		0,1	115...180	5	5	140		9	1
2N 2466	So	N	S	100	60	8		500	200	60		0,1	160...230	5	5	160		9	1
2N 2467	So	P	G	60	60	1,5	3A	5W	110	30.....90	1	500	40			20		4	2
2N 2468	So	P	G	100	110	1,5	3A	5W	110	30.....90	1	500	40			20		3	2
2N 2469	So	P	G	200	200	1,5	3A	5W	110	30.....90	1	500	40			20		3	2
2N 2472		N	S	120	100			1W	175	30.....90		200	30			10			2
2N 2473		N	S	120	100			1W	175	30.....90		200	30			10			2
2N 2474		P	S	30	15			250	160	8			8						2
2N 2475	Rc	N	S	15	6	4		300	200	30....150	0,4	20	6	2	20			9	5
2N 2476	Mo	N	S	60	20	5		600	200	20	0,4	150				250		4	5
2N 2477	Mo	N	S	60	20	5		600	200	40	0,4	150				250		4	5
2N 2478	Ns	N	S	120	40			600	175	30		150				200			5
2N 2479	Ns	N	S	80	40			600	175	30....120		150	60			150			5
2N 2481	Mo	N	S	40	15	5		360	200	40....120	1	10	3	10	10			9	5
2N 2482	Rc	N	G	20	15			150		25....200		2	15						3
2N 2483	Ph	N	S	60	60			360	200	40....120			80			12			1
2N 2484	So	N	S	60	60	6		360	200	100...500	5		150			15		9	1
2N 2484A	So	N	S	60	60	6		360	200	100...500	5		150			60		9	1
2N 2485	Ns	N	S	120	120			9W	200	10		500				100			4
2N 2486	Ns	N	S	140	140			9W	200	10		500				100			4
2N 2487	Sp	P	G	15	10			60	100	20		10				360			5
2N 2488	Sp	P	G	15	10			60	100	20		50				360			5
2N 2489	Sp	P	G	20	15			60	100	20		10				300			5
2N 2490	Mo	P	G	70	60	40	15A	170W	110	20.....40	2	5A						11	5
2N 2491	Mo	P	G	60	60	30	15A	170W	110	20.....40	2	5A						11	5
2N 2492	Mo	P	G	80	70	60	15A	170W	110	20.....40	2	5A						11	5
2N 2493	Mo	P	G	100	85	80	15A	170W	110	20.....40	2	5A						11	5
2N 2494		P	G	20	20			83	75	25		1							3
2N 2495		P	G	40	40			125	100	25		1							3
2N 2496		P	G	40	20			100	100	25		1							3
2N 2501	Mo	N	S	40	20	6		360	200	50....150	1	10	3,5	20	10	350		9	5
2N 2509	Ns	N	S	125	80			1,2W	200	25						45			3
2N 2510	Ns	N	S	100	65			1,2W	200	150...500		10				45			3



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2511	Ns	N	S	80	50			1,2W	200	240...750		10				45			3
2N 2512		P	G	70	70			150	75	20		1	40			140			3
2N 2514	So	N	S	80	60	6		400	200	15.....50		5	20.....50	5	5	30		17	1
2N 2515	So	N	S	80	60	6		400	200	30....100		5	40....100	5	5	60		17	1
2N 2516	So	N	S	80	60	8		400	200	60....200		5	80....200	5	5	100		17	1
2N 2517	So	N	S	125	80	8		400	200	15.....50		5	20.....50	5	5	30		17	1
2N 2518	So	N	S	115	80	8		400	200	30....100		5	40....100	5	5	60		17	1
2N 2519	So	N	S	125	80	8		400	200	60....200		5	80....200	5	5	100		17	1
2N 2520	So	N	S	60	60	8		400	200	12		1	18.....90	5	1			17	1
2N 2521	So	N	S	60	60	8		400	200	25		1	36.....90	5	1			17	1
2N 2522	So	N	S	60	60	8		400	200	50		1	76....333	5	1			17	1
2N 2523	So	N	S	60	45	6		400	200	40....120	5		60			45		17	1
2N 2524	So	N	S	60	45	6		400	200	100...300	5		150			45		17	1
2N 2525		N	S	100	80			25W	200	10		350				154			4
2N 2526	Mo	P	G	80	80	5	10A	85	110	20.....50	2	3A	15	12	500			3	5
2N 2527	Mo	P	G	120	120	5	10A	85	110	20.....50	2	3A	15	12	500			3	5
2N 2528	Mo	P	G	160	160	5	10A	85	110	20.....50	2	3A	15	12	500			3	5
2N 2529	Tx	N	S	45	40			150	175	10.....20		1	12						1
2N 2530	Tx	N	S	45	40			150	175	12.....35		1	18						1
2N 2531	Tx	N	S	45	40			150	175	20.....80		1	36						1
2N 2532	Tx	N	S	45	40			150	175	45....185		1	76						1
2N 2533	Tx	N	S	45	40			150	175	20.....55		10	19						1
2N 2534	Tx	N	S	45	40			150	175	45....150		10	39						1
2N 2535		P	G	60	30			10W	100	40....120		400	15						1
2N 2536		P	G	80	40			10W	100	40....120		400	15						1
2N 2537	Mo	N	S	60	30	5		3W	200	50....150	10	150	2,5	20	20			4	5
2N 2538	Mo	N	S	60	30	5		3W	200	100...300	10	150	2,5	20	20			4	5
2N 2539	Mo	N	S	60	30	5		1,8W	200	50....150	10	150	2,5	20	20			9	5
2N 2540	Mo	N	S	60	30	5		1,8W	200	100...300	10	150	2,5	20	20			9	5
2N 2541		P	G	30	14			215	100	60....250		50							5
2N 2551	So	P	S	150	150	150		400	200	15.....45	5	1						9	1
2N 2552	Tx	P	G	40	40	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		113	2
2N 2553	Tx	P	G	60	60	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		113	2
2N 2554	Tx	P	G	80	80	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		113	2
2N 2555	Tx	P	G	100	100	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		113	2
2N 2556	Tx	P	G	40	40	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		112	2
2N 2557	Tx	P	G	60	60	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		112	2
2N 2558	Tx	P	G	80	80	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		112	2
2N 2559	Tx	P	G	100	100	20	3A	20W	100	20.....60	0,5	1A	18.....72	1,5	500	0,2		112	2
2N 2560	Tx	P	G	40	40	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		113	2

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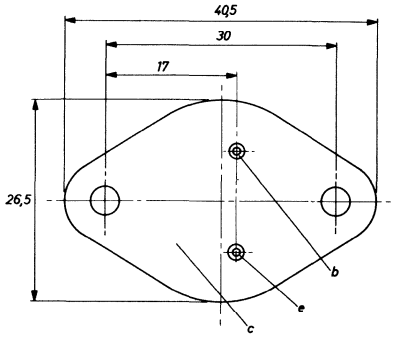

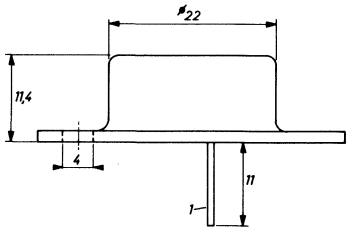

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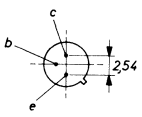

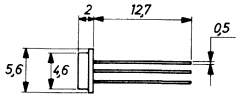

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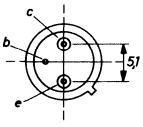

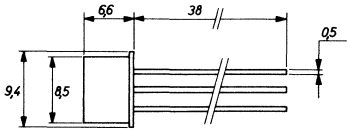

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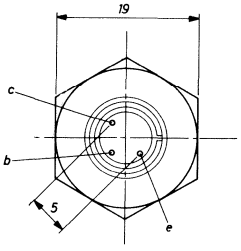

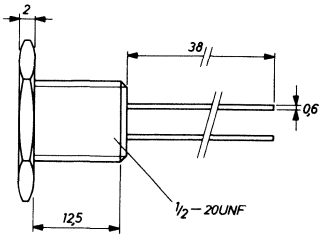

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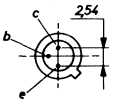

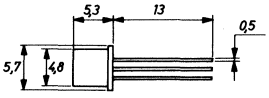

collector is connected to case

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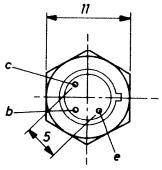
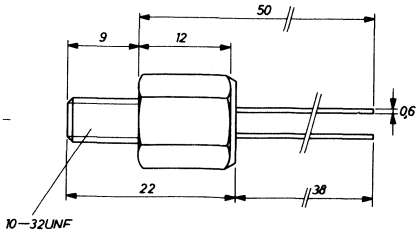
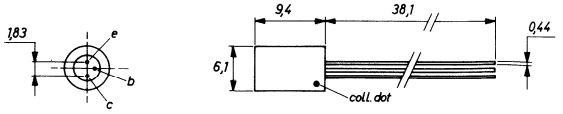




Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2561	Tx	P	G	60	60	20	2,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		113	2
2N 2562	Tx	P	G	80	80	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		113	2
2N 2563	Tx	P	G	100	100	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		113	2
2N 2564	Tx	P	G	40	40	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		112	2
2N 2565	Tx	P	G	60	60	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		112	2
2N 2566	Tx	P	G	80	80	20	2,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		112	2
2N 2567	Tx	P	G	100	100	20	3,5A	20W	100	20.....60	1	3A	25....100	1,5	500	0,2		112	2
2N 2568		N	G	32	32			1W	100	10.....60		40				600			4
2N 2569	Ph	N	S	20	5			300	200	50						100			5,9
2N 2570	Ph	N	S	20	5			300	200	50						100			5,9
2N 2571		N	S	20	15			300	200	50						100			5,9
2N 2572		N	S	20	15			300	200	50						100			5,9
2N 2580		N	S	400	400			150W	150	10.....40		5A							5
2N 2581		N	S	400	400			150W	150	15.....65		5A							5
2N 2582		N	S	500	500			150W	150	10.....40		5A							5
2N 2583		N	S	500	500			150W	150	25.....65		5A							5
2N 2584		N	S	600	600			150W	150	10.....40		5A							5
2N 2585		N	S	600	600			150W	150	25.....65		5A							5
2N 2586	Tx	N	S	60	45			300	175	120...360			150			0,1			1
2N 2587		P	G	30	30			150	100	15....100		8				320			3
2N 2588		P	G	40	20			150	100	50....150		1,5	50			75			3
2N 2589		N	S	150	150			150W	200	17.....51		7A	5			0,2			5
2N 2590	So	P	S	100	60	7		400	200	10		0,1	40.....80	5	5	50		17	3
2N 2591	So	P	S	100	60	7		400	200	20		0,1	70....135	5	5	70		17	3
2N 2592	So	P	S	100	60	7		400	200	40		0,1	115...200	5	5	90		17	3
2N 2593	So	P	S	100	60	7		400	200	60		0,1	160...275	5	5	110		17	3
2N 2594	Tr	N	S	80	90			5W	200	50....150		100	15			40			1
2N 2595	So	P	S	80	60	6		400	200	15.....60		5	20.....50	5	5	30		17	3
2N 2596	So	P	S	80	60	6		400	200	30....120		5	40....100	5	5	40		17	3
2N 2597	So	P	S	80	60	6		400	200	60....240		5	80....200	5	5	60		17	3
2N 2598	So	P	S	125	80	7		400	200	15.....60		5	20.....65	5	5	30		17	3
2N 2599	So	P	S	125	80	7		400	200	30....120		5	40....100	5	5	40		17	3
2N 2599A	So	P	S	125	100	7		400	200	30....120		5	40....100	5	5	40		17	3
2N 2600	So	P	S	125	80	7		400	200	60....240		5	80....200	5	5	60		17	3
2N 2601	So	P	S	60	60	6		400	200	12		1	18.....90	5	1	20		17	3
2N 2602	So	P	S	60	60	6		400	200	25		1	36.....90	5	1	40		17	3
2N 2603	So	P	S	60	60	6		400	200	50		1	76....333	5	1	60		17	3
2N 2604	Tx	N	S	60	45	6	30	400	200	40....120	5		60....350	5	1	30		17	3
2N 2605	Tx	N	S	60	45	6	30	400	200	100...300	5		150...600	5	0,01	30		17	3
2N 2605A	So	P	S	60	45	6		400	200	150...300	5	0,01	200			45		17	3
2N 2610	Tr	N	S	45	40			150	150				4,5						1
2N 2611		N	S	120	100			2W	175	7.....36		200	12			4			2
2N 2612	So	P	G	65	65	30	25A	75W	100	85....250	2	10A						3	2
2N 2613	Rc	P	G	30	25	25	50	120	100				120...300	4	0,5			1	1
2N 2614	Rc	P	G	40	35	25	50	120	100				100...250	6	1			1	1
2N 2617		P	S	25				250	150	15.....80		20	25						1
2N 2618		N	S	60	40			600	200	25		10	30			200			3
2N 2621		P	G	15	15			150	100	15		1							3
2N 2622		P	G	24	24			150	100	15		1							3
2N 2623		P	G	32	32			150	100	20		1							3

1



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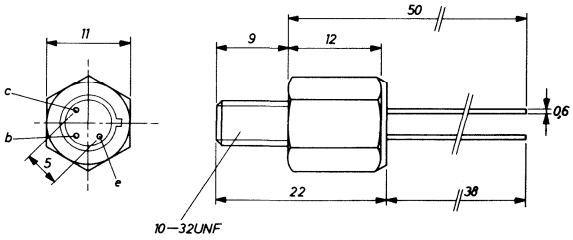

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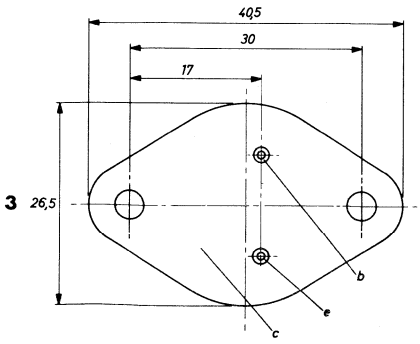

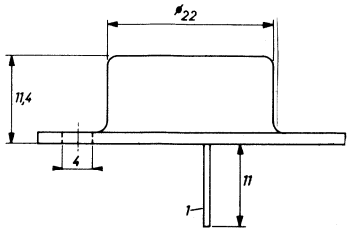

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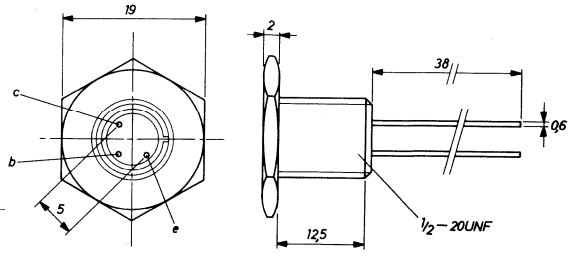

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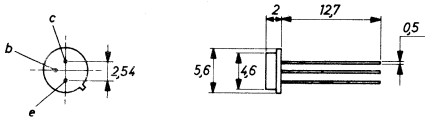
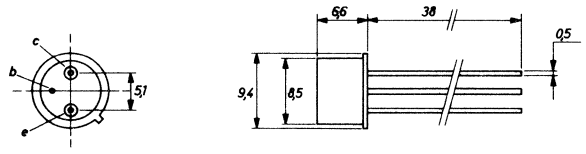


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2624		P	G	15	15			150	100	20		1							3
2N 2625		P	G	24	24			150	100	15		1							3
2N 2626		P	G	32	32			150	100	20		1							3
2N 2627		P	G	15	15			150	100	15		1							3
2N 2628		P	G	24	24			150	100	15		1							3
2N 2629		P	G	32	32			150	100	10		1							3
2N 2631	Rc	N	S	80	80	4	1,5A	9W	200	8		200				200		12	1
2N 2632	So	N	S	90	60	8	5A	40W	175	40....120	2	1A	40			20		73	2
2N 2633	So	N	S	120	80	8	5A	40W	175	40....120	2	1A	40			20		73	2
2N 2634	So	N	S	150	100	8	5A	40W	175	40....120	2	1A	40			20		73	2
2N 2635	Mo	P	G	30	15	2,5	100	150	100	45....300	1	50						9	5
2N 2636	So	P	G	100	100			100W	110	35....140	2	10A				0,6		14	5
2N 2637	So	P	G	100	100		25A	100W	110	35....140	2	10A				0,6		14	5
2N 2638	So	P	G	100	100		25A	100W	110	35....140	2	10A				0,6		14	5
2N 2648		P	G	35	10			5W	100	80....500		1A				10			5
2N 2649	Ns	N	S	65	65			8W	200	10		500				100			4
2N 2650	Ns	N	S	140	140			8W	200	10		500				100			4
2N 2651		N	S	40	20			360	200	25		10				350			5
2N 2654		P	G	25				100	75	25		1							3
2N 2655		N	S	100	100			15W	200	30.....90		200	30						2
2N 2656		N	S	25	15			360	200	40....160		0,1				250			3
2N 2657	Ns	N	S	80	60			1W	200	40....120		1A				20			5
2N 2658	Ns	N	S	100	80			1W	200	40....120		1A				20			5
2N 2659	Tx	P	G	50	50	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		4	2
2N 2660	Tx	P	G	70	70	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		4	2
2N 2661	Tx	P	G	90	90	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		4	2
2N 2662	Tx	P	G	50	50	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		113	2
2N 2663	Tx	P	G	70	70	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		113	2
2N 2664	Tx	P	G	90	90	20	3A	15W	100	30.....90	0,5	500	30....120	3	100	0,3		113	2
2N 2665	Tx	P	G	50	50	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		4	2
2N 2666	Tx	P	G	70	70	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		4	2
2N 2667	Tx	P	G	90	90	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		4	2
2N 2668	Tx	P	G	50	50	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		113	2
2N 2669	Tx	P	G	70	70	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		113	2
2N 2670	Tx	P	G	70	70	20	3A	15W	100	50....150	0,5	500	50....200	3	100	0,3		113	2
2N 2671		P	G	25				100	75	40		1							3
2N 2672		P	G	25				100	90	40		1							3
2N 2672A		P		32	32			100	90	40		1							3
2N 2673	Ge	N	S	60	45			250	200	8.....22		1	9						1
2N 2674	Ge	N	S	60	45			250	200	12.....40		1	18						1
2N 2675	Ge	N	S	60	45			250	200	22.....76		1	37						1
2N 2676	Ge	N	S	60	45			250	200	45....290		1	76						1
2N 2677	Ge	N	S	45	35			250	200	20.....55		1	19						1
2N 2678	Ge	N	S	45	35			250	200	45....150		1	39						1
2N 2691	So	P	G	100	80	1,5	25A	100W	110	30....100	1,5	20A				6		14	5

4



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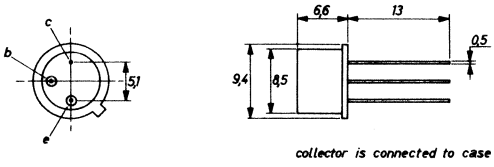

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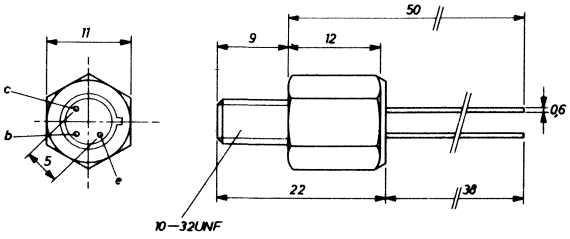

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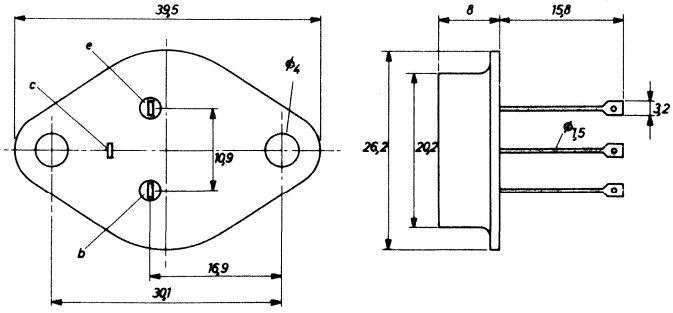

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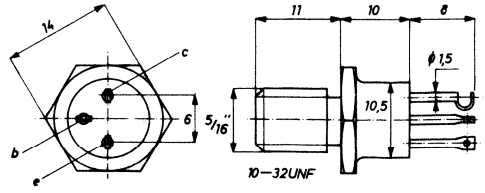

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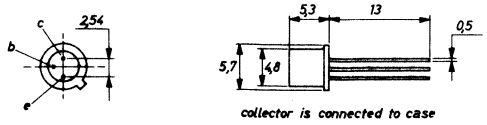

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2691A	So	P	G	120	100	1,5	25A	100W	125	50....100	1,5	20A						14	5
2N 2692	Tx	N	S	45	30			300	175	90....360						42			5
2N 2693	Tx	N	S	45	30			300	175	40						42			5
2N 2694	Tx	N	S	45	20			300	175	20						42			5
2N 2695	Tx	P	S	25	25			360	200	30....130		50	25			100			5
2N 2696	Mo	P	S	25	25	4	500	360	200	30....130	1	50	25....180	10	10	100		9	5
2N 2697	So	N	S	80	60	8	5A	18W	200	40....120	5	1A				20		75	5
2N 2698	So	N	S	100	80	8	5A	18W	200	40....120	5	1A				20		75	5
2N 2699		P	G	15	8			150	100	40....200		10				300			5
2N 2708	Mo	N	S	35	20	3	50	200	200	30....200	2	2	30....180	15	2			30	3
2N 2709		P	S	50	35			240	160	10.....22		0,2							1
2N 2710	Mo	N	S	40	20	5	500	360	200	40	1	50				500		9	5
2N 2711	Sp	N	S	18	18			200	125	30.....90		2	30						1
2N 2712	Ge	N	S	18	18			200	125	75....225		2	80						1
2N 2713	Se	N	S	18	18			200	125	30.....90		2	30						1
2N 2714	Se	N	S	18	18			200	125	75....225		2	80						1
2N 2715	Ge	N	S	18	18			200	125	30.....90		2	30						1
2N 2716	Ge	N	S	18	18			200	125	75....225		2	80						1
2N 2717		P	G	20	15			100	75	50		30				300			5
2N 2618		P	G	20	12			240	100	25		170				150			5
2N 2719		N	S	25	8			300	175	30		60				200			5
2N 2726	Ge	N	S	200	200			1W	200	30.....90		200	30			15			4
2N 2727	Ge	N	S	200	200			1W	200	75....150		200	75			15			4
2N 2728	Mo	P	G	15	5	15	50A	170W	110	40....130	2	20A						71	5
2N 2729	Fa	N	S	30	15			300	200	20....200		3				600			3
2N 2730	So	P	G	80	60		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2731	So	P	G	60	45		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2732	So	P	G	40	30		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2733	So	P	G	80	60		65A	140W	110	30....120	2	25A				0,2		77	5
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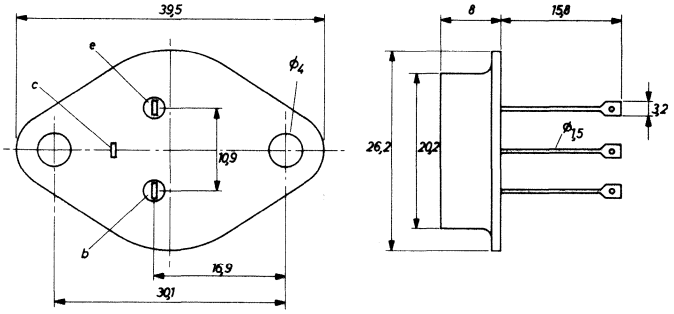

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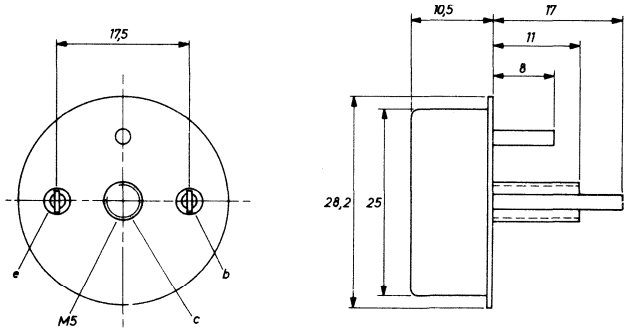

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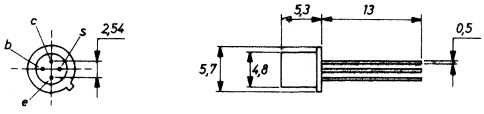

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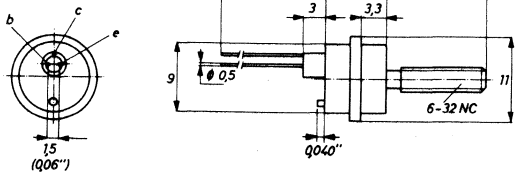

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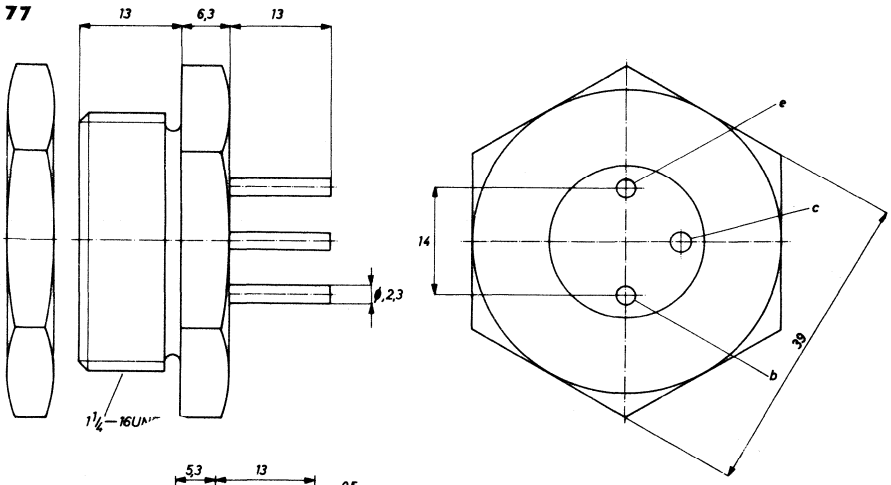

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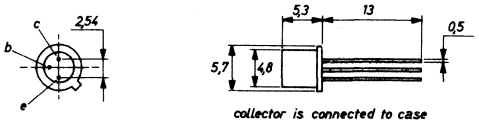

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2735	So	P	G	40	30		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2736	So	P	G	80	60		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2737	So	P	G	60	45		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2738	So	P	G	40	30		65A	140W	110	30....120	2	25A				0,2		77	5
2N 2739	Wb	N	S	50	50			200W	175	10		10A							5
2N 2740	Wb	N	S	100	100			200W	175	10		10A							5
2N 2741	Wb	N	S	150	150			200W	175	10		10A							5
2N 2742	Wb	N	S	200	200			200W	175	10		10A							5
2N 2743		N	S	250	250			200W	175	10		10A							5
2N 2744		N	S	300	300			200W	175	10		10A							5
2N 2745	Wb	N	S	50	50			200W	175	10		15A							5
2N 2746	Wb	N	S	100	100			200W	175	10		15A							5
2N 2747	Wb	N	S	150	150			200W	175	10		15A							5
2N 2748	Wb	N	S	200	200			200W	175	10		15A							5
2N 2749	Wb	N	S	250	250			200W	175	10		15A							5
2N 2750	Wb	N	S	300	300			200W	175	10		15A							5
2N 2751	Wb	N	S	50	50			200W	175	10		20A							5
2N 2752	Wb	N	S	100	100			200W	175	10		20A							5
2N 2753	Wb	N	S	150	150			200W	175	10		20A							5
2N 2754	Wb	N	S	200	200			200W	175	10		20A							5
2N 2755	Wb	N	S	250	250			200W	175	10		20A							5
2N 2756	Wb	N	S	300	300			200W	175	10		20A							5
2N 2757	Wb	N	S	50	50			200W	175	10		10A							5
2N 2758	Wb	N	S	100	100			200W	175	10		10A							5
2N 2759	Wb	N	S	150	150			200W	175	10		10A							5
2N 2760	Wb	N	S	200	200			200W	175	10		10A							5
2N 2761	Wb	N	S	250	250			200W	175	10		10A							5
2N 2762	Wb	N	S	300	300			200W	175	10		10A							5
2N 2763	Wb	N	S	50	50			200W	175	10		15A							5
2N 2764	Wb	N	S	100	100			200W	175	10		15A							5
2N 2765	Wb	N	S	150	150			200W	175	10		15A							5
2N 2766	Wb	N	S	200	200			200W	175	10		15A							5
2N 2767	Wb	N	S	250	250			200W	175	10		15A							5
2N 2768	Wb	N	S	300	300			200W	175	10		15A							5
2N 2769	Wb	N	S	50	50			200W	175	10		20A							5
2N 2770	Wb	N	S	100	100			200W	175	10		20A							5
2N 2771	Wb	N	S	150	150			200W	175	10		20A							5
2N 2772	Wb	N	S	200	200			200W	175	10		20A							5
2N 2773		N	S	250	250			200W	175	10		20A							5
2N 2774		N	S	300	300			200W	175	10		20A							5
2N 2775		N	S	50	50			200W	175	10		25A							5
2N 2776		N	S	100	100			200W	175	10		25A							5
2N 2777		N	S	150	150			200W	175	10		25A							5
2N 2778		N	S	200	200			200W	175	10		25A							5
2N 2779		N	S	250	250			200W	175	10		25A							5
2N 2780		N	S	300	300			200W	175	10		25A							5
2N 2781		N	S	75	40			200W	175	7,5....75		350				75			4
2N 2782		N	S	100	40			200W	175	7,5....75		350				75			4
2N 2783		N	S	100	40			200W	175	7,5....75		350				75			4
2N 2784	Tr	N	S	15	6			200W	200	40		30				1000			5
2N 2786		P	G	35	20			1,5W	90	33....200		100							3
2N 2786A		P	G	35	20			1,5W	90	33....200		100							3
2N 2787	Ns	N	S	75	35			800	175	20.....50		150	15			250			5
2N 2788	Ns	N	S	75	35			800	175	40....120		150	30			250			5
2N 2789	Ns	N	S	75	35			800	175	100...300		150	80			250			5

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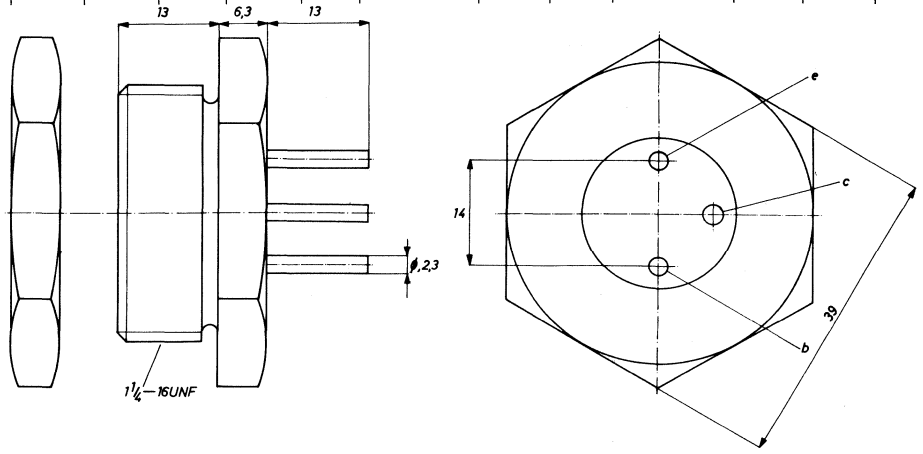

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)	Case	Use
2N 2790	Ns	N	S	75	35			500	175	20.....60		150	15			250			5
2N 2791	Ns	N	S	75	35			500	175	40....120		150	30						5
2N 2792	Ns	N	S	75	35			500	175	100...300		150	80						5
2N 2793		P	G	75	60			170W	110	50....100		15A	20						4
2N 2795	Sp	P	G	25	15			75	100	50		50				300			5
2N 2796	Sp	P	G	18	12			75	100	30		50				300			5
2N 2797		P	G	40	20			75	100	40		50				150			5
2N 2798		P	G	60	25			75	100	20		50				120			5
2N 2799		P	G	30	15			75	100	20		50				120			5
2N 2800	Mo	P	S	50	35	5	800	800	200	30.....90	10	150				120		4	5
2N 2801	Mo	P	S	50	35	5	800	800	200	75....225	10	150				120		4	5
2N 2808		N	S	30	10			300	200	20....120		2	20			1000			3
2N 2808A		N	S	30	10			200	200	20....120		2	7			1500			3
2N 2809		N	S	30	15			200	200	20....120		2	20			600			3
2N 2809A		N	S	30	15			200	200	20....120		2	20			1000			3
2N 2810		N	S	24	10			200	200	20....120		2	20			600			3
2N 2810A		N	S	24	10			200	200	20....120		2	20			1000			3
2N 2811	So	N	S	80	60	8	10A	50W	200	20.....60	5	5A	20			15		27	2
2N 2812	So	N	S	80	60	8	10A	50W	200	40....120	5	5A	40			15		27	2
2N 2813	So	N	S	120	80	8	10A	50W	200	20.....60	5	5A	20			15		27	2
2N 2814	So	N	S	120	80	8	10A	50W	200	40....120	5	5A	40			15		27	2
2N 2815	Se	N	S	80	80			200W	200	10.....50		10A				0,6			5
2N 2816	Se	N	S	100	100			200W	200	10.....50		10A				0,6			5
2N 2817	Se	N	S	150	150			200W	200	10.....50		10A				0,6			5
2N 2818	Se	N	S	200	200			200W	200	10.....50		10A				0,6			5
2N 2819	Se	N	S	80	80			200W	200	10.....50		15A				0,6			5
2N 2820	Se	N	S	100	100			200W	200	10.....50		15A				0,6			5
2N 2821	Se	N	S	150	150			200W	200	10.....50		15A				0,6			5
2N 2822	Se	N	S	200	200			200W	200	10.....50		15A				0,6			5
2N 2823	Se	N	S	80	80			200W	200	10.....40		20A				0,6			5
2N 2824	Se	N	S	100	100			200W	200	10.....40		20A				0,6			5
2N 2825	Se	N	S	150	150			200W	200	10.....40		20A				0,6			5
2N 2826		P	G		15			4W	95	75....200		100							2
2N 2827		P	G	95				4W	95	75....200		100							2
2N 2828		N	S	80	60			40W	200	20.....60		500				1			5
2N 2829		N	S	80	60			40W	200	20.....60		1A				1			5
2N 2831		N	S	40	12			360	200	25		10	40			250			3
2N 2832	Mo	P	G	80	50	2	20A	85W	110	25....100	2	10A	2	10	1A			3	2,5
2N 2833	Mo	P	G	75	120	2	20A	85W	110	25....100	2	10A	2	10	1A			3	2,5
2N 2834	Mo	P	G	100	140	2	20A	85W	110	25....100	2	10A	2	10	1A			3	2,5
2N 2835		P	G	32	32			16W	90	30....100		1A							1
2N 2836		P	G	52	55			37W	100	100									2
2N 2837	Mo	P	S	50	35	5	800	500	200	30.....90	10	150				120		9	5
2N 2838	Mo	P	S	50	35	5	800	500	200	75....225	10	150				120		9	5
2N 2845	Mo	N	S	60	30	5		360	200	30....120	10	150				250		9	5
2N 2846	Mo	N	S	60	30	5		800	200	30....120	10	150				250		4	5
2N 2847	Mo	N	S	60	20	5		360	200	40....140	10	150				250		9	5
2N 2849		N	S	100	80			850	200	100...300		1A				30			5
2N 2854		N	S	60	40			850	200	100...300		1A				30			5
2N 2857	Mo	N	S	30	15	2,5	40	200	200	30....150	1	3	50....220	6	2	1900		30	3

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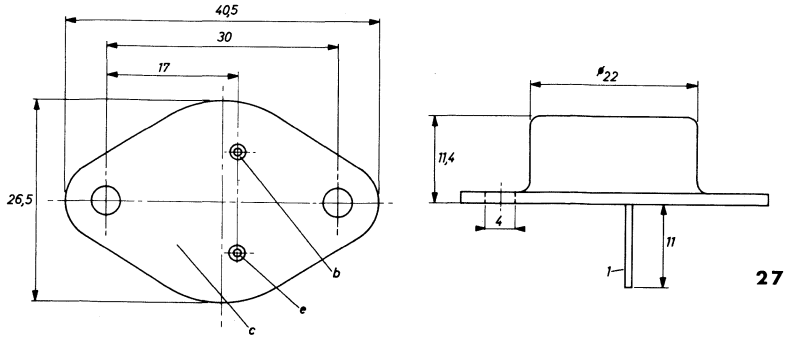

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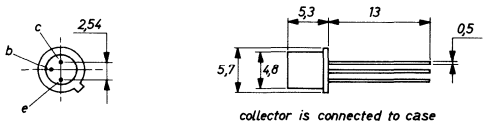

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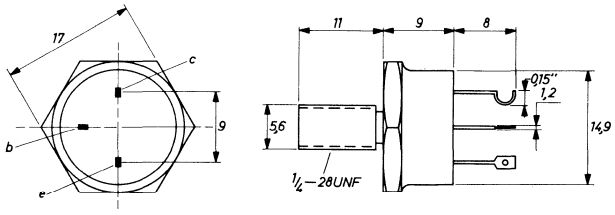

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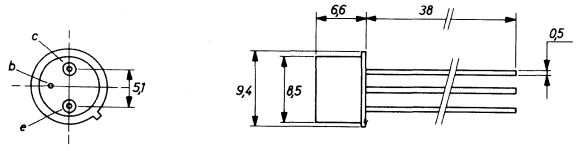

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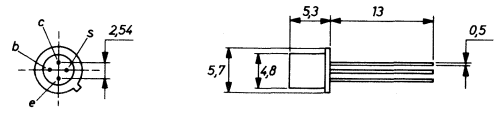

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2858		N	S	100	80			600	200	20.....60		1A				1			5
2N 2859		N	S	120	100			600	200	20.....60		1A				1			5
2N 2860	Sy	P	G	18	7			150	100	40		40				250			5
2N 2861	Tx	P	S	25	20			300	200	30....120			50			60			1
2N 2862	Tx	P	S	26	20			300	200	12....120			25			45			1
2N 2863	Tx	N	S	60	25			800	200	30.... 200		200				150			3
2N 2864	Tx	N	S	60	25			800	200	20....200		200				150			3
2N 2865	Tx	N	S	25	13			200	200	20....200		4	20			600			3
2N 2866	Tr	N	S	120	80			40W	175	20.....60		500				10			4
2N 2867	Tr	N	S	120	80			40W	175	40....120		500				10			4
2N 2868	Se	N	S	60	40			800	200	40....120		150				50			5
2N 2869	Rc	P	G	60	50	10	10A	30W	100	50....165	2	1A				0,2		3	2
2N 2870	Rc	P	G	80	50	10	10A	30W	100	50....165	2	1A				0,2		3	2
2N 2873	Rc	P	G	35	35			115	100	40		1	40			300			2
2N 2876	Rc	N	S	80	60	4	2,5A	17W	200	5		2,5A				200		26	3
2N 2881		P	S	60	60			8W	200	20.....60		500	10						2
2N 2882		P	S	100	100			8W	200	20.....60		500	10						2
2N 2883	Tx	N	S	40	20			800	200	20		100				400			4
2N 2884	Tx	N	S	40	20			800	200	20		100				400			4
2N 2885		N	S	40	15			150	175	30....120		10				300			5
2N 2886		N	S	50	40			800	200	22.....45		5							1
2N 2887		N	S	100	80			25W	200	15.....80		350				140			4
2N 2890	Se	N	S	100	80			800	200	30.....90		1A	30			30			2
2N 2891	Se	N	S	100	80			800	200	50....150		1A	50			30			5
2N 2892	So	N	S	100	80			30W	200	30.....90		1A	30			30			5
2N 2893	So	N	S	100	80			30W	200	50....150		1A	50			30			5
2N 2894	Mo	P	S	12	12	4	200	360	200	40....150	0,5	30				400		9	5
2N 2894A	Ph	P	S	12	12			360	200	40		30				800			5
2N 2895	Mo	N	S	120	65	7	1A	500	200	40....120	10	150	50....200	5	5	120		9	5
2N 2896	Mo	N	S	140	90	7	1A	500	200	60....200	10	150	50....275	5	5	120		9	5
2N 2897	Mo	N	S	60	45	7	1A	500	200	50....200	10	150	50....275	5	5	120		9	5
2N 2898		N	S	120	65			500	200	40....120		150	50			120			5
2N 2899	Rc	N	S	140	90			500	200	60....200		150	50			120			5
2N 2900	Rc	N	S	60	45			500	200	50....200		150	50			120			5
2N 2901		N	S	20	10			360	200	30		10				300			5,9
2N 2902		N	S	120	120			40W	200	30.....90		500	30			2			2
2N 2904	Mo	P	S	60	40	5	600	600	200	40....120	10	150				200		4	1,4
2N 2904A	Mo	P	S	60	60	5	600	600	200	40....120	10	150				200		4	1,5
2N 2905	Mo	P	S	60	40	5	600	600	200	100...300	10	150				200		4	1,5
2N 2905A	Mo	P	S	60	60	5	600	600	200	100...300	10	150				200		4	1,5
2N 2906	Mo	P	S	60	40	5	600	400	200	40....120	10	150				200		9	1,5
2N 2906A	Mo	P	S	60	60	5	600	400	200	40....120	10	150				200		9	1,5
2N 2907	Mo	P	S	60	40	5	600	400	200	100...300	10	150				200		9	1,5
2N 2907A	Mo	P	S	60	60	5	600	400	200	100...300	10	150				200		9	1,5
2N 2908		N	S	80	80			75W	200	12.....60		1A	10						2
2N 2909	Ge	N	S	60	40			400	200	40....120		150				50			5
2N 2911		N	S	150	125			5W	200	20.....60		1A				1			5
2N 2912	Mo	P	G	15	5	1,5	25A	75W	110	200...800	2	5A				10			5
2N 2921	Se	N	S	25	25			200	125				35						1
2N 2922	Se	N	S	25	25			200	125				55						1

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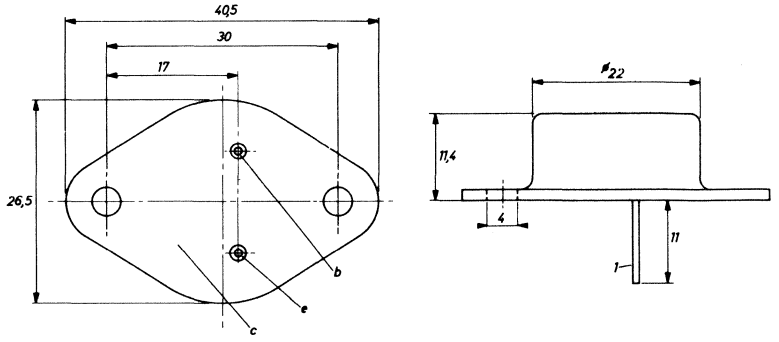

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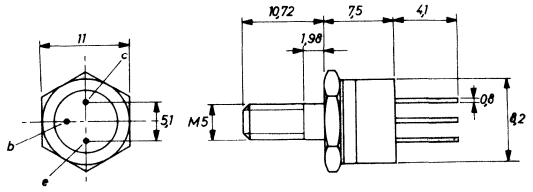

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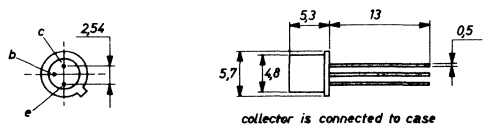

collector is connected to case

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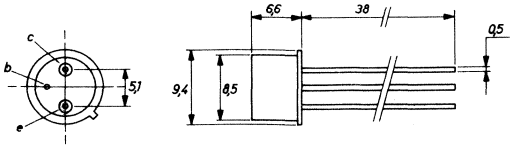

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 2923	Se	N	S	25	25			200	125				90						1
2N 2924	Se	N	S	25	25			200	125				150						1
2N 2925	Se	N	S	25	25			200	125				225						1
2N 2926	Se	N	S	18	18			200	125				35						1
2N 2927	Fa	P	S	25	25			800	200	30....130		50	25			100			5
2N 2928	Sy	P	G	15	13			150	100	0,8...200		2				400			3
2N 2929	Mo	P	G	25	10	0,7	100	300	100	10....100	10	10	10....120	10	10	1600		4	3
2N 2930		P	G	30	12			250	100	60....420		10							5
2N 2931		N	S	5	5			50	125	50		50	30			20			1
2N 2932		N	S	5	5			50	125	70		50	70			20			1
2N 2933		N	S	5	5			50	125	50		50	45			20			1
2N 2934		N	S	45	30			50	125	50		50	30			20			1
2N 2935		N	S	45	30			50	125	70		50	70			20			1
2N 2936		N	S	60	55			300	175	100...300			150			30			2
2N 2937		N	S	60	55			300	175	100...300			150			30			2
2N 2938	Rc	N	S	25	13			300	200	30		50				500			4
2N 2939		N	S	75	60			800	300	60....240		150				150			4
2N 2940		N	S	120	80			800	300	60....240		150				150			4
2N 2941		N	S	150	100			800	200	60....240		150				150			4
2N 2942		P	G	50	25			150	100	50		10				150			5
2N 2943		P	G	30	15			150	100	30		10				120			5
2N 2944	Mo	P	S	15	10	15	100	500	200	80	0,5	1				15		17	9
2N 2944A		P	S	15	10			400	200	100		1				15			5,9
2N 2945	Mo	P	S	25	20	25	100	500	200	40	0,5	1				13		17	9
2N 2945A		P	S	25	20			400	200	100		1				10			5,9
2N 2946	Mo	P	S	40	35	40	100	500	200	30	0,5	1				12		17	9
2N 2946A		P	S	40	35			400	200	50		1				5			5,9
2N 2947	Mo	N	S	60	60	3	1,5A	25W	175	2,5....35	2	400				100		3	4
2N 2948	Mo	N	S	40	40	2	1,5A	25W	175	2,5...100	2	400				100		3	4
2N 2949	Mo	N	S	60	60	3	700	6W	175	5.....100	2	40				100		101	4
2N 2950	Mo	N	S	60	60	3	700	6W	175	5.....100	2	40				100			4
2N 2951	Mo	N	S	60	60	5	250	800	175	20....150	10	10				100		4	4
2N 2952	Mo	N	S	60	60	5	250	500	175	20....150	10	10				100		4	4
2N 2953	Rc	P	G	30	25	25	150	120	100	100		50	200	10	10			1	1
2N 2954		N	S	30	20			200	200	25....300		2	25			300			5
2N 2955	Mo	P	G	40	25	3,5	100	150	100	20.....60	1	50						9	5
2N 2956	Mo	P	G	40	20	3,5	100	150	100	40....120	1	50						9	5
2N 2957	Mo	P	G	40	18	3,5	100	150	100	100	1	50						9	5
2N 2958	Mo	N	S	60	20	5	600	600	175	40....120	10	150				250		4	3,5
2N 2959	Mo	N	S	60	20	5	600	600	175	100...300	10	150				250		4	3,5
2N 2960		N	S	60	30			3W	200	100...300		150				250			5
2N 2961		N	S	60	30			3W	200	100...300		150				250			5
2N 2962		P	G	40	18			350	100							660			2
2N 2963		P	G	40	18			350	100							660			2
2N 2964		P	G	30	15			350	100							660			2
2N 2965		P	G	30	15			350	100							660			4
2N 2966		P	G	20	20			60	100	8.....100		3				500			3
2N 2967		N	S	12	6			300	200	20....120		10				400			5
2N 2968	Sp	P	S	30	10			150	140	15						8			5
2N 2969	Sp	P	S	30	10			150	140	15						8			5

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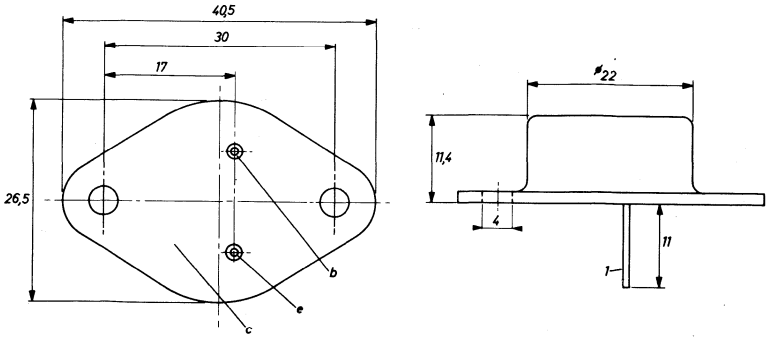

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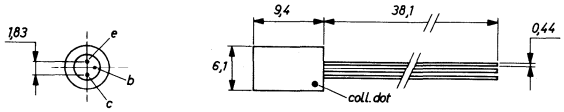

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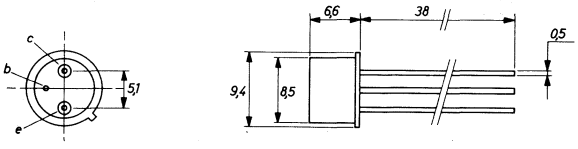

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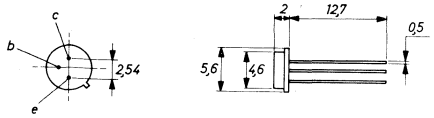

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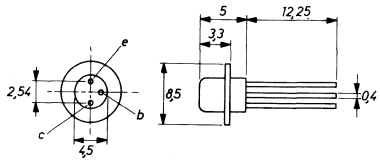

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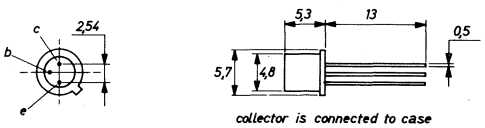
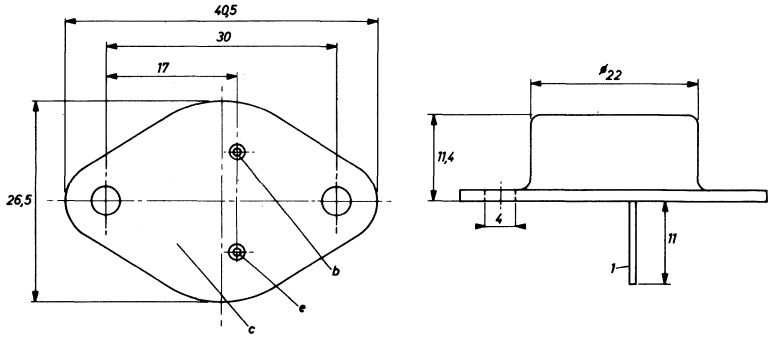


collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 2970	Sp	P	S	30	20			150	140	10						4			5
2N 2971	Sp	P	S	30	20			150	140	10						4			5
2N 2983		N	S	155	80			1W	175	20.....60		500	20			60			2
2N 2984	So	N	S	186	120			1W	175	20.....60		500	20			60			2
2N 2985	So	N	S	155	80			1W	175	40....120		500	40			60			2
2N 2986	So	N	S	185	120			1W	175	40....120		500	40			60			2
2N 2987	Tx	N	S	95	80	7	1A	1W	200	25.....75	5	200	25.....85	10	100	50	175	4	2
2N 2988	Tx	N	S	155	100	7	1A	1W	200	25.....75	5	200	25.....85	10	100	50	175	4	2
2N 2989	Tx	N	S	95	80	7	1A	1W	200	60....120	5	200	50....170	10	100	50	175	4	2
2N 2990	Tx	N	S	155	100	7	1A	1W	200	60....120	5	200	50....170	10	100	50	175	4	2
2N 2991	Tx	N	S	95	80	7	1A	2W	200	25.....75	5	200	25.....85	10	100	30	87	113	2
2N 2992	Tx	N	S	155	100	7	1A	2W	200	25.....75	5	200	25.....85	10	100	30	87	113	2
2N 2993	Tx	N	S	95	80	7	1A	2W	200	60....120	5	200	50....170	10	100	30	87	113	2
2N 2994	Tx	N	S	155	100	7	1A	2W	200	60....120	5	200	50....170	10	100	30	87	113	2
2N 2995	Ge	N	S	120	100			1,5W	175	25.....90		200	30			10			4
2N 2996	Tx	P	G	15	10			75	100	25....500		4	35			400			3
2N 2997	Tx	P	G	30	15			75	100	40....500		4	50			400			3
2N 2998	Tx	P	G	15	12			75	100	15....300		3	20			600			3
2N 2999	Tx	P	G	15	10			75	100	10		3	15			1400			3
2N 3009	Mo	N	S	40	15	4		360	200	25	0,5	100				350		23	5
2N 3010	Mo	N	S	15	6	4	50	300	200	25....125	0,4	10				600		9	5
2N 3011	Mo	N	S	30	12	5	200	360	200	30....120	0,35	10				400		9	5
2N 3012	Mo	P	S	12	12	4	200	360	200	30....120	0,35	10	4	10	30			9	5
2N 3013	Mo	N	S	40	15	5	200	360	200	25	0,5	10				350		23	5
2N 3014	Mo	N	S	40	15	5	200	360	200	25	0,4	10				350		23	5
2N 3015	Mo	N	S	60	30	5		800	200	30....120	10	150				250		4	5
2N 3016	So	N	S	100	50			3W	150	60....150		1A				200			4
2N 3017	So	N	S	100	50			3W	150	60....150		1A				200			4
2N 3018	So	N	S	100	50			25W	250	60....150		1A				200			4
2N 3019	Mo	N	S	140	80	7	1A	800	200	100...300	10	150	80....400	5	1	100		4	4
2N 3020	Mo	N	S	140	80	7	1A	800	200	40....120	10	150	30....200	5	1	80		4	4
2N 3021	Mo	P	S	30	30	4	3A	25W	175	20.....60	2	1A	2	15	500			3	2,5
2N 3022	Mo	P	S	45	45	4	3A	25W	175	20.....60	2	1A	2	15	500			3	2,5
2N 3023	Mo	P	S	60	60	4	3A	25W	175	20.....60	2	1A	2	15	500			3	2,5
2N 3024	Mo	P	S	30	30	4	3A	25W	175	50....180	2	1A	2	15	500			3	2,5
2N 3025	Mo	P	S	45	45	4	3A	25W	175	50....180	2	1A	2	15	500			3	2,5
2N 3026	Mo	P	S	60	60	4	3A	25W	175	50....180	2	1A	2	15	500			3	2,5
2N 3033	Tx	N	S	100	100			300	175										
2N 3034	Tx	N	S	70	70			300	175										
2N 3035	Tx	N	S	50	50			300	175										
2N 3036	Tx	N	S	120	80			800	200	50....150		150	40			50			1
2N 3037	Tx	N	S	120	70			360	175	40....120		150	30			50			1
2N 3038	Tx	N	S	100	60			360	175	80....240		150	60			50			1
2N 3039	Tx	P	S	50	35			360	175	20.....80		150	20			50			1
2N 3040	Tx	P	S	40	30			360	175	40....160		150	40			50			1

3



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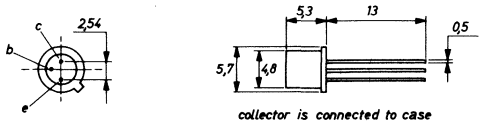

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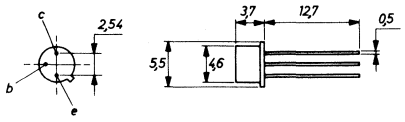

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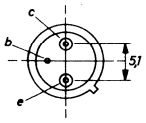

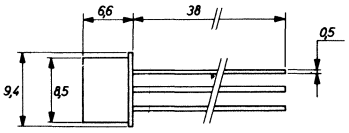

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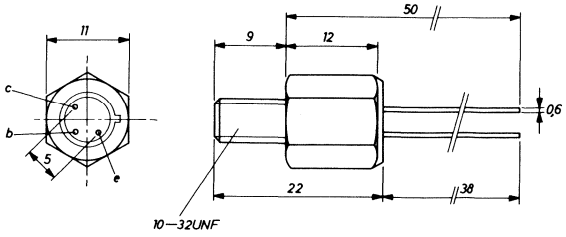

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3051	Tx	P	S	25	20			250	175	20....120			30			60			1
2N 3052	Tx	N	S	35	15			250	175	25....130		10				200			5
2N 3053	Mo	N	S	60	40	5	700	5W	200	50....250	10	150				100		4	2
2N 3054	Rc	N	S	90	60	7	4A	29W	200	25....100	4	500	25					40	2
2N 3055	Mo	N	S	100	60	7	15A	115W	200	20.....70	4	4A	15....120	4	1A			3	2
2N 3055A		N	S	100	70			175W	200	20.....70		4A	30						2
2N 3056	Tr	N	S	100	60			400	200	40....120		150	30			80			3
2N 3056A	Tr	N	S	140	80			400	200	40....120		150	30			80			3
2N 3057	Tr	N	S	100	60			400	200	100...300		150	80			100			3
2N 3057A	Tr	N	S	140	80			400	200	100...300		150	80			100			3
2N 3058	Sp	P	S	6	6			400	200	40....120			40						1
2N 3059	Sp	P	S	10	10			400	200	100...300			100						1
2N 3060	Sp	P	S	70	60			400	200	30.....90		1	30						1
2N 3061	Sp	P	S	70	60			400	200	60....180		1	60						1
2N 3062	Ns	P	S	90	80			400	200	20.....80		1	20						1
2N 3063	Ns	P	S	90	80			400	200	20....150		1	50						1
2N 3064	Ns	P	S	110	100			400	200	15.....45		1	15						1
2N 3065	Ns	P	S	110	100			400	200	30.....90		1	30						1
2N 3072	Mo	P	S	60	60	4	500	800	200	30....130	1	50	25....180	10	10	130		12	1,5
2N 3073	Mo	P	S	60	60	4	500	360	200	30....130	1	50	25....180	10	10	130		9	1,5
2N 3074		P	G	30	25			140	85	25....300		3,5							3
2N 3075		P	G	35	25			140	85	20....250		3							3
2N 3076		N	S	140	50			125W	175	30.....90		7A	60			50			5
2N 3077	Tr	N	S	80	60			360	200	100...400			120			15			1
2N 3078	Tr	N	S	80	60			360	200	40....120			50			15			1
2N 3079		N	S	200	200			178W	150	7.....40		5A							5
2N 3080		N	S	300	300			178W	150	7.....40		5A							5
2N 3081	Sy	P	S	70	50			600	200	20		500				150			5
2N 3082	Ge	N	S	25	7			500	200	100		0,25				100			5,9
2N 3083	Ge	N	S	25	7			500	200	100		0,25				100			5,9
2N 3107	Ns	N	S	100	60			800	200	100...300		150	60			70			5
2N 3108	Ns	N	S	100	60			800	200	40....120		150				60			5
2N 3109	Ns	N	S	80	40			800	200	100...300		150	60			70			5
2N 3110	Ns	N	S	80	40			800	200	40....120		150				60			5
2N 3114	Mo	N	S	150	150	5	200	800	200	30....120	10	30	25	5	1			4	7
2N 3115	Mo	N	S	60	20	5	600	1,8W	175	40....120	10	150				250		9	5
2N 3116	Mo	N	S	60	20	5	600	1,8W	175	100...300	10	150				250		9	5
2N 3117	Ns	N	S	60	60			360	200	250...500			400			60			1
2N 3118	Rc	N	S	85	60	4	500	1W	200	50....275	28	25	5	28	25	250		4	3
2N 3119	Rc	N	S	100	80	4	500	1W	200	50....200	10	100				250		4	5
2N 3120	Ns	P	S	45	45			800	200	30....130		50	25			130			5
2N 3121	Ns	P	S	45	45			360	200	30....130		50	25			130			5
2N 3122		N	S	50	30			800	200	25....100		300				60			1
2N 3123	Ns	N	S	60	30			800	175	100...300		150				400			5
2N 3124		P	G	40	30			90W	100	50....100		10A	20						2

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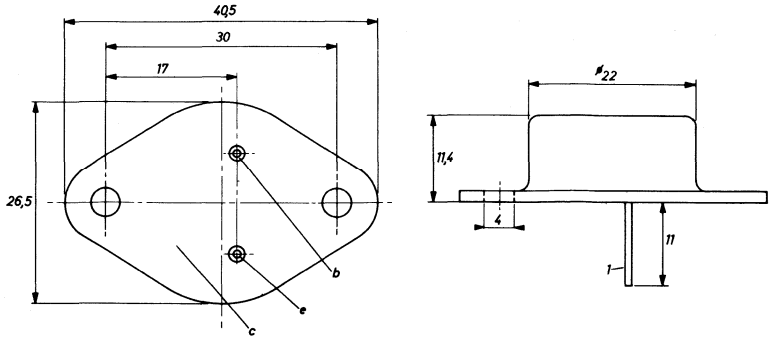

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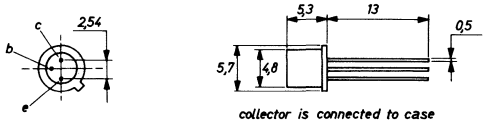

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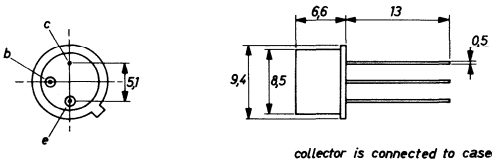

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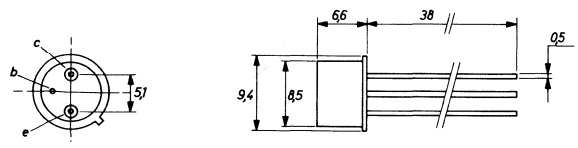

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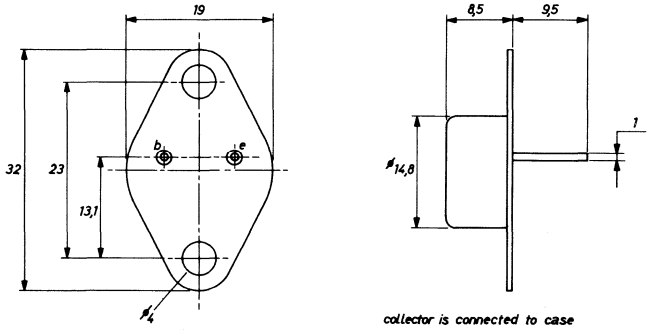

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3125		P	G	80	80			90W	100	30.....75		3A	10						2
2N 3126		P	G	100	75			90W	100	10.....30		10A	10						2
2N 3127	Mo	P	G	25	20	0,7	50	100	100	20....100	10	3	25....125	10	3	400		30	3
2N 3128	Ns	N	S	20	20			150	150	50....150		0,1	75			60			1
2N 3129	Ns	N	S	45	45			150	150	100...300			160			60			1
2N 3130	Ns	N	S	60	60			150	150	60....180			110			60			1
2N 3131		N	S	40	15			150	150	30....120		10				250			5
2N 3132		P	G	100	70			90W	100	40....200		2A							5
2N 3133	Mo	P	S	50	35	4	600	3W	200	40....120	10	150				200		4	5
2N 3134	Mo	P	S	50	35	4	600	3W	200	100...300	10	150				200		4	5
2N 3135	Mo	P	S	50	35	4	600	1,8W	200	40....120	10	150				200		9	5
2N 3136	Mo	P	S	50	35	4	600	1,8W	200	100...300	10	150				200		9	5
2N 3137	Mo	N	S	40	20	4	150	800	200	20....120	5	50				153	153	4	3
2N 3138	So	N	S	65	65			20W	200	10		1A				100			4
2N 3139	So	N	S	140	140			20W	200	10		1A				100			4
2N 3140	So	N	S	65	65			20W	200	10		1A				100			4
2N 3141	So	N	S	140	140			20W	200	10		1A				100			4
2N 3142	Ns	N	S	65	65			25W	200	10		1A				100			4
2N 3143	Ns	N	S	140	140			25W	200	10		1A				100			4
2N 3144	Ns	N	S	65	65			25W	200	10		1A				100			4
2N 3145	Ns	N	S	140	140			25W	200	10		1A				100			4
2N 3146	Tx	P	G	150	140	60	15A	150W	100	30.....90	1,5	5A	20....100	1,5	2A		43	3	2
2N 3147	Tx	P	G	180	160	80	15A	150W	100	30.....90	1,5	5A	20....100	1,5	3A		43	3	2
2N 3148		P	G	11	6			0,45	100	70		20	80			25			5
2N 3149	So	N	S	80	80	10	70A	300W	200	10	3	50A				0,1		72	5
2N 3150	So	N	S	100	100	10	70A	300W	200	10	3	50A				0,1		72	5
2N 3151	So	N	S	150	150	10	70A	300W	200	10	3	50A				0,1		72	5
2N 3152		N	S	120	120			25	200	40		30	20			200			5
2N 3153	Ns	N	S	15	15			300	200							30			5,9
2N 3154		P	G	40	25			37W	100	60....180		500							5
2N 3155		P	G	60	40			37W	100	60....180		500							5
2N 3156		P	G	80	55			30W	100	60....180		500							5
2N 3157		P	G	100	65			37W	100	60....180		500							5
2N 3158		P	G	40	25			37W	100	30.....75		500							5
2N 3159		P	G	60	40			37W	100	30.....75		500							5
2N 3160		P	G	80	55			37W	100	30.....75		500							5
2N 3161		P	G	100	65			37W	100	30.....75		500							5
2N 3163	So	P	S	40	40	10	5A	85W	200	12.....36	3	1A	10			1		27	4
2N 3164	So	P	S	60	60	10	5A	85W	200	12.....36	3	1A	10			1		27	4
2N 3165	So	P	S	80	80	10	5A	85W	200	12.....36	3	1A	10			1		27	4

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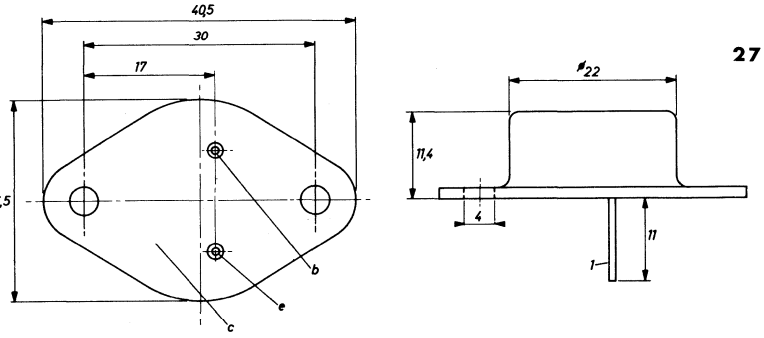

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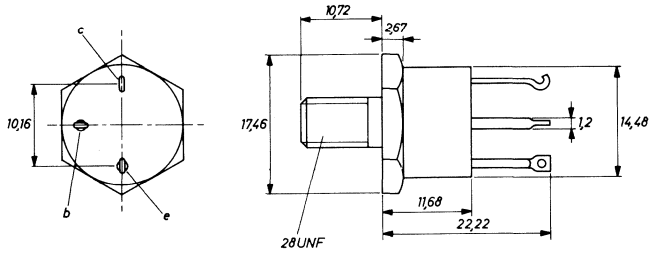

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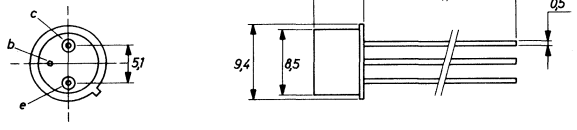

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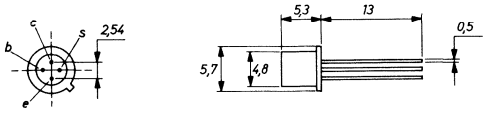

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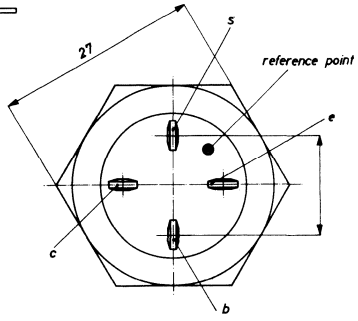

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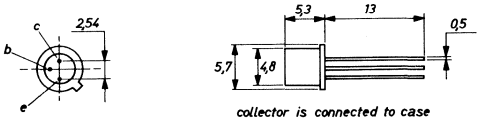

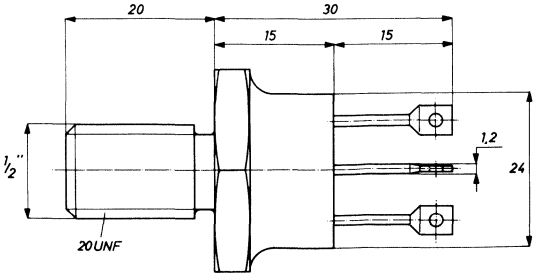

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3166	So	P	S	100	100	10	5A	85W	200	12.....36	3	1A	10			1		27	4
2N 3167		P	S	40	40			85W	200	12.....36		1A	10			1			4
2N 3168		P	S	60	60			85W	200	12.....36		1A	10			1			4
2N 3169		P	S	80	80			85W	200	12.....36		1A	10			1			4
2N 3170		P	S	100	100			85W	200	12.....36		1A	10			1			4
2N 3171	So	P	S	40	40	10	5A	75W	200	12.....36	3	1A	10			1		3	4
2N 3172	So	P	S	60	60	10	5A	75W	200	12.....36	3	1A	10			1		3	4
2N 3173	So	P	S	80	80	10	5A	75W	200	12.....36	3	1A	10			1		3	4
2N 3174	So	P	S	100	100	10	5A	75W	200	12.....36	3	1A	10			1		3	4
2N 3175	So	P	S	40	40	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3176	So	P	S	60	60	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3177	So	P	S	80	80	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3178	So	P	S	100	100	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3179		P	S	40	40			85W	200	10.....30		2A	10			1			4
2N 3180		P	S	60	60			85W	200	10.....30		2A	10			1			4
2N 3181		P	S	80	80			85W	200	10.....30		2A	10			1			4
2N 3182		P	S	100	100			85W	200	10.....30		2A	10			1			4
2N 3183	So	P	S	40	40	10	5A	75W	200	10.....30	2	3A	10			1	45	3	4
2N 3184	So	P	S	60	60	10	5A	75W	200	10.....30	3	2A	10			1	45	3	4
2N 3185	So	P	S	80	80	10	5A	75W	200	10.....30	3	2A	10			1	45	3	4
2N 3186	So	P	S	100	100	10	5A	75W	200	10.....30	3	2A	10			1	45	3	4
2N 3187	So	P	S	40	40	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3188	So	P	S	60	60	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3189	So	P	S	80	80	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3190	So	P	S	100	100	10	5A	85W	200	10.....30	3	2A	10			1		27	4
2N 3191		P	S	40	40			85W	200	10.....30		3A	10			1			4
2N 3192		P	S	60	60			85W	200	10.....30		3A	10			1			4
2N 3193		P	S	80	80			85W	200	10.....30		3A	10			1			4
2N 3194		P	S	100	100			85W	200	10.....30		3A	10			1			4
2N 3195	So	P	S	40	40	10	5A	75W	200	10.....30	3	3A	10			1		3	4
2N 3196	So	P	S	60	60	10	5A	75W	200	10.....30	3	3A	10			1	45	3	4
2N 3197	So	P	S	80	80	10	5A	75W	200	10.....30	3	3A	10			1	45	3	4
2N 3198	So	P	S	100	100	10	5A	75W	200	10.....30	3	3A	10			1	45	3	4
2N 3199	So	P	S	40	40			40W	200	20.....60		1A	10			1			4
2N 3200		P	S	60	60			40W	200	20.....60		1A	10			1			4
2N 3201		P	S	80	80			40W	200	20.....60		1A	10			1			4
2N 3202	So	P	S	40	40	10	5A	9W	200	20.....60	2	1A	10			1		4	2
2N 3203	So	P	S	60	60	10	5A	9W	200	20.....60	2	1A	10			1		4	2
2N 3204	So	P	S	80	80	10	5A	9W	200	20.....60	2	1A	10			1		4	2
2N 3205		P	S	40	40			40W	200	20.....60		500	10			1			4
2N 3206		P	S	60	60			40W	200	20.....60		500	10			1			4
2N 3207		P	S	100	100			40W	200	20.....60		500	10			1			4
2N 3208		P	S	40	40			9W	200	20.....60		500	10			1			4
2N 3209	Mo	P	S	20	20	4	200	360	200	30....120	0,5	30				400		9	5
2N 3210	Mo	N	S	40	15	5	500	360	200	30....120	1	10				300		9	5
2N 3211	Mo	N	S	40	15	6	500	360	200	50....150	1	10				350		9	5
2N 3212		P	G	100	80			14W	110	30.....90		3A	3						2
2N 3213		P	G	80	60			14W	110	30.....90		3A	3						2
2N 3214		P	G	60	40			14W	110	30.....90		3A	3						2
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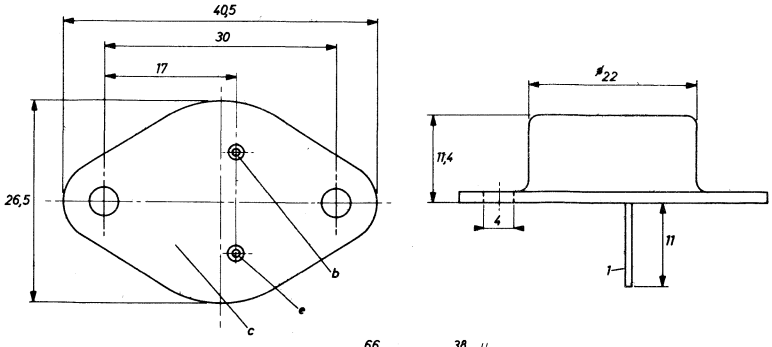

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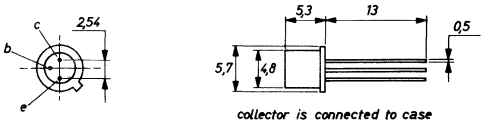

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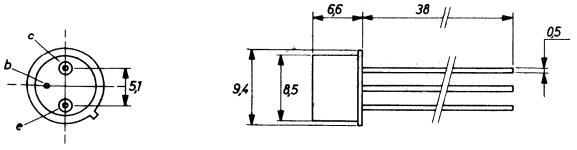

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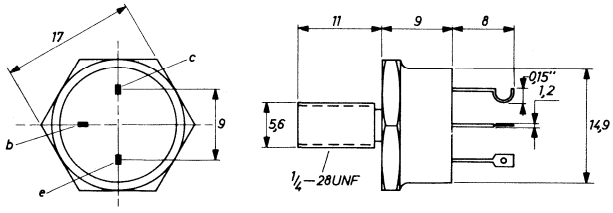

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3216		P	G	20	10			150	100	60		200				10			5
2N 3217	Sp	P	S	15	10			400	200							1			5, 9
2N 3218	Sp	P	S	25	20			400	200							1			5, 9
2N 3219	Sp	P	S	40	35			400	200							1			5, 9
2N 3220	Ge	N	S	100	80			6W	175	20.....60		1A	20			10			4
2N 3221	Ge	N	S	100	80			6W	175	40....120		1A	40			10			4
2N 3222	Ge	N	S	80	60			6W	175	20.....60		1A	20			10			4
2N 3223	Ge	N	S	80	60			6W	175	40....120		1A	40			10			4
2N 3224		P	S	100	100			700	200	20.....60		50	20			60			3
2N 3225		P	S	100	100			700	200	40....120		50	40			80			3
2N 3226	So	N	S	35	35			75W	200	20.....50		2A	20						2
2N 3227	Mo	N	S	40	20	6		360	200	100...300	1	10	5	10	10			9	5
2N 3229	Rc	N	S	105	60	4	2,5A	17W	200	5		2,5A				200		26	4
2N 3232	Mo	N	S	60	60	6	7,5A	117W	200	18.....55	10	3A	1	10	3A			3	4
2N 3233	Sp	N	S	110	100			117W	200	18.....55		3A	10						4
2N 3234	So	N	S	160	160			117W	200	18.....55		3A	10						4
2N 3235	Mo	N	S	55	55	7	15A	117W	200	20.....70	4	4A	1	4	4A			3	4
2N 3236	So	N	S	90	90	7	15A	83W	200	17.....60	4	5A	10				45	3	4
2N 3237	So	N	S	90	75			200W	200	12.....36		10A	10						4
2N 3238	So	N	S	80	80			150W	200	8,5....25		10A	10						4
2N 3239	So	N	S	80	80			150W	200	8,5....25		10A	10						4
2N 3240	So	N	S	160	160			150W	200	8,5....25		10A	10						4
2N 3241	Rc	N	S	30	25	5	100	500	175	50....300		10	70			50		37	1
2N 3241A	Rc	N	S	30	25	7,5		500	175	100...200	10	10	100...250	12	10	175	300	37	1
2N 3242	Rc	N	S	30	25	5	200	500	175	75		10	100			50		37	1
2N 3242A	Rc	N	S	40	40	8		500	175	125...300	10	10	125...375	12	10	175	300	37	1
2N 3244	Mo	P	S	40	40	5	1A	1W	200	50....150	1	500				175		4	5
2N 3245	Mo	P	S	50	50	5	1A	1W	200	30.....90	1	500				150		4	5
2N 3246	Ns	N	S	60	45			350	200	200...600			200			60			5
2N 3247	Ns	N	S	60	45			150	150	200...600			200			60			5
2N 3248	Mo	P	S	15	12	5		360	200	50....150	1	10				250		9	5
2N 3249	Mo	P	S	15	12	5		360	200	100...300	1	10				300		9	5
2N 3250	Mo	P	S	50	40	5	200	360	200	50....150	1	10	60....200	10	1	250	490	9	5
2N 3250A	Mo	P	S	60	60	5	200	360	200	50....150	1	10	50....200	10	1	250	490	9	5
2N 3251	Mo	P	S	50	40	5	200	360	200	100...300	1	10	100...400	10	1	300	490	9	5
2N 3251A	Mo	P	S	60	60	5	200	360	200	100...300	1	10	100...400	10	1	300	490	9	5
2N 3252	Mo	N	S	60	30	5		1W	200	30.....90	1	500				200	175	4	5
2N 3253	Mo	N	S	75	40	5		1W	200	25.....75	1	500				175	175	4	5
2N 3260		N	S	200	200			200W	200	10.....40		20A				0,6			5
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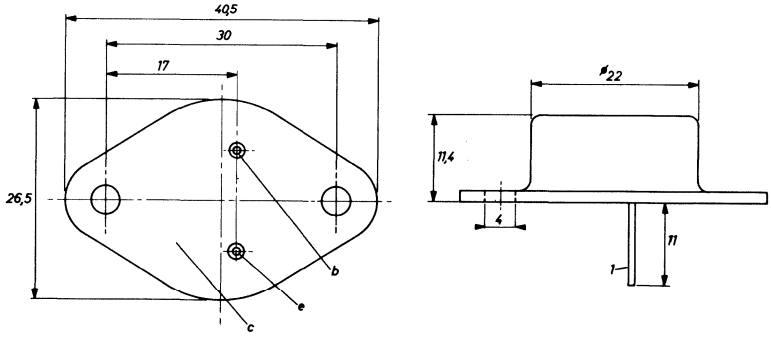

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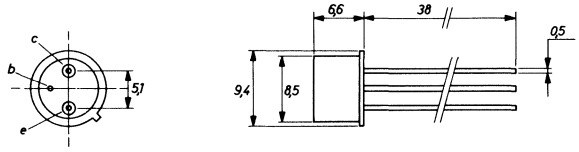

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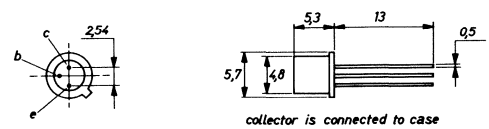

collector is connected to case

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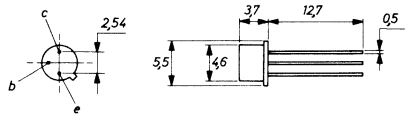

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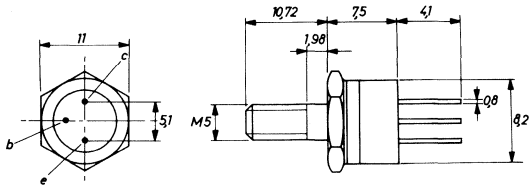

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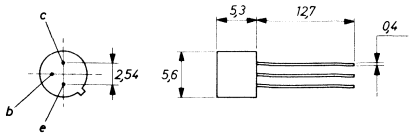

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3262	Rc	N	S	100	80	4	1,5A	8W	200	40	4	500	3	28	100	150		12	5
2N 3263	Rc	N	S	150	90	7	25A	75W	200	20.....55	3	15A				20		51	5
2N 3264	Rc	N	S	120	60	7	25A	75W	200	20.....80	3	15A				20		51	5
2N 3265	Rc	N	S	150	90	7	25A	125W	200	20.....55	3	15A				20		28	5
2N 3266	Rc	N	S	120	60	7	25A	125W	200	20.....80	3	15A				20		28	5
2N 3267	Tx	P	G	15	8			75	100	10....500		3	15			900			3
2N 3268		N	S	45	45			150	200	12.....80		10	40						1
2N 3279	Mo	P	G	30	20	1	50	100	100	10.....70	10	3	10....100	10	3	800		30	3
2N 3280	Mo	P	G	30	20	1	50	100	100	10.....70	10	3	10....100	10	3	800		30	3
2N 3281	Mo	P	G	30	15	0,5	50	100	100	10....100	10	3	10....150	10	3	800		30	3
2N 3282	Mo	P	G	30	15	0,5	50	100	100	10....100	10	3	10....150	10	3	800		30	3
2N 3283	Mo	P	G	25	25	0,5	50	100	100	10	10	3	10....200	10	3	800		30	3
2N 3284	Mo	P	G	25	25	0,5	50	100	100	10	10	3	10....200	10	3	800		30	3
2N 3285	Mo	P	G	20	20	0,5	50	100	100	5	10	3	5.....200	10	3	800		30	3
2N 3286	Mo	P	G	20	20	0,5	50	100	100	5	10	3	5.....200	10	3	800		30	3
2N 3287	Mo	N	S	40	20	3	50	200	200	15....100	10	2	15....150	10	2	1200		30	3
2N 3288	Mo	N	S	40	20	3	50	200	200	15....100	10	2	15....150	10	2	1200		30	3
2N 3289	Mo	N	S	30	15	3	50	200	200	10....150	10	2	10....200	10	2	1200		30	3
2N 3290	Mo	N	S	30	15	3	50	200	200	10....150	10	2	10....200	10	2	1200		30	3
2N 3291	Mo	N	S	25	25	3	50	200	200	10	10	2	10....200	10	2			30	3
2N 3292	Mo	N	S	25	25	3	50	200	200	10	10	2	10....200	10	2			30	3
2N 3293	Mo	N	S	20	20	3	50	200	200	10	10	2	10....200	10	2			30	3
2N 3294	Mo	N	S	20	20	3	50	200	200	10	10	2	10 ...200	10	2			30	3
2N 3295	Mo	N	S	60	60	5	250	800	175	20.....60	10	10						4	4
2N 3296	Mo	N	S	60	60	3	700	6W	175	5.....50	2	40				100		109	4
2N 3297	Mo	N	S	60	60	3	1,5A	25W	175	2,5....35	2	400						3	4
2N 3298	Mo	N	S	25	25	3	100	300	175	60....120	1	10				150		9	4
2N 3299	Mo	N	S	60	30	5	500	800	200	40....120	10	150				250		4	5
2N 3300	Mo	N	S	60	30	5	500	800	200	100...300	10	150				250		4	5
2N 3301	Mo	N	S	60	30	5	500	360	200	40....120	10	150				250		9	5
2N 3302	Mo	N	S	60	30	5	500	360	200	100...300	10	150				250		9	5
2N 3303	Mo	N	S	25	12	4	1A	600	200	30....120	0,5	300				450			5
2N 3304	Mo	P	S	6	6	4		300	200	30....120	0,3	10				500		9	5
2N 3305		P	S	50	40			600	200	40....120		0,1	40			20			1
2N 3306		P	S	50	40			600	200	100...300		0,1	70			20			1
2N 3307	Mo	P	S	40	35	3	50	300	200	40....250	10	2	40....250	10	2	1200		30	3
2N 3308	Mo	P	S	30	25	3	50	300	200	25....250	10	2	25....250	10	2	1200		30	3
2N 3309	Se	N	S	50	50			3,5W	175	5.....100		30				300			4
2N 3309A		N	S	60	60			5W	200	8.....80		50				300			4
2N 3310		N	S	35	15			300	200	10		20				300			4

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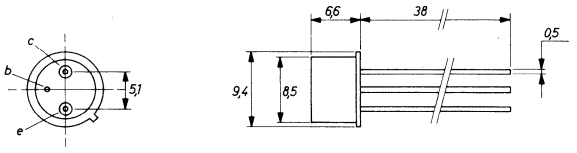

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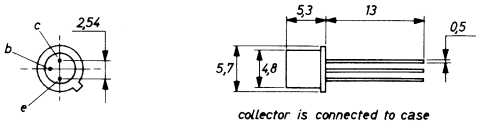

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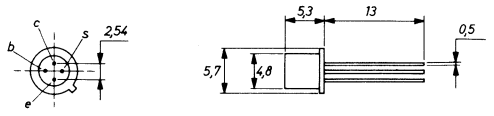

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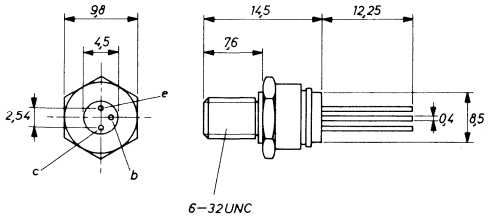

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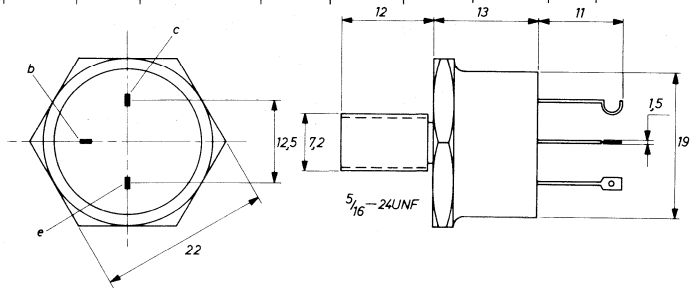

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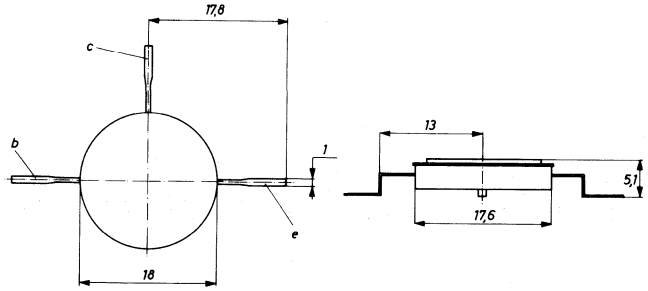

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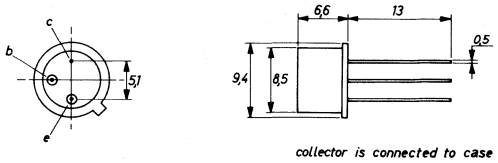
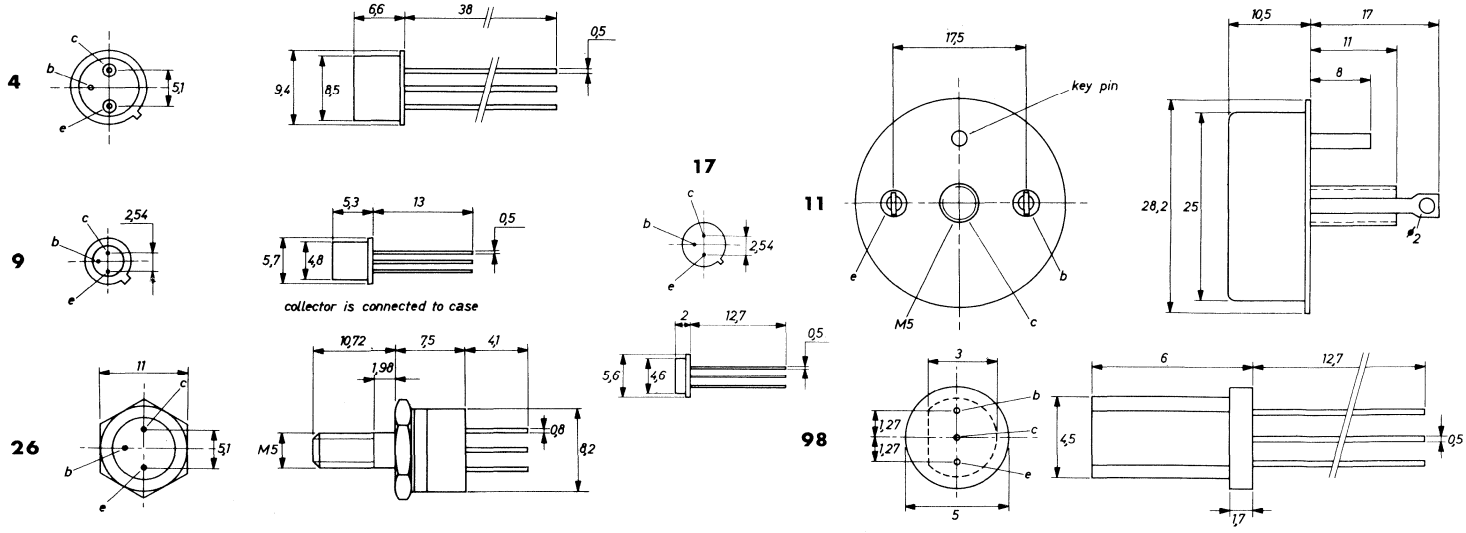


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3311	Mo	P	G	30	20	20	5A	170W	110	60....120	2	3A	30.....90	2	3A			11	2
2N 3312	Mo	P	G	45	30	25	5A	170W	110	60....120	2	3A	30.....90	2	3A			11	2
2N 3313	Mo	P	G	60	40	30	5A	170W	110	60....120	2	3A	30.....90	2	3A			11	2
2N 3314	Mo	P	G	30	20	20	5A	170W	110	100...200	2	3A	40....120	2	3A			11	2
2N 3315	Mo	P	G	45	30	25	5A	170W	110	100...200	2	3A	40....120	2	3A			11	2
2N 3316	Mo	P	G	60	40	30	5A	170W	110	100...200	2	3A	40....120	2	3A			11	2
2N 3317	Sp	P	S	30	30			150	140							6,4			5,9
2N 3318	Sp	P	S	15	15			150	140							7,6			5,9
2N 3319	Sp	P	S	10	6			150	140							12			5,9
2N 3320		P	G	15	10			60	100	50		200				600			5
2N 3321		P	G	12	7			60	100	100		10				600			5
2N 3322		P	G	12	7			60	100	30		40				600			5
2N 3323	Mo	P	G	35	35	3	100	300	100	30....200	10	3	30....225	10	3	600		9	5
2N 3324	Mo	P	G	35	35	3	100	300	100	30....200	10	3	30....225	10	3	600		9	5
2N 3325	Mo	P	G	35	35	3	100	300	100	30....200	10	3	30....225	10	3	600		9	5
2N 3326		N	S	60	45			800	175	40....120		150				250			5
2N 3327	Ns	N	S	65	65			20W	200	10		500				100			4
2N 3337	Fa	N	S	40	40			300	200	30....300		4	30			400			3
2N 3338	Fa	N	S	40	40			300	200	30....300		4	30			400			3
2N 3339	Fa	N	S	40	40			300	200	30....300		4	30			400			3
2N 3340	So	N	S	30	20	5		400	175	40	2	0,01				95		17	5
2N 3341	So	P	S	30	20	5		400	175	40	5	0,01				50		17	5
2N 3342	So	P	S	20	8	20		250	175				30	5	1			4	5
2N 3343	So	P	S	25	8	25		250	175	20	0,5	0,25				2		4	5,9
2N 3344	So	P	S	30	30	30		250	175				25	0,5	1	2		4	5,9
2N 3345	So	P	S	50	50	50		250	175				15	0,5	1	2		9	5,9
2N 3346	So	P	S	50	50	50		250	175				25	0,5	1	2		9	5,9
2N 3371	Tx	P	G	25	10			150	100	20....300		12	25			320			3
2N 3374		N	S	80	80			5W	200	10		170				230			4
2N 3375	Mo	N	S	65	40	4	1,5A	11,6W	200	10	5	250				500		26	4
2N 3388		N	S	125	100			600	175	60		2,5				36			5
2N 3389		N	S	196	160			600	175	60		7				36			5
2N 3390	Ge	N	S	18	18	5	100	360	125	400...800	4,5	2	400..1230	4,5	2			98	1
2N 3391	Ge	N	S	25	25	5	100	360	125	250...500	4,5	2	250	10	0,1			98	1
2N 3391A	Ge	N	S	25	25	5	100	360	125	250...500	4,5	2	250	10	0,1			98	1
2N 3392	Ge	N	S	25	25	5	100	360	125	150...300	4,5	2	150	5	20	120		98	1
2N 3393	Ge	N	S	25	25	5	100	360	125	90....180	4,5	2	90	5	20	120		98	1
2N 3394	Ge	N	S	25	25	5	100	360	125	55....110	4,5	2	55	5	20	120		98	1
2N 3395	Ge	N	S	25	25	5	100	360	125	150...500	4,5	2	150					98	1
2N 3396	Ge	N	S	25	25	5	100	360	125	90....500	4,5	2	90					98	1
2N 3397	Ge	N	S	25	25	5	100	360	125	55....500	4,5	2	55					98	1
2N 3398	Ge	N	S	25	25	5	100	360	125	55....800	4,5	2	55					98	1
2N 3399		P	G	20				80	100	10		1,5				400			3
2N 3400		P	G	20	20			150	100	50....300		10				150			5
2N 3401	So	P	S	25	25	25		250	150				4					4	5,9
2N 3402	Se	N	S	25	25			560	150	75....225		2	75						1
2N 3403	Se	N	S	25	25			560	150	180...540		2	180						1
2N 3404	Se	N	S	50	50			560	150	75....225		2	75						1
2N 3405	Se	N	S	50	50			560	150	180...540		2	100						1
2N 3407		N	S	35	18			200	200	10....100		10	10			300			3



Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 3408		P	S	40	25			4W	200	10....100		40	10			200			3
2N 3412		P	G	20	20			60	100	30....200		10	25			100			1
2N 3413		P	S	150	150			400	200	10.....45		50				0,25			1
2N 3414	Se	N	S	25	25			360	160	75....225		2	75						1
2N 3415	Se	N	S	25	25			360	160	180...540		2	180						1
2N 3416	Se	N	S	50	50			360	160	75....225		2	75						1
2N 3417	Se	N	S	50	50			360	160	180...540		2	100						1
2N 3418	Tx	N	S	85	60	8	3A	1W	200	20.....60	2	1A				40		4	5
2N 3419	Tx	N	S	125	80	8	3A	1W	200	20.....60	2	1A				40		4	5
2N 3420	Tx	N	S	85	60	8	3A	1W	200	40....120	2	1A				40		4	5
2N 3421	Tx	N	S	125	80	8	3A	1W	200	40....120	2	1A				40		4	5
2N 3426	Ph	N	S	25	12			600	200	30....120		300				450			5
2N 3427	Mo	P	G	45	30	30	500	200	100	100...350	1	100	200...500	6	1			4	1
2N 3428	Mo	P	G	45	30	30	500	200	100	150...400	1	100	350...800	6	1			4	1
2N 3429	Wb	N	S	50	50			150W	175	10.....35		5A							5
2N 3430	Wb	N	S	100	100			150W	175	10.....35		5A							5
2N 3431	Wb	N	S	150	150			150W	175	10.....35		5A							5
2N 3432	Wb	N	S	200	200			150W	175	10.....35		5A							5
2N 3433	Wb	N	S	250	250			150W	175	10.....35		5A							5
2N 3434		N	S	300	300			150W	175	10.....35		5A							5
2N 3435	Rc	N	S	80	60			1W	200	50....200		10				140			4
2N 3439	Rc	N	S	450	350	7	1A	1W	200	40....160	10	20	25			15		4	3
2N 3440	Rc	N	S	300	250	7	1A	1W	200	40....160	10	20	25			15		4	3
2N 3441	Rc	N	S	160	140	7	3A	25W	200	20.....80	4	500	15			0,2		40	2
2N 3442	Rc	N	S	160	140	7	10A	117W	200	20.....70	4	3A	12					3	2
2N 3443		P	G	20	15			300	100	20....150		10	20			750			3
2N 3444	Tx	N	S	80	50			1W	200	20.....60		500				150			5
2N 3445	Mo	N	S	80	60	6	7.5A	115W	200	20.....60	5	3A	20....100	10	500			3	2
2N 3446	Mo	N	S	100	80	10	7,5A	115W	200	20.....60	5	3A	20....100	10	500			3	2
2N 3447	Mo	N	S	80	60	6	7,5A	115W	200	40....120	5	3A	40....200	10	500			3	2
2N 3448	Mo	N	S	100	80	10	7,5A	115W	200	40....120	5	3A	40....200	10	500			3	2
2N 3449		P	G	15	6			150	100	20		10				300			5
2N 3450		N	S	120	60			600	200	40....120		150				100			5
2N 3451	Ns	P	S	6	6			300	200	30....120		10				500			5
2N 3461	So	P	G	60	30			5W	110	90....150		500	40						2
2N 3462		N	S	50	35			300	200	100...300			150			10			1
2N 3463		N	S	60	45			300	200	120...360			150			45			1
2N 3464		N	S	60	40			5W	200	35....100		200	30			50			4
2N 3467	Tx	P	S	40	40	5	1A	10W	200	40....120	1	500				175		12	2,5
2N 3468	Tx	P	S	50	50	5	1A	10W	200	25.....75	1	500				150		12	2,5
2N 3469	So	N	S	35	25			1W	200	100...350		500	100			20			4
2N 3470	Wb	N	S	50	50			150W	150	100...500		9A	50						2
2N 3471	Wb	N	S	100	100			150W	150	100...500		9A	50						2
2N 3472	Wb	N	S	150	150			150W	150	100...500		9A	50						2
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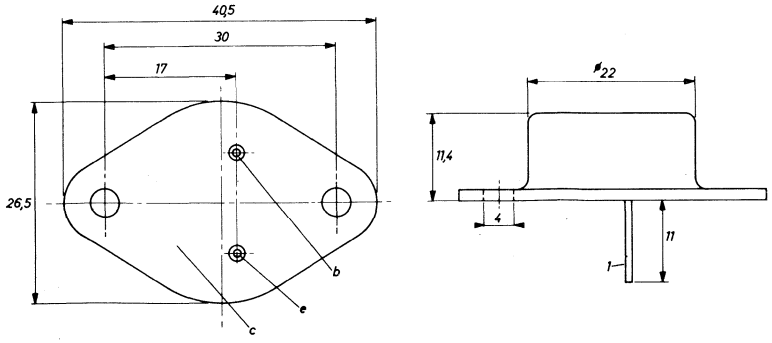

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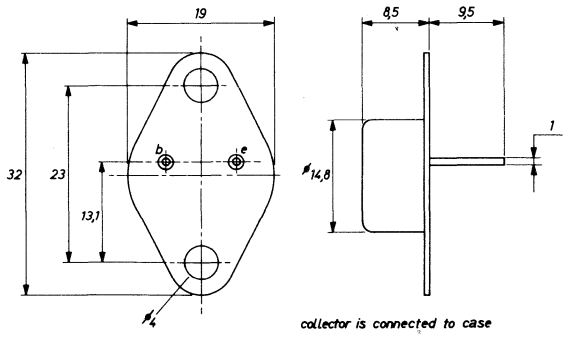

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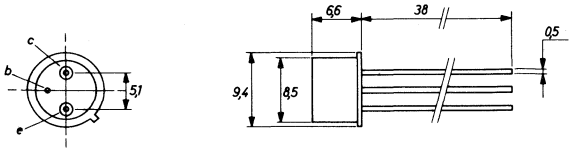

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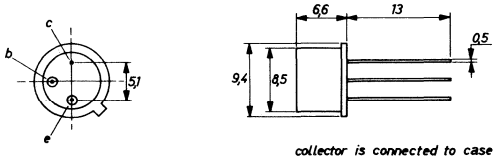
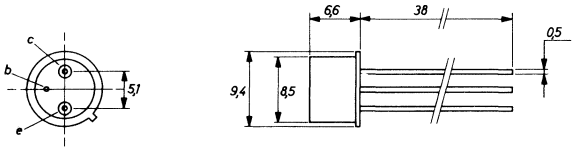


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3474	Wb	N	S	50	50			150W	150	700		4A	100						2
2N 3475	Wb	N	S	100	100			150W	150	700		4A	100						2
2N 3476	Wb	N	S	150	150			150W	150	700		4A	100						2
2N 3477	Wb	N	S	200	200			150W	150	700		4A	100						2
2N 3478	Rc	N	S	30	15	2		200	200	25....150	8	2	25	8	2	750		36	3
2N 3485	Tx	P	S	60	40	5	600	2W	200	40....120	10	150						17	1,5
2N 3485A	Tx	P	S	60	60	5	600	2W	200	40....120	10	150						17	1,5
2N 3486	Tx	P	S	60	40	5	600	2W	200	100...300	10	150						17	1,5
2N 3486A	Tx	P	S	60	60	5	600	2W	200	100...300	10	150						17	1,5
2N 3487	Mo	N	S	80	60	10	7,5A	117W	200	20.....60	5	3A	20....100	10	500			27	2
2N 3488	Mo	N	S	100	80	10	7,5A	117W	200	20.....60	5	3A	20....100	10	500			27	2
2N 3489	Mo	N	S	120	100	10	7,5A	117W	200	15.....45	5	3A	20....100	10	500			27	2
2N 3490	Mo	N	S	80	60	10	7,5A	117W	200	40....120	5	5A	40....200	10	500			27	2
2N 3491	Mo	N	S	100	80	10	7,5A	117W	200	40....120	5	5A	40....200	10	500			27	2
2N 3492	Mo	N	S	120	100	10	7,5A	117W	200	30.....90	5	5A	40....200	10	500			27	2
2N 3493	Mo	N	S	12	8			150	200	40....120		500				400			5
2N 3494	Tx	P	S	90	80	4,5	100	600	200	40	10	50	40....300	10	10			4	1,5
2N 3495	Tx	P	S	120	120	4,5	100	600	200	40	10	50	40....300	10	10			4	1,5
2N 3496	Tx	P	S	80	80	4,5	100	400	200	40	10	50	40....300	10	10			9	1,5
2N 3497	Tx	P	S	120	120	4,5	100	400	200	40	10	50	40....300	10	10			9	1,5
2N 3498	Mo	N	S	100	100	6	500	5W	200	40....120	10	150	50....300	10	10	150	175	4	3
2N 3499	Mo	N	S	100	100	6	500	5W	200	100...300	10	150	75....375	10	10	150	175	4	3
2N 3500	Mo	N	S	150	150	6	300	5W	200	40....120	10	150	50....300	10	10	150	175	4	3
2N 3501	Mo	N	S	150	150	6	300	5W	200	100...300	10	150	75....375	10	10	150	175	4	3
2N 3502	Tx	P	S	45	45			700	200	115...300		50	135			200			5
2N 3503	Tx	P	S	60	60			700	200	115...300		50	135			200			5
2N 3504	Tx	P	S	45	45			400	200	115...300		50	135			200			5
2N 3505	Tx	P	S	60	60			400	200	115...300		50	135			200			5
2N 3507	Mo	N	S	80	50	5	3A	5W	200	30....150	2	1,5A				60	175	4	5
2N 3508	Mo	N	S	40	20	6	500	2W	200	40....120	1	10					87	17	5
2N 3509	Mo	N	S	40	20	6	500	2W	200	100...300	1	10					87	17	5
2N 3510	Mo	N	S	40	10	6	500	1,2W	200	25....150	1	150	20....150	10	1			23	5
2N 3511	Mo	N	S	40	15	6	500	1,2W	200	30....120	1	150	20....150	10	1			23	5
2N 3512	Rc	N	S	60	35	5		800	200	10	1	500	2,5	10	50	250		4	5
2N 3526		N	S	130	120			800	200	30....120		30	25			40			3
2N 3527		P	S	30	30			400	200	25.....75			100			5			1
2N 3543	It	N	S	65	60			60W	200	10.....80		4,5A				150			4
2N 3544	Mo	N	S	25	25	3	100	300	175	25	10	10						9	3
2N 3545	Ns	P	S	20	20			360	200	40....120		10				250			5
2N 3546	Ns	P	S	15	12			360	200	30....120		10				750			5
2N 3547	Ns	P	S	60	60			360	200	100...500		1	120			45			1
2N 3548	Ns	P	S	60	45			400	200	100...300			150			60			1
2N 3549	Ns	P	S	60	60			400	200	100...500			150			60			1
2N 3550	Ns	P	S	60	45			400	200	200...600			300			60			1
2N 3551	Tx	N	S	115	60	7	12A	40W	175	20.....90	2	10A				40	125	51	4

4



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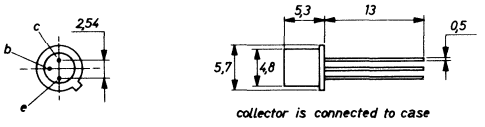

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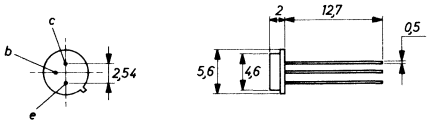

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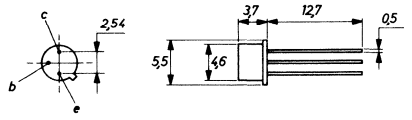

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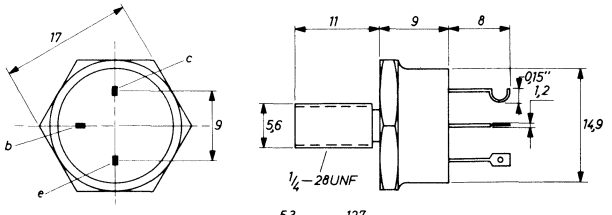

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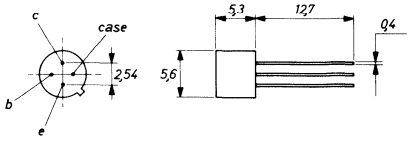

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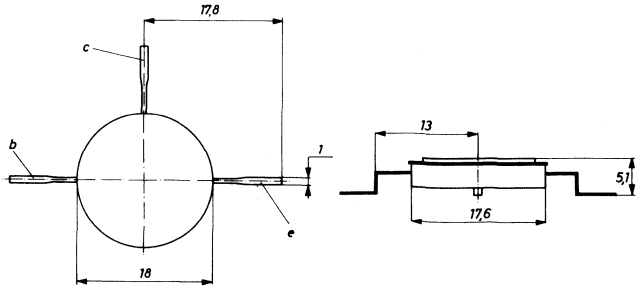

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 3552	Tx	N	S	140	80	7	12A	40W	175	20.....90	2	10A				40	125	51	4
2N 3553	Rc	N	S	65	40	4	330	7W	200							500		12	3
2N 3554	Tx	N	S	60	30			800	200	25....100		750				150			5
2N 3563	Ns	N	S	30	12			200	125	20....200		8	20			600			3
2N 3564	Ns	N	S	30	15			200	125	20....500		15	20			400			3
2N 3565	Ns	N	S	30	25			200	125	150...600		1	120			40			1
2N 3566	Ns	N	S	40	30			300	125	150...600		10				40			1
2N 3567	Ns	N	S	80	40			300	125	40....120		150				60			1
2N 3568	Ns	N	S	80	60			300	125	40....120		150				60			1
2N 3569	Ns	N	S	80	40			300	125	100...300		150				60			1
2N 3570	Tx	N	S	30	15	3	50	200	200	20....150	6	5	20....200	6	5			30	3
2N 3571	Tx	N	S	25	15	3	50	200	200	20....200	6	5	20....250	6	5			30	3
2N 3572	Tx	N	S	25	13	3	50	200	200	20....300	6	5	20....350	6	5			30	3
2N 3567	Ns	P	S	20	15			360	200	40....120		10				400			5
2N 3577		N	S	100	80			85W	175	12.....60		1A	12			10			4
2N 3579	So	P	S	80	60	6		400	200	30....120	5	1	30....150	5	1	80		17	3
2N 3580	So	P	S	80	60	6		400	200	60....240	5	1	60....300	5	1	80		17	3
2N 3581	So	P	S	50	40	6		400	200	50....150	5	0,1	50....200	5	0,1	30		17	3
2N 3582	So	P	S	50	40	6		400	200	100...300	5	0,1	100...400	5	0,1	30		17	3
2N 3583	Rc	N	S	250	175	6	2A	35W	200	40....200	10	500	3	10	200	10	70	40	4
2N 3584	Rc	N	S	375	250	6	2A	35W	200	25....100	10	1A	3	10	200	10		40	5
2N 3585	Rc	N	S	500	300	7	2A	35W	200	25....100	10	1A	3	10	200	10		40	5
2N 3586		P	S	45	45			125	200							0,1			5,9
2N 3589		N	S	200	200			2W	175	30.....90		200	30			15			4
2N 3590		N	S	200	200			2W	175	75....150		200	75			15			4
2N 3591		N	S	200	200			1W	175	30.....90		200	30			15			4
2N 3592		N	S	200	200			1W	175	75....150		200	75			15			4
2N 3593		N	S	200	200			1W	175	30.....90		200	30			15			4
2N 3594		N	S	200	200			1W	175	75....150		200	75			15			4
2N 3595		N	S	200	200			1,5W	175	30.....90		200	30			15			4
2N 3596		N	S	200	200			1,5W	175	75....150		200	75			15			4
2N 3597	So	N	S	60	40	8	20A	100W	200	40....120	2	10A	75			30		28	5
2N 3598	So	N	S	80	60	8	20A	100W	200	40....120	2	10A	75			30		28	5
2N 3599	So	N	S	100	80	8	20A	100W	200	40....120	2	10A	75			30		28	5
2N 3600	Rc	N	S	30	15	3		200	200	20....150	1	3	40....200	6	2	850		30	3
2N 3601		P	G	100	40			286	100	60....180		1A	50			20			5
2N 3602		P	G	100	40			286	100	60....180		1A	50			20			5
2N 3603		P	G	130	55			286	100	60....180		1A	50			20			5
2N 3604		P	G	130	55			286	100	60....180		1A	50			20			5
2N 3605	Se	N	S	18	14			200	150	30		10				300			5

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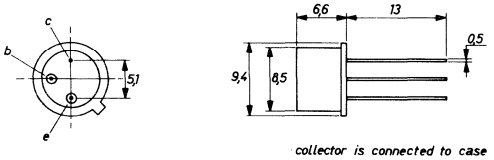
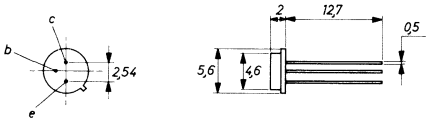


collector is connected to case

17



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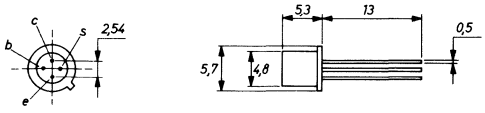

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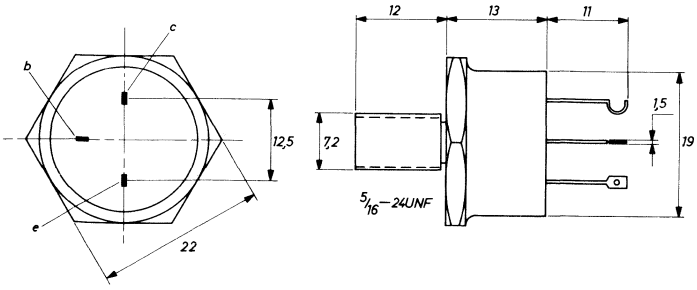

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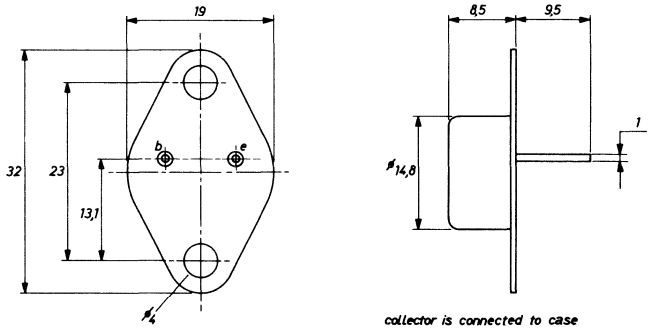

collector is connected to case

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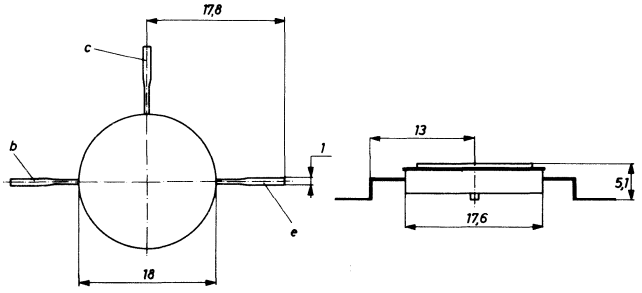
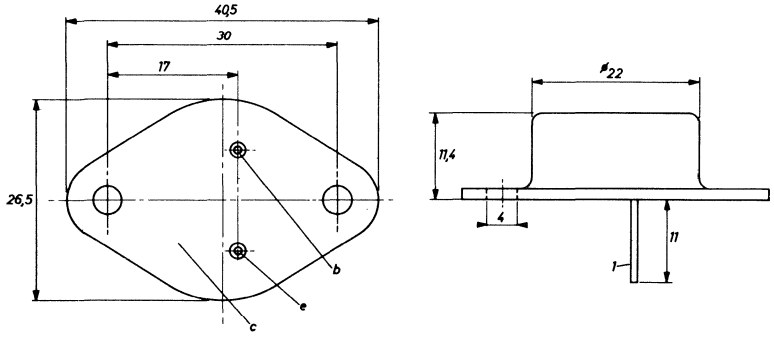


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3605A		N	S	40	15			320	120	30....120		10				300			5
2N 3606	Se	N	S	18	14			200	150	30		10				300			5
2N 3606A		N	S	40	15			320	120	30....120		10				300			5
2N 3607	Se	N	S	18	14			200	150	30		10				300			5
2N 3611	Mo	P	G	40	25	20	7A	77W	110	35.....70	2	3A	40....100	2	500		32,7	3	2,5
2N 3612	Mo	P	G	60	35	30	7A	77W	110	35.....70	2	3A	40....100	2	500		32,7	3	25
2N 3613	Mo	P	G	40	25	20	7A	77W	110	60....120	2	3A	60....150	2	500		32,7	3	2,5
2N 3614	Mo	P	G	60	35	30	7A	77W	110	60....120	2	3A	60....150	2	500		32,7	3	2,5
2N 3615	Mo	P	G	80	50	40	7A	77W	110	30.....60	2	3A	40....100	2	500		32,7	3	2,5
2N 3616	Mo	P	G	100	60	50	7A	77W	110	30.....60	2	3A	40....100	2	500		32,7	3	2,5
2N 3617	Mo	P	G	80	50	40	7A	77W	110	45.....90	2	3A	60....150	2	500		32,7	3	2,5
2N 3618	Mo	P	G	100	60	50	7A	77W	110	45.....90	2	3A	60....150	2	500		32,7	3	2,5
2N 3619	So	N	S	75	40			7,5W	175	40		1A				200			4
2N 3620	So	N	S	75	40	4	10A	7,5W	175	30	10	5A				200			4
2N 3621	So	N	S	75	40	4	10A	30W	175	40	10	5A				200		27	4
2N 3622	So	N	S	75	40	4	10A	30W	175	40	10	5A				200		27	4
2N 3623	So	N	S	75	40			7,5W	175	40		1A				200			4
2N 3624	So	N	S	75	40	4	10A	7,5W	175	30	10	5A				200			4
2N 3625	So	N	S	75	40	4	10A	30W	175	40	10	5A				200		27	4
2N 3626	So	N	S	75	40	4	10A	30W	175	40	10	5A				200		27	4
2N 3627	So	N	S	100	50			7,5W	175	40		1A				200			4
2N 3628	So	N	S	100	50	4	10A	7,5W	175	30	10	5A				200		113	4
2N 3629	So	N	S	100	50	4	10A	50W	175	40	10	5A				200		27	4
2N 3620	So	N	S	100	50	4	10A	50W	175	40	10	5A				200		27	4
2N 3632	Rc	N	S	65	40	4	3A	23W	200							400		26	4
2N 3633	Tr	N	S	15	6			300	200	50....150		10				1300			5
2N 3634	Mo	P	S	140	140	5	1A	5W	200	50....150	10	50	40....160	10	10	150		4	2,5
2N 3635	Mo	P	S	140	140	5	1A	5W	200	100...300	10	50	80....320	10	10	200		4	2,5
2N 3636	Mo	P	S	175	175	5	1A	5W	200	50....150	10	50	40....160	10	10	150		4	2,5
2N 3637	Mo	P	S	175	175	5	1A	5W	200	100...300	10	50	80....320	10	10	200		4	2,5
2N 3638	Ns	P	S	25	25			300	125	30		50	25			100			5
2N 3639	Ns	P	S	6	6			200	125	30....120		10				500			5
2N 3640	Ns	P	S	12	12			200	125	30....120		10				500			5
2N 3641	Ns	N	S	60	30			350	125	40....120		150				250			4
2N 3642	Ns	N	S	60	45			350	125	40....120		150				250			4
2N 3643	Ns	N	S	60	30			350	125	100...300		150				250			4
2N 3644	Ns	P	S	45	45			300	125	115...300		50				200			5
2N 3645	Ns	P	S	60	60			300	125	115...300		50				200			5
2N 3646	Ns	N	S	40	15			200	125	30....120		30				350			5
2N 3647	Mo	N	S	40	10	6	500	2W	200	25....150	1	150	20....150	10	1			17	5

3



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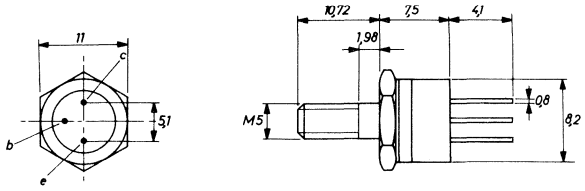

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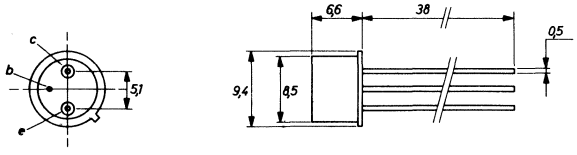

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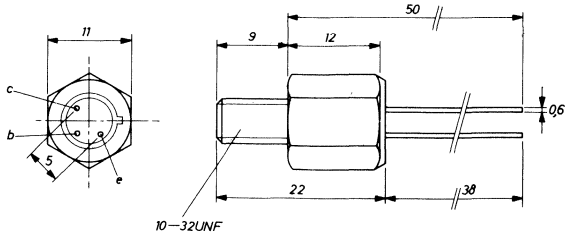

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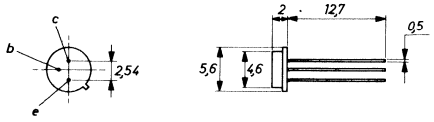

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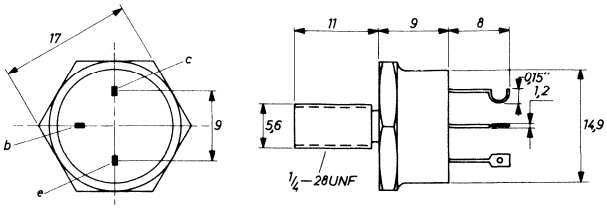

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max.	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 3648	Mo	N	S	40	15	6	500	2W	200	30....120	1	150	20....150	10	1			17	5
2N 3659		N	S	220	170			4W	200	20		10	20			50			3
2N 3660	So	P	S	40	30	5	2A	5W	200	25....100	10	500				25		4	4
2N 3661	So	P	S	60	50	5	2A	5W	200	25....100	10	500				25		4	4
2N 3662	Se	N	S	18	12			200	125	20		8				700			3
2N 3663	Se	N	S	30	12			200	125	20		8				700			3
2N 3664	Mo	N	S	60	40	4	500	5W	200	8.....80	2	50				500	175	109	2,5
2N 3665	Ns	N	S	120	80			5W	200	40....120		150				60			5
2N 3666	Ns	N	S	120	80			5W	200	100...300		150				60			5
2N 3667	So	N	S	50	50	5	20A	117W	200	15.....60	5	8A				0,5		3	4
2N 3671	Ns	P	S	60	50			600	200	75....225		150				200			5
2N 3672	Ns	P	S	60	50			400	200	75....225		150				200			5
2N 3673	Ns	P	S	60	50			350	200	75....225		150				200			5
2N 3675	So	N	S	90	55			9W	200	12.....60		1A				1			5
2N 3676	So	N	S	90	90			9W	200	12.....60		1A				1			5
2N 3677		P	S	30	20			400	200							5			5,9
2N 3678	Ns	N	S	75	55			800	200	40....120		150				250			5
2N 3681		N	S	10	7			200	200	20....220		2	20			1000			3
2N 3682		N	S	40	15			360	200	40....120		10	45			600			3
2N 3683		N	S	30	12			200	200	20....150		8	30			1000			3
2N 3688		N	S	40	40			200	125	30		4				400			3
2N 3689		N	S	40	40			200	125	30		4				400			3
2N 3690		N	S	40	40			200	125	30		4				400			3
2N 3691	Ns	N	S	35	20			200	125	40....160		10	40			200			1
2N 3692	Ns	N	S	35	20			200	125	100...400		10	100			200			1
2N 3693	Ns	N	S	45	45			200	125	40....160		10				200			3
2N 3694	Ns	N	S	45	45			200	125	100...400		10				200			3
2N 3700	Ph	N	S	140	80			500	200	100...300		150	80			100			3
2N 3701	Ph	N	S	140	80			500	200	40....120		150	30			80			3
2N 3702	Tx	P	S	40	25	5	200	360	150	60....300	5	50				100		34	1
2N 3703	Tx	P	S	50	30	5	200	360	150	30....150	5	50				100		34	1
2N 3704	Tx	N	S	50	30	5	800	360	150	100...300	2	50				100		34	1
2N 3705	Tx	N	S	50	30	5	800	360	150	50....150	2	50				100		34	1
2N 3706	Tx	N	S	40	20	5	800	360	150	30....600	2	50				100		34	1
2N 3707	Tx	N	S	30	30	6	30	250	150	100...400	5	0,1	100...550	5	0,1	80		34	1
2N 3708	Tx	N	S	30	30	6	30	250	150	45....660	5	1	45....800	5	1	80		34	1
2N 3709	Tx	N	S	30	30	6	30	250	150	45....165	5	1	45....250	5	1	80		34	1
2N 3710	Tx	N	S	30	30	6	30	250	150	90....330	5	1	90....450	5	1	80		34	1
2N 3711	Tx	N	S	30	30	6	30	250	150	180...660	5	1	180...800	5	1	80		34	1
2N 3712	Mo	N	S	150	150	5	200	5W	200	30....150	10	30	25	10	30	240		4	3
2N 3713	Tx	N	S	80	60	7	10A	150W	200	25.....75	2	1A	25....250	10	500	4	43	3	2,5
2N 3714	Tx	N	S	100	80	7	10A	150W	200	25.....75	2	1A	25....250	10	500	4	43	3	2,5
2N 3715	Tx	N	S	80	60	7	10A	150W	200	50....150	2	1A	25....250	10	500	4	43	3	2,5
2N 3716	Tx	N	S	100	80	7	10A	150W	200	50....150	2	1A	25....250	10	500	4	43	3	2,5
2N 3717		N	S	60	60			7,5W	200	2.....100		500				250			4
2N 3718		N	S	60	60			10W	200	2.....100		500				250			4
2N 3719	Mo	P	S	40	40	4	3A	6W	200	25....180	1,5	1A				60		4	5
2N 3720	Mo	P	S	60	60	4	3A	6W	200	25....180	1,5	1A				60		4	5
2N 3721	Ge	N	S	18	18	5	100	360	125	60....660	10	2	60			120		98	1
2N 3722	Mo	N	S	80	60	5	500	4W	200	40....150	1	100				300		4	5

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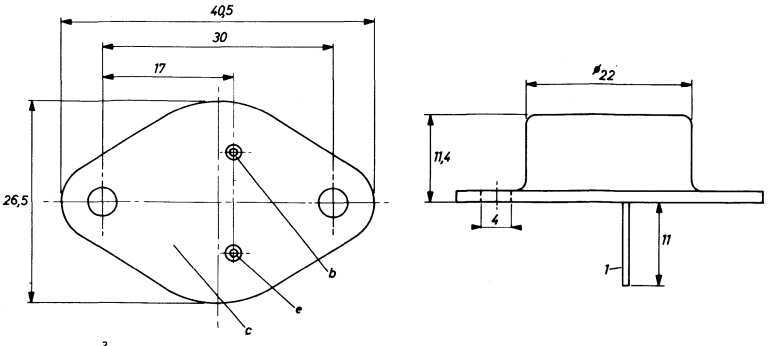

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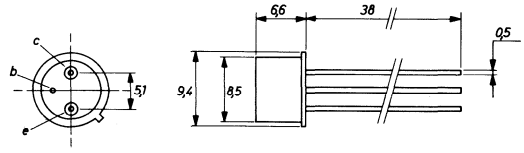

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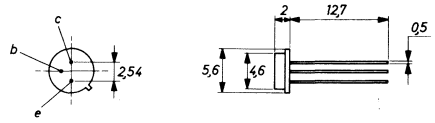

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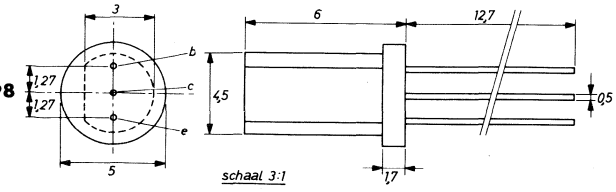

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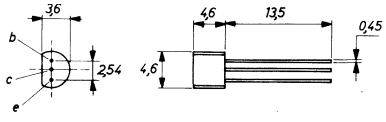

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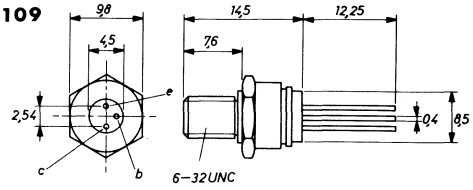
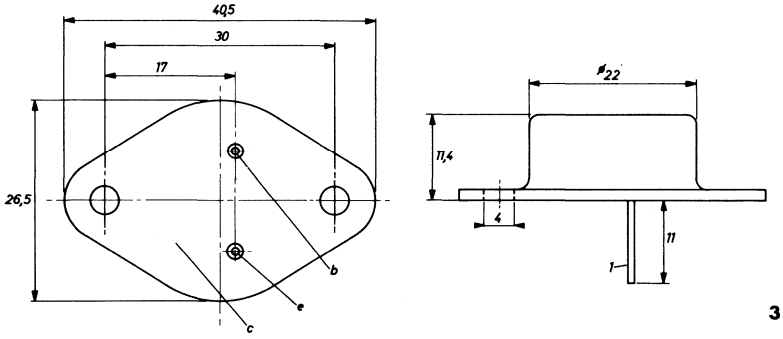


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3723	Mo	N	S	100	80	6	500	4W	200	40....150	1	100				300		4	5
2N 3724	Tx	N	S	50	30	6	500	800	200	50....150	1	100				300		12	5
2N 3724A	Tx	N	S	50	30	6	1,2A	1W	200	60....150	1	100						12	5
2N 3725	Tx	N	S	80	50	6	500	800	200	60....150	1	100				300		12	5
2N 3725A	Tx	N	S	80	50	6	1,2A	1W	200	60....150	1	100						12	5
2N 3730	Rc	P	G	200	200	0,5	3A	10W	200									3	2
2N 3731	Rc	P	G	320	320	2	10A	5W	100	15		6A						3	2
2N 3732	Rc	P	G	100	100	0,5	3	3W	100	35....500		700				1		3	2
2N 3733	Mo	N	S	65	40	4	3A	23W	200							400		26	4
2N 3734	Mo	N	S	50	30	5	1,5A	4W	200	30....120	1,5	1A	2,5	10	50		175	4	5
2N 3734A		N	S	50	30			1W		30....120		1A	2,5						5
2N 3735	Mo	N	S	75	50	5	1,5A	5W	200	20.....80	1,5	1A	2,5	10	50		175	4	5
2N 3735A		N	S	75	50			1W		20.....80		1A	2,5						5
2N 3736	Mo	N	S	50	30	5	1,5A	2W	200	30....120	1,5	1A	2,5	10	50		350	17	5
2N 3736A		N	S	50	30			500		30....120		1A	2,5						5
2N 3737	Mo	N	S	75	50	5	1,5A	2W	200	20.....80	1,5	1A	2,5	10	50		350	17	5
2N 3737A		N	S	75	50			500		20.....80		1,1A	2,5						5
2N 3738	Mo	N	S	250	225	6	3A	20W	175	40....200	10	100	35	20	100		10	40	2
2N 3739	Mo	N	S	325	300	6	3A	20W	175	40....200	10	100	35	20	100		10	40	2
2N 3740	Mo	P	S	60	60	7	4A	25W	200	30....100	1	250	25	10	50	3		40	2
2N 3740A	Mo	P	S	60	60	7	4A	25W	200	30....100	1	250	25	10	50	3		40	2
2N 3741	Mo	P	S	80	80	7	4A	25W	200	30....100	1	250	25	10	50	3		40	2
2N 3741A	Mo	P	S	80	80	7	4A	25W	200	30....100	1	250	25	10	50	3		40	2
2N 3742	Mo	N	S	300	300	7	50	5W	200	20....200	10	30	20....200	10	10			4	3
2N 3743	Mo	P	S	300	300	5	50	5W	200	25....250	10	30	30....300	10	10			4	3
2N 3744	So	N	S	60	40	7	5A	30W	200	20.....60		1A	20			70		38	4
2N 3745	So	N	S	80	60	8	5A	30W	200	20.....60		1A	20			70		38	4
2N 3746	So	N	S	100	80	8	5A	30W	200	20.....60		1A	20			70		38	4
2N 3747	So	N	S	60	40	7	5A	30W	200	40....120		1A	40			70		38	4
2N 3748	So	N	S	80	60	8	5A	30W	200	40....120		1A	40			70		38	4
2N 3749	So	N	S	100	80	8	5A	30W	200	40....120		1A	40			70		38	4
2N 3750	So	N	S	60	40	7	5A	30W	200	100...300		1A	100			70		38	4
2N 3751	So	N	S	80	60	8	5A	30W	200	100...300		1A	100			70		38	4
2N 3752	So	N	S	100	80	8	5A	30W	200	100...300		1A	100			70		38	4
2N 3762	Mo	P	S	40	40	5	1,5A	4W	200	30....120	1,5	1A					175	4	5

3



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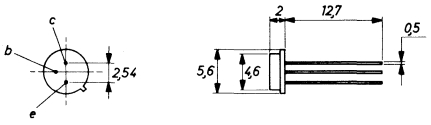

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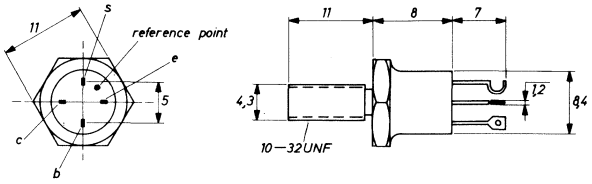

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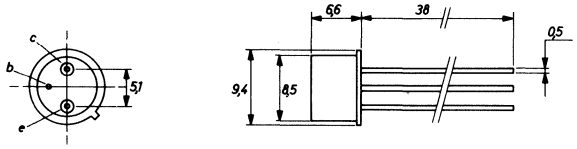

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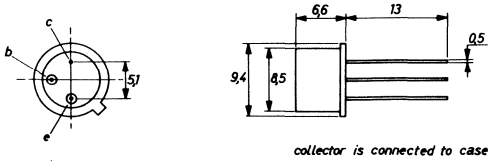

collector is connected to case

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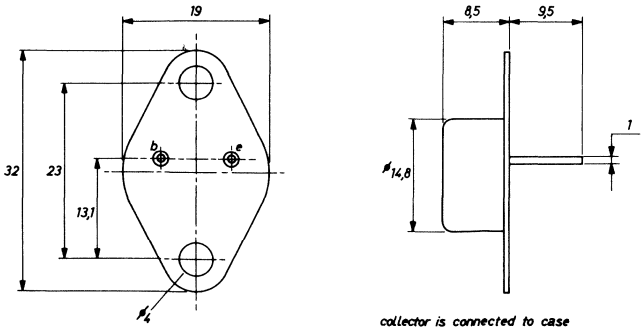

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3763	Mo	P	S	60	60	5	1,5A	4W	200	20.....80	1,5	1A					175	4	5
2N 3764	Mo	P	S	40	40	5	1,5A	2W	200	30....120	1,5	1A					350	17	5
2N 3765	Mo	P	S	60	60	5	1,5A	2W	200	20.....80	1,5	1A					350	17	5
2N 3766	Mo	N	S	80	60	6	4A	20W	175	40....160	5	500	40	10	100	10		40	2,5
2N 3767	Mo	N	S	100	80	6	4A	20W	175	40....160	5	500	40	10	100	10		40	2,5
2N 3770		P	G	10	6			50	100	10....200		1	10			100			3
2N 3771	Mo	N	S	50	40	5	30A	150W	200	15.....60	4	15A	40	4	10A	0,2		3	2
2N 3772	Mo	N	S	100	60	7	20A	150W	200	15.....60	4	10A	40	4	10A	2		3	2
2N 3773	Rc	N	S	160	140	7	16A	150W	200	15.....60	4	8A	40			0,2		3	2
2N 3774	So	P	S	40	40	8	2A	5W	200	20.....60	2	200				1		4	5
2N 3775	So	P	S	60	60	8	5A	5W	200	20.....60	2	200				1		4	5
2N 3776	So	P	S	80	80	8	5A	5W	200	20.....60	2	200				1		4	5
2N 3777	Tx	P	S	100	100			5W	200	20.....60		200				1			5
2N 3778	So	P	S	40	40	8	5A	5W	200	10.....40	2	200				1		4	5
2N 3779	So	P	S	60	60	8	2A	5W	200	10.....40	2	200				1		4	5
2N 3780	So	P	S	80	80	8	2A	5W	200	20.....60	2	200				1		4	5
2N 3781	So	P	S	100	100	8	2A	5W	200	10.....40	2	200				1		4	5
2N 3782	So	P	S	40	40	8	2A	5W	200	10.....40	3	1A				1		4	5
2N 3783	Mo	P	G	30	20	0,5	20	150	100	20....200	10	3	20....200	10	3	1600		30	3
2N 3784	Mo	P	G	30	20	0,5	20	150	100	20....200	10	3	20....200	10	3	1600		30	3
2N 3785	Mo	P	G	15	12	0,5	20	150	100	15....200	10	3	15....200	10	3	1600		30	3
2N 3788	So	N	S	400	325	5	5A	100W	200	20....180	5	500						3	2
2N 3789	Tx	P	S	60	60	7	10A	150W	200	15.....90	2	1A	25....250	10	500	4	43	3	2,5
2N 3790	Tx	P	S	80	80	7	10A	150W	200	25.....90	2	1A	25....250	10	500	4	43	3	2,5
2N 3791	Tx	P	S	60	60	7	10A	150W	200	50....180	2	1A	25....250	10	500	4	43	3	2,5
2N 3792	Tx	P	S	80	80	7	10A	150W	200	50....180	2	1A	25....250	10	500	4	43	3	2,5
2N 3793	Ns	N	S	40	20			250	125	20....120		10				100			1
2N 3794	Ns	N	S	40	20			250	125	100...600		10				100			1
2N 3795		P	S	120	120			5W	200	12.....36		10				0,5			5
2N 3798	Mo	P	S	60	60	5	50	360	200	150...450	5	1	150...600	10	1			9	1
2N 3799	Mo	P	S	60	60	5	50	360	200	300...900	5	1	300...900	10	1			9	1
2N 3818	Mo	N	S	60	60	4	2A	25W	175	5.....50	2	400				150		26	4
2N 3825	Tx	N	S	30	15			250	150	20		2				200			3
2N 3826	Tx	N	S	60	45			200	150	40....160		10				200			3
2N 3827	Tx	N	S	60	45			200	150	100...400		10				200			3

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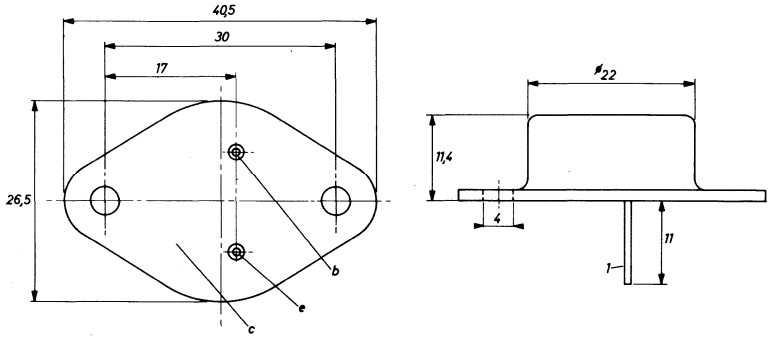

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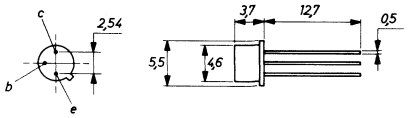

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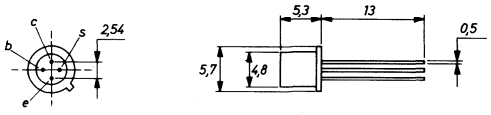

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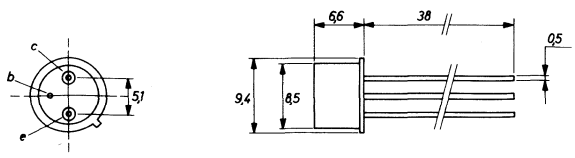

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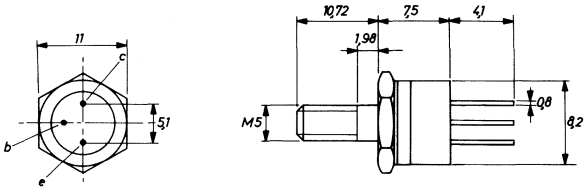

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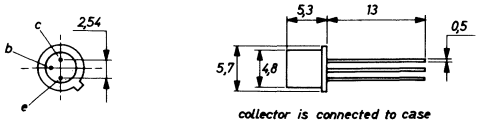

collector is connected to case

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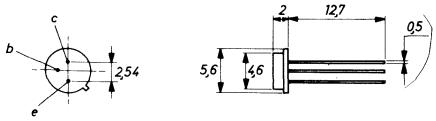

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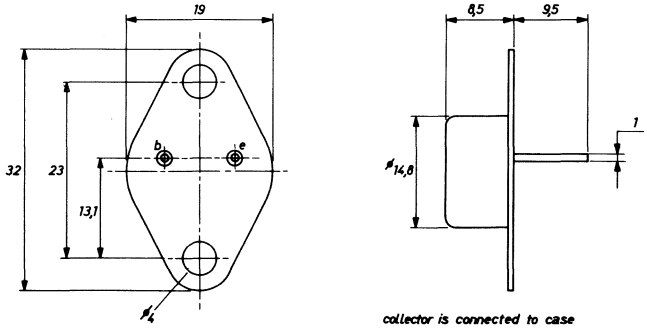
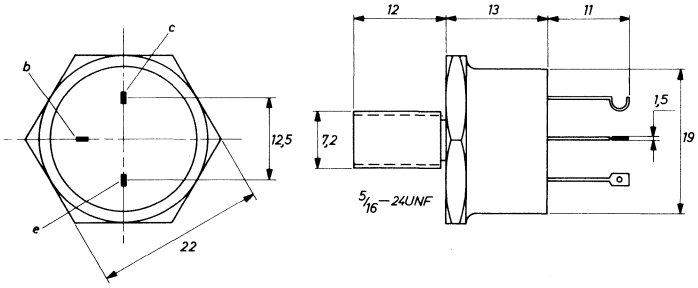


collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
2N 3828	Tx	N	S	40	40			300	150	30....200		12				360			3
2N 3829	Tx	P	S	35	20	5	200	360	200	30....120	0,4	30				350		23	5
2N 3830	Tx	N	S	80	50			1W	200	30		150				200			5
2N 3831	Tx	N	S	70	40			1W	200	35		150				200			5
2N 3832	Tx	N	S	15	6			200	200	25....125		2				800			5
2N 3833	Tx	N	S	25	15					20		30	2,5						4
2N 3834	Tx	N	S	25	15					20		30	2,5						4
2N 3835	Tx	N	S	25	15					20		30	2,5						4
2N 3839	Rc	N	S	30	15	2,5				30....150	1	3	50....220	6	2	1200		30	3
2N 3840	Sp	P	S	50	50			400	200	30		0,2				6			5,9
2N 3841		P	S	100	100			300	200	15		0,2				1,5			5,9
2N 3842		P	S	120	120			300	200	10		1				1			5,9
2N 3843	Sp	N	S	30	30			200	125	20.....40		2				60		98	3
2N 3843A	Sp	N	S	30	30			200	125	20.....40		2				60		98	3
2N 3844	Sp	N	S	30	30			200	125	35.....70		2				90		98	3
2N 3844A	Sp	N	S	30	30			200	125	35.....70		2				90		98	3
2N 3845	Sp	N	S	30	40			200	125	60....120		2				126		98	3
2N 3845A	Sp	N	S	30	30			200	125	60....120		2				126		98	3
2N 3846	Tx	N	S	300	200	10	20A	150W	175	10.....60	3	10A	50....250	10	5A	10	37,5	28	2
2N 3847	Tx	N	S	400	300	10	20A	150W	175	10.....60	3	10A	50....250	10	5A	10	37,5	28	2
2N 3848	Tx	N	S	300	300			4W	175	10.....60		15A	50			10			2
2N 3849	Tx	N	S	400	300			4W	175	10.....60		15A	50			10			2
2N 3850	So	N	S	100	80	5	5A	30W	200	50....150	1	1A				20		38	5
2N 3851	So	N	S	100	80	5	5A	30W	200	30.....90	1	1A				20		38	5
2N 3852	So	N	S	60	40	5	5A	30W	200	50....150	1	1A				20		38	5
2N 3853	So	N	S	60	40	5	5A	30W	200	30.....90	1	1A				20		38	5
2N 3854	Sp	N	S	18	18			200	150	35.....70		2				100			3
2N 3854A	Sp	N	S	30	30			200	150	35.....70		2				100			3
2N 3855	Sp	N	S	18	18			200	150	60....120		2				130			3
2N 3854A	Sp	N	S	30	30			200	150	60....120		2				130			3
2N 3856	Sp	N	S	18	18			200	150	100...200		2				140			3
2N 3856A	Sp	N	S	30	30			200	150	100...200		2				140			3
2N 3857	Ns	P	S	45	45			600	200	50....200		1	45			4			1
2N 3858	Sp	N	S	30	30			200	125	60....120		2				90			3
2N 3858A	Sp	N	S	60	60			200	100	45		1				90			3
2N 3859	Sp	N	S	30	30			200	125	100...200		2				90			3
2N 3859A	Sp	N	S	60	60			200	100	75		1				90			1
2N 3860	Sp	N	S	30	30			200	125	150...300		2				90			3
2N 3861		N	S	530	530			2W	175	30....200		25	20			50			2
2N 3862	Tr	N	S	50	20			360	200	50....150		10				600			5

28



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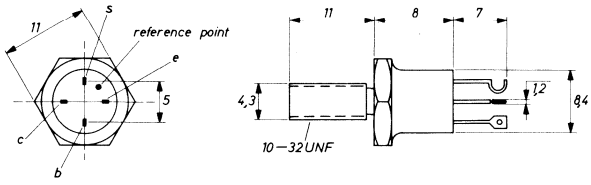

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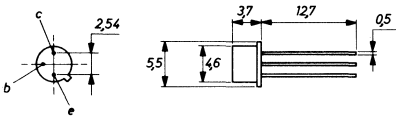

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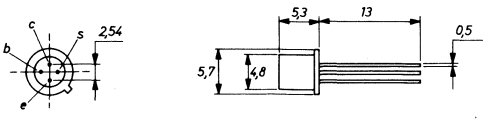

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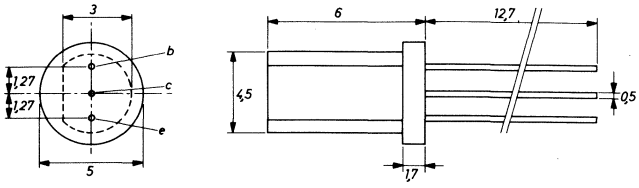
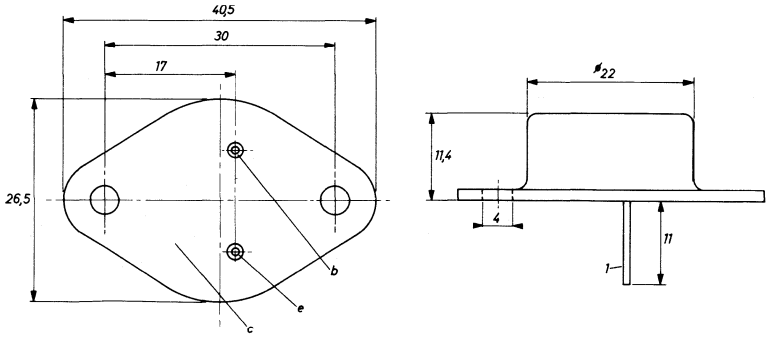


schaal 3:1

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3863	So	N	S	70	50	7	15A	117W	200	30.....60	2	3A				0,5	45	3	5
2N 3864	So	N	S	110	90	7	15A	117W	200	30.....90	2	3A				0,5	45	3	5
2N 3865		N	S	160	150			117W	200	30.....90		3A				0,5			5
2N 3866	Tx	N	S	55	30	3,5	400	5W	200	10....200	5	50				500		12	3
2N 3867		P	S	40	40			1W	200	40....200		1,5A				60			5
2N 3868		P	S	60	60			1W	200	30....150		1,5A				60			5
2N 3869		N	S	40	20			2,5W	175	20....150		30				400			4
2N 3876		N	S	140	50			150W	175	25....150		10A	80			50			2
2N 3877	Ge	N	S	70	70	4	50	200	125	20....250	4,5	2				160		98	1
2N 3878	Rc	N	S	120	50	7	7A	35W	200	40....200	5	500	6	10	500	40		40	3
2N 3879	Rc	N	S	120	75	7	7A	35W	200	20.....80	5	4A	6	10	500	40		40	5
2N 3880		N	S	30	15			200	200	30....200		3	50			1200			3
2N 3881		N	S	60	35			600	200				50			70			3
2N 3883	Mo	P	G	25	15	3	300	300	100	30	1	200				300		4	5
2N 3900	Sp	N	S	18	18			200	125	250...500		2	170						1
2N 3900A	Sp	N	S	18	18			200	125	250...500		2	170						1
2N 3901	Ge	N	S	18	18	5	100	360	125	350...700	4,5	2	350	4,5	2	200		98	1
2N 3902	Tx	N	S	400	400	5	1A	100W	150	20....100	5	1A					31	3	5
2N 3903	Mo	N	S	60	40	6	200	310	135	50....150	1	10	50....200	10	1	250	357	90	5
2N 3904	Mo	N	S	60	40	6	200	310	135	100...300	1	10	100...400	10	1	300	357	90	5
2N 3905	Mo	P	S	40	40	5	200	310	135	50....150	1	10	50....200	10	1	100	357	90	5
2N 3906	Mo	P	S	40	40	5	200	310	135	100...300	1	10	100...400	10	1	250	357	90	5
2N 3907	Ns	N	S	60	45			300	200	60....300						60			
2N 3908	Ns	N	S	60	60			300	200	100...500						60			
2N 3910		P	S	60	50			500	200	40....160		1				4			5,9
2N 3911		P	S	60	40			500	200	60....240		1				8			5,9
2N 3912		P	S	60	30			500	200	90		1				10			5,9
2N 3913		P	S	60	50			400	200	40....160		1				4			5,9
2N 3914	Tr	P	S	60	40			400	200	60....240		1				8			5,9
2N 3915		P	S	60	30			400	200	90		1				10			5,9
2N 3916		N	S	150	150			5W	150	40....200		150	30			50			2
2N 3917		N	S	80	40			20W	150	30....120		1A	15			50			2
2N 3918		N	S	80	40			20W	150	100...300		1A	30			50			2
2N 3919		N	S	120	60			15W	150	40....120		2A				80			5
2N 3920		N	S	120	60			15W	150	100...300		2A				80			5
2N 3923		N	S	150	150			800	200	30....120		25	20			40			3
2N 3924	Mo	N	S	36	18	4	500	7W	200							350		12	4
2N 3925	Mo	N	S	36	18	4	1A	10W	200							350		109	4
2N 3926	Mo	N	S	36	18	4	1,5A	11W	200							350		26	4
2N 3927	Mo	N	S	36	18	4	3A	23W	200							350		26	4

3



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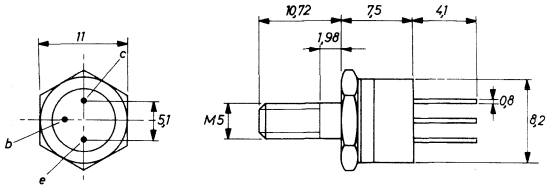

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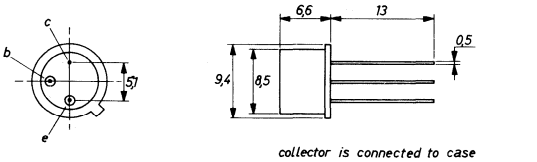
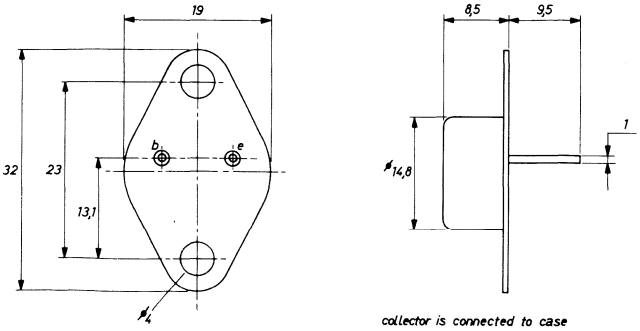


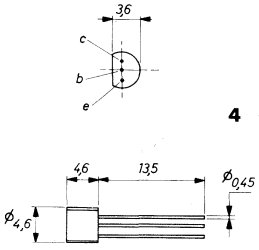
collector is connected to case

40



collector is connected to case

90



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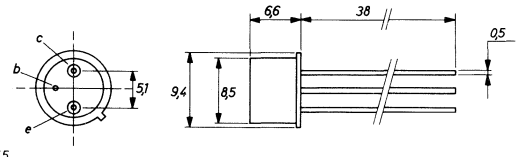

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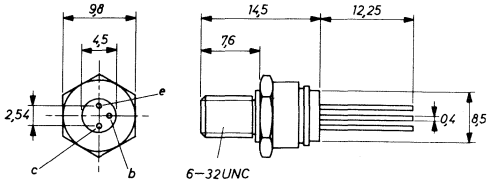

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{cco} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 3928	So	N	S	80	40	4	5A	7,5W	175	40....150	5	1A				200		4	5
2N 3929	So	N	S	80	40	4	5A	30W	175	40....150	5	1A				200		38	5
2N 3930		P	S	180	180			400	200	80....300		10	100			40			1
2N 3931		P	S	180	180			700	200	80....300		10	100			40			1
2N 3932	Rc	N	S	30	20	2,5		200	200	40....150	8	2	50			750		36	3
2N 3933	Rc	N	S	40	30	2,5		200	200	60....200	8	2	60			750		36	3
2N 3945	Ns	N	S	70	50			5W	200	40....250		150				60			5
2N 3946	Mo	N	S	60	40	6	200	360	200	50....150	1	10	50....250	10	1		490	9	1,5
2N 3947	Mo	N	S	60	40	6	200	360	200	100...300	1	10	100...700	10	1		490	9	1,5
2N 3948	Mo	N	S	36	20	3,5	400	1W	200	15	5	50				700	175	12	4
2N 3950	Mo	N	S	65	35	4	3,3A	70W	200							150	62	26	4
2N 3953		N	S	15	12			200	200	30....360		2	40			1300			3
2N 3959	Mo	N	S	20	12	4,5		400	200	40....200	1	10				1300		9	5
2N 3960	Mo	N	S	20	12	4,5		400	200	40....200	1	10				1600		9	5
2N 3961		N	S	65	40			10W	200							400			4
2N 3962	Tx	P	S	60	60	6	200	360	200	100...300	5	0,01	100...550	5	1	40		4	1
2N 3963	Tx	P	S	80	80	6	200	360	200	100...300	5	0,01	100...550	5	1	40		4	1
2N 3964	Tx	P	S	45	45	6	200	360	200	250...500	5	0,01	250...700	5	1	50		4	1
2N 3965	Tx	P	S	60	60	6	200	360	200	250...500	5	0,01	250...700	5	1	50		4	1
2N 3973		N	S	60	30			360	150	35....100		10				200			5
2N 3974		N	S	60	30			360	150	55....200		10				300			5
2N 3975	Sp	N	S	60	30			360	150	35....100		10				200			5
2N 3976	Sp	N	S	60	30			360	150	55....200		10				200			5
2N 3977	Sp	P	S	15	10			400	200	40		5				1			5,9
2N 3978	Sp	P	S	25	20			400	200	30		5				1			5,9
2N 3979	Sp	P	S	40	35			400	200	20		5				1			5,9
2N 3981	Ns	N	S	60	30			800	200	30....120		150				250			5
2N 3982	Ns	N	S	50	20			800	200	40....140		150				250			5
2N 3983		N	S	30	12			200	150	30		4				500			3
2N 3984		N	S	30	12			200	150	20		4				400			3
2N 3985		N	S	30	12			200	150	20		4				300			3
2N 3995	Tx	P	G	20	12			300	100	40....200		2	150						3
2N 3996	Tx	N	S	100	80	8	5A	30W	200	40....120	2	1A				40	87,5	38	5
2N 3997	Tx	N	S	100	80	8	5A	30W	200	80....240	2	1A				40	87,5	38	5
2N 3998	Tx	N	S	100	80	8	5A	30W	200	40....120	2	1A				40	87,5	63	5
2N 3999	Tx	N	S	100	80	8	5A	30W	200	80....240	2	1A				40	87,5	63	5
2N 4000	Tx	N	S	100	80	8	1A	15W	200	30....120	2	500				40	175	4	5
2N 4001	Tx	N	S	120	100	8	1A	15W	200	40....120	2	500				40	175	4	5
2N 4002	Tx	N	S	100	80	8	30A	100W	200	20.....80	4	15A	30	4	1A		43,7	28	2
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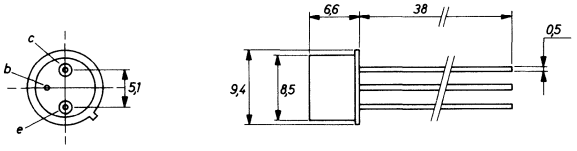
4



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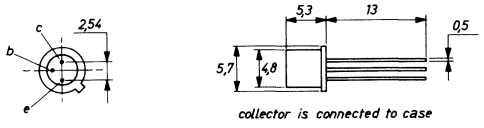

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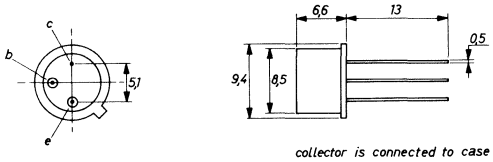

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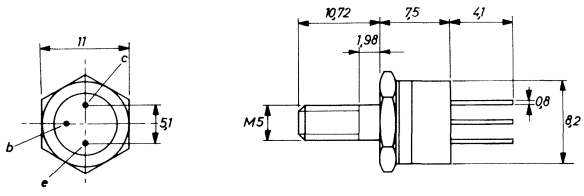

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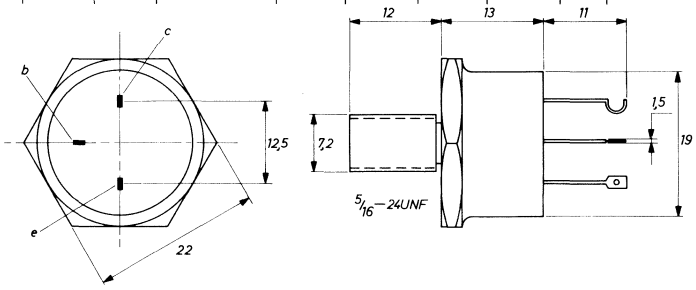

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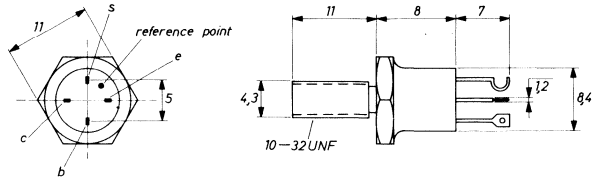

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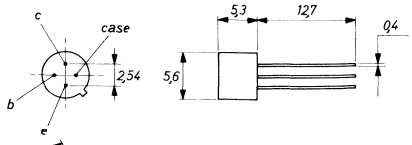

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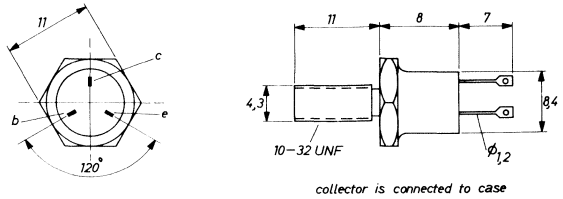

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 4004	Tx	N	S	100	80	8	20A	40W	200	30....150	4	10A	30	4	1A		146	51	2
2N 4005	Tx	N	S	120	100	8	20A	40W	200	30....150	4	10A	30	4	1A		146	51	2
2N 4006		P	S	10	6			400	200				40			20			1
2N 4007		P	S	20	15			400	200				30			15			5
2N 4008		P	S	35	30			400	200				20			15			5
2N 4012	Mo	N	S	65	40	4	1,5A	11W	200							500		26	2
2N 4013	Sp	N	S	60	40			360	200	150		100				300			5
2N 4014	Sp	N	S	80	50			360	200	150		100				300			5
2N 4017		P	S	80	80			600	200	100...500		1				40			1
2N 4018		P	S	60	60			400	200				100						1
2N 4019		P	S	45	45			400	200				250			50			1
2N 4026		P	S	60	60			500	200	40....120		100				100			1
2N 4027		P	S	80	80			600	200	40....120		100				100			1
2N 4028		P	S	60	60			500	200	100...300		100				150			1
2N 4029		P	S	80	80			500	200	100...300		100				150			1
2N 4030	Ns	P	S	60	60			800	200	40....120		100				100			1
2N 4031	Ns	P	S	80	80			800	200	40....120		100				100			1
2N 4032	Ns	P	S	60	60			800	200	100...300		100				150			1
2N 4033	Ns	P	S	80	80			800	200	100...300		100				150			1
2N 4034		P	S	40	40			360	200	70....200		10	50			400			5
2N 4035		P	S	40	40			360	200	150...300		10	150			450			5
2N 4036	Rc	P	S	90	65	7	1A	7W	200	40....140	10	150	3	10	50	60	165	4	5
2N 4037	Rc	P	S	60	40	7	1A	7W	200	50....250	10	150	3	10	50	60	165	4	5
2N 4040	Tx	N	S	60	40			17W	200	10.....80		100				400			4
2N 4041	Tx	N	S	60	40			10W	200	10.....80		75				400			4
2N 4046	It	N	S	50	30			800	200	150		100				250			5
2N 4047	Mo	N	S	80	50			800	200	150		100				250			5
2N 4048	Mo	P	G	45	30	25	60A	170W	110	60....120	2	15A						71	2
2N 4049	Mo	P	G	60	45	30	60A	170W	110	60....120	2	15A						71	2
2N 4050	Mo	P	G	75	60	40	60A	170W	110	60....120	2	15A						71	2
2N 4051	Mo	P	G	45	30	25	60A	170W	110	80....180	2	15A						71	2
2N 4052	Mo	P	G	60	45	30	60A	170W	110	80....180	2	15A						71	2
2N 4053	Mo	P	G	75	60	40	60A	170W	110	80....180	2	15A						71	2
2N 4054		N	S	300	300			6W	150	30.....90		50				15			2
2N 4055		N	S	250	250			6W	150	30.....90		50				15			2
2N 4056		N	S	200	200			6W	150	30.....90		50				15			2
2N 4057		N	S	150	150			6W	150	30.....90		50				15			2
2N 4058	Tx	P	S	30	30	6	30	360	150	100...400	5	0,1	100...550	5	0,1			34	1
2N 4059	Tx	P	S	30	30	6	30	360	150	45....660	5	1	45....800	5	1			34	1
2N 4060	Tx	P	S	30	30	6	30	360	150	45....165	5	1	45....250	5	1			34	1
2N 4061	Tx	P	S	30	30	6	30	360	150	90....330	5	1	90....450	5	1			34	1
2N 4062	Tx	P	S	30	30	6	30	360	150	180...660	5	1	180...800	5	1			34	1
2N 4063	Rc	N	S	450	350	7	1A	10W	200	40....160	10	20	3	10	10			4	2
2N 4064	Rc	N	S	300	250	7	1A	10W	200	50....160	10	20	3	10	10			4	2
2N 4068	Rc	N	S	150	150	5	200	500	175	30	10	30	80	10	30	100		37	3

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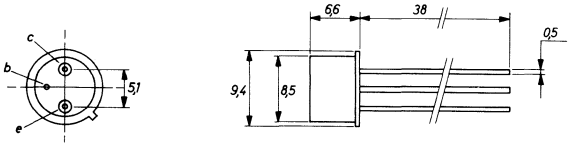

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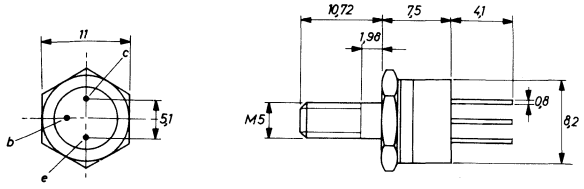

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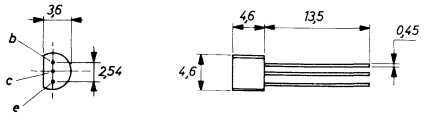

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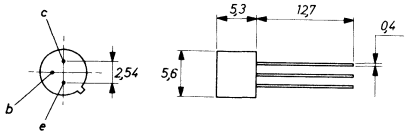

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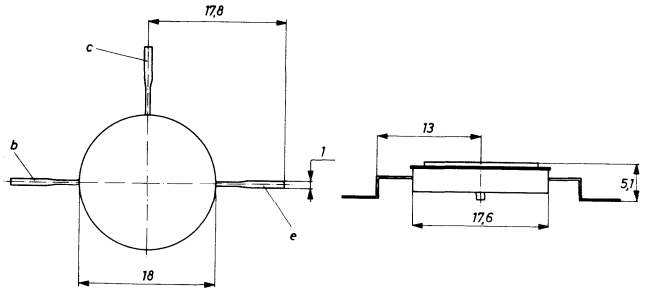

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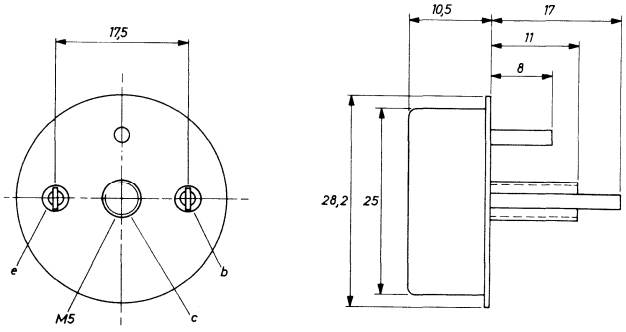

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P tot (mW)	T j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f T (MHz)	Rthj-a (°C/W)	Case	Use
2N 4069	Rc	N	S	150	150	5	200	1W	175	30	10	30	80	10	30	100	150	35	2
2N 4070	So	N	S	120	100	8	10A	115W	200	40....120	0,6	5A	40			10		3	2
2N 4071	So	N	S	200	150	8	10A	65W	200	40....120	0,6	5A				60		3	2
2N 4072	Mo	N	S	40	20	4	100	350	200	10	2	25				550		9	3
2N 4073	Mo	N	S	40	20	4	150	1,5W	200	10	2	25				550		4	3
2N 4074	Rc	N	S	40	40	8	300	500	175	75....300	10	10	175	12	10	80	300	37	3
2N 4075		N	S		80			30W	200	30.....90						30			2
2N 4076		N	S		80			30W	200	50....150						30			2
2N 4080		P	S	20	15			300	200	20		3				1000			4
2N 4081	Rc	N	S	40	40			200		40....180		2	40			600			3
2N 4086		N	S	12	12			200		150...300		2	150						1
2N 4087		N	S	12	12			200		250...500		2	250						1
2N 4087A		N	S	12	12			200		250...500		2	250						1
2N 4104	Tx	N	S	60	60			300	175				1400			540			3
2N 4106		P	G	25				2W		70....350		5							1
2N 4111	So	N	S	100	60	8	10A	83W		40....120	5	2A				70		3	2
2N 4112	So	N	S	100	60	8	10A	83W		100...300	5	2A				80		3	2
2N 4113	So	N	S	120	80	8	10A	83W		40....120	5	2A				70		3	2
2N 4114		N	S	120	80			3W		100...300		2A							2
2N 4115		N	S	120	80			37W		40....120		2A							2
2N 4116		N	S	120	80			37W		100...300		2A							2
2N 4121	Ns	P	S	40	40			200	125	70		10	50			400			3
2N 4122	Ns	P	S	40	40			200	125	150		10	150			450			3
2N 4123	Mo	N	S	49	30	5	200	310	135	50....150	1	2	50....200	1	2	250	357	90	1,5
2N 4124	Mo	N	S	30	25	5	200	310	135	120...360	1	2	120...480	1	2	300	357	90	1,5
2N 4125	Mo	P	S	30	30	4	200	310	135	50....150	1	2	50....200	1	2	200	357	90	1,5
2N 4126	Mo	P	S	25	25	4	200	310	135	120...360	1	2	120...480	1	2	250	357	90	1,5
2N 4127	Tx	N	S	60	40			25W		10.....80		200				300			2
2N 4128	Tx	N	S	60	40			40W		10.....80		200				200			2
2N 4130	So	N	S	80	65	4	10A	120W		10.....60	5	2A						3	2
2N 4131		N	S	90	80			60W		10.....80		1A							2
2N 4132		N	S	90	80			7,5W	175	10....80		200				200			4
2N 4133		N	S	90	80			3W	175	10.....80		200				200			4
2N 4134	Ns	N	S	30	30			200	200				200			350			3
2N 4135	Ns	N	S	30	30			200	200				200			425			3
2N 4137		N	S	40	40			360	200	40....120		10				500			5
2N 4138	Tx	N	S	30	30	15	100	300	200	50	5	1				20		9	5,9
2N 4140	Ns	N	S	60	30			300	125	120		150				250			3
2N 4141	Ns	N	S	60	30			300	125	300		150				250			3
2N 4142	Ns	P	S	60	40			300	125	120		150				200			3
2N 4143	Ns	P	S	60	40			300	125	300		150				200			3
2N 4150	So	N	S	100	80			5W		40....120		5A				15			2
2N 4207		P	S	6	6			300	200	50....120		10				650			5
2N 4208		P	S	12	12			300	200	30....120		10				700			5
2N 4209		P	S	15	15			300	200	50....120		10				850			5

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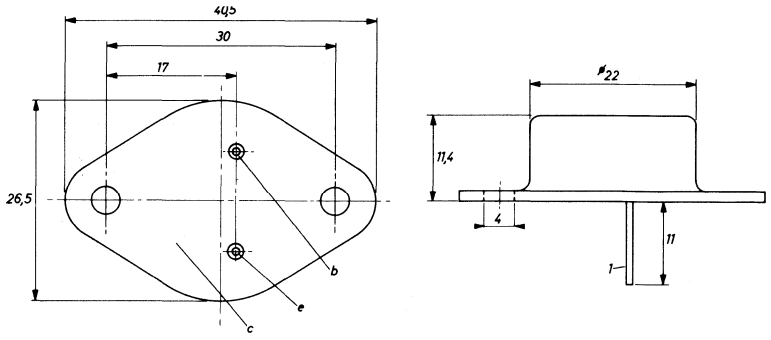

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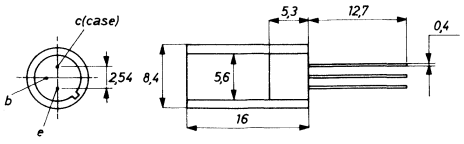

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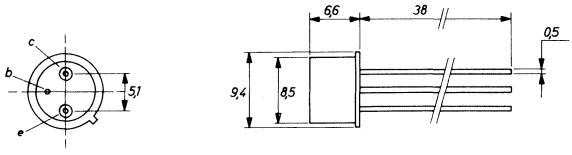

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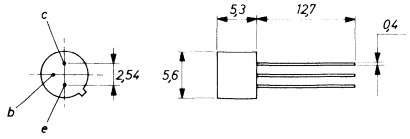

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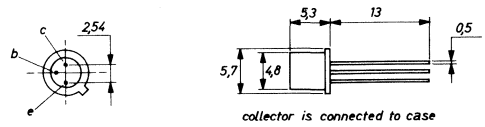

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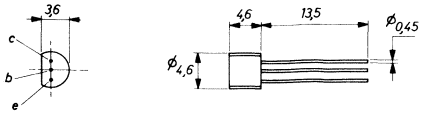
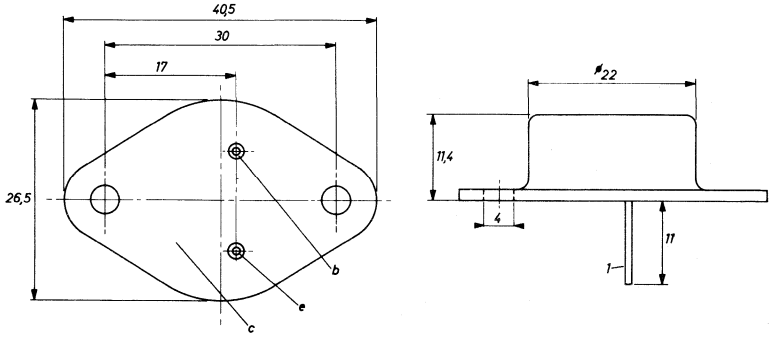


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 4210	So	N	S	80	60	10	25A	100W		20....100	6	10A				10		28	2
2N 4211	So	N	S	100	80	10	25A	100W		20....100	6	10A				20		28	2
2N 4225	So	N	S	80	40	6	2A	5W		40....150	5	1A				150		4	2
2N 4226	So	N	S	100	60	6	2A	5W		40....150	5	1A				150		4	2
2N 4227	Ns	N	S	60	30			300	125	150		150				250			5
2N 4228	Ns	P	S	60	40			300	125	150		150				200			3
2N 4231	Mo	N	S	50	40	5	3A	35W	200	25....100	2	1,5A	20	10	500	4		40	2,5
2N 4232	Mo	N	S	70	60	5	3A	35W	200	25....100	2	1,5A	20	10	500	4		40	2,5
2N 4233	Mo	N	S	90	80	5	3A	35W	200	25....100	2	1,5A	20	10	500	4		40	2,5
2N 4334	Mo	P	S	40	40	7	3A	6W	200	30....150	1	250	25	10	50	3		4	2,5
2N 4235	Mo	P	S	60	60	7	3A	6W	200	30....150	1	250	25	10	50	3		4	2,5
2N 4236	Mo	P	S	80	80	7	3A	6W	200	30....150	1	250	25	10	50	3		4	2,5
2N 4237	Mo	N	S	50	40	6	1A	6W	200	30....150	1	250	30	10	100	2		4	2,5
2N 4238	Mo	N	S	80	60	6	1A	6W	200	30....150	1	250	30	10	100	2		4	2,5
2N 4239	Mo	N	S	100	80	6	1A	6W	200	30....150	1	250	30	10	100	2		4	2,5
2N 4240	Rc	N	S	500	250	6	2A	35W		30....150	10	750				15		40	2
2N 4141		P	G	32	20			37W		60....300		300							1
2N 4242	So	P	G	80	70	40	5A	105W		40.....80	2	5A						3	2
2N 4243	So	P	G	60	55	30	5A	105W		40.....80	2	5A						3	2
2N 4244	So	P	G	40	40	20	5A	105W		40.....80	2	5A						3	2
2N 4245	So	P	G	80	70	40	5A	105W		60....120	2	5A						3	2
2N 4246	So	P	G	60	55	30	5A	105W		60....120	2	5A						3	2
2N 4247	So	P	G	40	40	20	5A	105W		60....120	2	5A						3	2
2N 4248		P	S	40	40			200	125				50			40			1
2N 4249		P	S	60	60			200	125				100			40			1
2N 4250		P	S	40	40			200	125				250			40			1
2N 4251		N	S	15	10			250	200	100		10				1300			5
2N 4252	Tx	N	S	30	18	4	50	200	175	50	10	2				600		30	3
2N 4253	Tx	N	S	30	18	4	50	200	175	30	10	2				600		30	3
2N 4254	Tx	N	S	30	18			200	175	50		2							1
2N 4255	Tx	N	S	30	18			200	175	30		2							1
2N 4256	Ge	N	S	30	30	5	100	360	125	100...500	4,5	2						98	1
2N 4257		P	S	6	6			200	125	30....120		10				500			5
2N 4258		P	S	12	12			200	125	30....120		10				700			5
2N 4259	Rc	N	S	40	30	2,5		175	175	60....250	8	2	70....280	8	2			36	3

3



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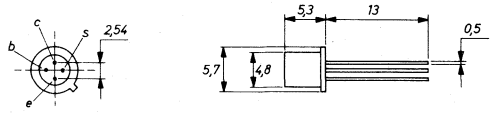

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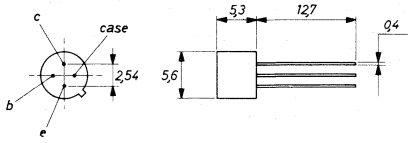

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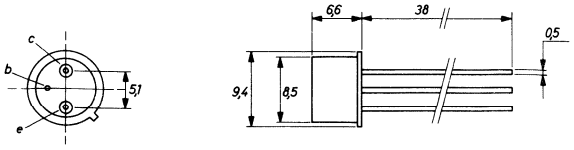

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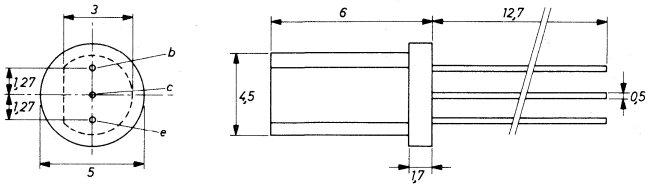

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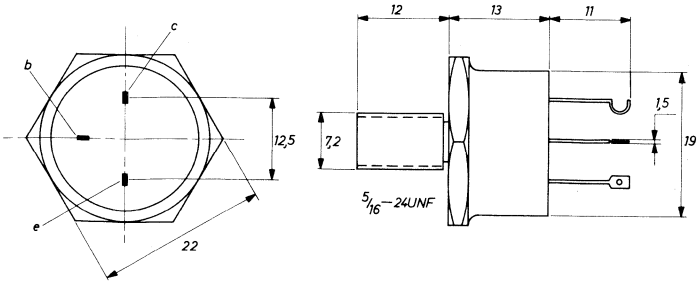

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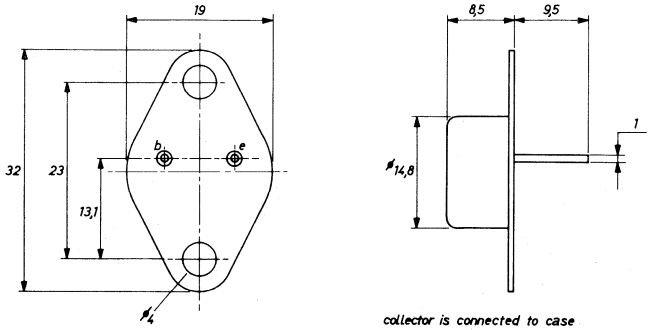

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 4260	Mo	P	S	15	15	4,5	30	200	200	30....150	1	10				1600		30	3
2N 4261	Mo	P	S	15	15	4,5	30	200	200	30....150	1	10				2000		30	3
2N 4262		N	S	25	10			1,5W		75		300				600			2
2N 4263		N	S	25	10			1,5W		75		300				800			2
2N 4264	Mo	N	S	30	15	6	200	310	135	40....160	1	10				300	357	90	5
2N 4265	Mo	N	S	30	12	6	200	310	135	100...400	1	10				300	357	90	5
2N 4269	Tr	N	S	200	140			360	200	200		10							1
2N 4270	Tr	N	S	200	140			580	200	200		10							1
2N 4271	Tr	N	S	175	140			5W		20....140		200				20			2
2N 4272	Tr	N	S	175	140			5W		20....140		1A				10			2
2N 4273	Tr	N	S	175	140			25W		20....140		1A				10			2
2N 4274	Ns	N	S	30	12			280	125	18		100				400			5
2N 4275	Ns	N	S	40	15			280	125	18		100				400			5
2N 4276	Mo	P	G	30	20	20	60A	170W	110	60....120	2	15A						3	2
2N 4277	Mo	P	G	30	20	20	60A	170W	110	80....180	2	15A						3	2
2N 4278	Mo	P	G	45	30	25	60A	170W	110	60....120	2	15A						3	2
2N 4279	Mo	P	G	45	30	25	60A	170W	110	80....180	2	15A						3	2
2N 4280	Mo	P	G	60	45	30	60A	170W	110	60....120	2	15A						3	2
2N 4281	Mo	P	G	60	45	30	60A	170W	110	80....180	2	15A						3	2
2N 4282	Mo	P	G	75	60	40	60A	170W	110	60....120	2	15A						3	2
2N 4283	Mo	P	G	75	60	40	60A	170W	110	80....180	2	15A						3	2
2N 4284	Ns	P	S	25	25			250	165	600		1							1
2N 4285	Ns	P	S	35	35			250	165	600		1							1
2N 4286	Ns	N	S	30	25			250	150				600			40			1
2N 4287	Ns	N	S	45	45			250	150				600			40			1
2N 4288	Ns	P	S	30	25			250	150				600			40			1
2N 4289	Ns	P	S	60	45			250	150				600			40			1
2N 4290	Ns	P	S	30	20			250	150				600			40			1
2N 4291	Ns	P	S	40	30			250	150				600			40			1
2N 4292	Ns	N	S	30	15			200	150	20		3				600			1
2N 4293	Ns	N	S	30	15			200	150				60			600			1
2N 4294	Ns	N	S	30	12			200	150	30....120		10				400			5
2N 4295	Ns	N	S	40	15			200	150	40....120		10				500			5
2N 4296	Rc	N	S	350	250	4	1A	20W		175...300	10	50	4	10	20	20	60	40	5
2N 4297	Rc	N	S	350	250	4	1A	20W		175...300	10	50	4	10	20	20	60	40	2

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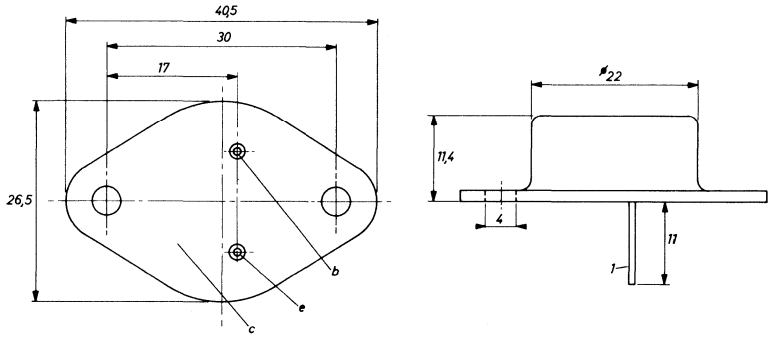

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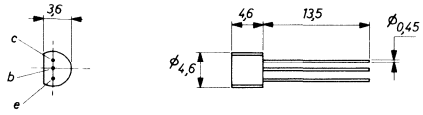

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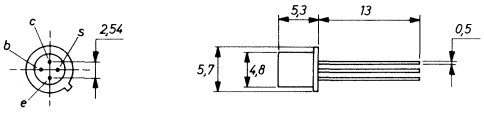

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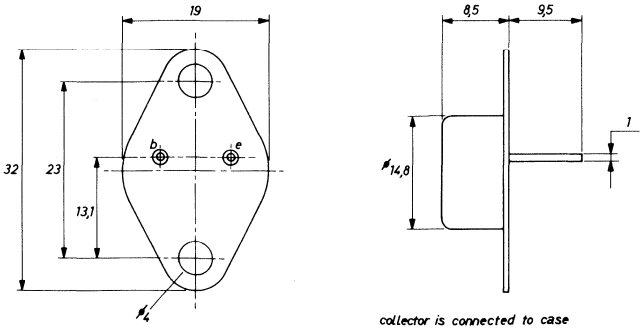
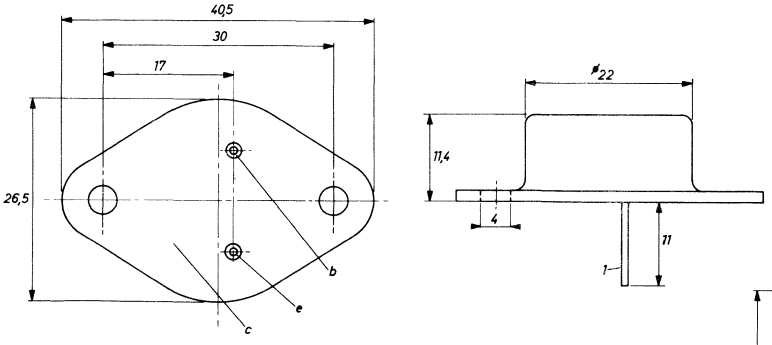


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
2N 4298	Rc	N	S	500	350	4	1A	20W	175	25.....75	10	50	4	10	20	20	60	40	2
2N 4299	Rc	N	S	500	350	4	1A	20W	175	50....150	10	50	4	10	20	20	60	40	2
2N 4300	Tx	N	S	100	80	8	2A	15W	200	30....120	2	1A	30	5	1A	30	175	4	2
2N 4301	Tx	N	S	100	80	8	10A	50W	200	30....120	4	5A	30	5	1A	40	50	27	2
2N 4305		N	S	120	80			1,5W		50....150		1A							2
2N 4306		N	S	120	80			4W		50....150		1A							2
2N 4307		N	S	100	60			1,5W		50....150		1A							2
2N 4308		N	S	100	60			4W		50....150		1A							2
2N 4309		N	S	120	80			1,5W		50....150		1A							2
2N 4310		N	S	120	80			4W		40....120		1A							2
2N 4311		N	S	100	60			1,5W		40....120		1A							2
2N 4312		N	S	100	60			4W		40....120		1A							2
2N 4313		P	S	12	12			200	125	30....120		30				700			5,9
2N 4314	Rc	P	S	90	65	7	1A	7W	200	50....250	10	150				200	165	4	2
2N 4346	Rc	P	G	320	60		10A	5W	83									3	7
2N 4327	Rc	N	S	140	120	7	5A	100W	20.....70		4	2A						3	2
2N 4348	Rc	N	S	140	120	7	10A	120W	200	15.....60	4	5A						3	2
2N 4350		N	S	65	40			7W		10....200		350				300			2
2N 4353	Ns	P	S	60	60			350	125	25		0,1				500			1
2N 4355	Ns	P	S	60	60			350	125	60		0,1				500			1
2N 4356	Ns	P	S	80	80			350	125	25		0,1				500			1
2N 4357		P	S	240	240			400	200	80....300		10	100			40			1
2N 4358		P	S	240	240			400	200	80....300		10	100			40			1
2N 4359		P	S	44	45			360	200	50....600		1	50						1
2N 4383	Sp	N	S	40	30			800	200				1000			120			3
2N 4384	Sp	N	S	40	30			500	200				1000			120			3
2N 4385	Sp	N	S	40	30			800	200				1000			120			3
2N 4386	Sp	N	S	40	30			500	200				1000			120			3
2N 4387	So	P	S	40	40	5	2A	20W	200	25....100	10	500						40	5
2N 4388	So	P	S	60	60	5	2A	20W	200	25....100	10	500						40	5
2N 4389		P	S	12	12			200	125	30....180		10	4						4
2N 4390	Rc	N	S	120	120	6		500	175	20	1	2	12,5	10	20	50		37	5
2N 4395	Rc	N	S	60	40			62W		50....170		2A				4			2
2N 4396	Rc	N	S	80	60			62W		40....170		2A				4			2
2N 4397	Rc	N	S	40	40			200		40....180		2	40			600			1
2N 4398	Tx	P	S	40	40	5	30A	200W	200	15.....60	4	15A	40	10	1A	4	35	3	2,5
2N 4399	Tx	P	S	60	60	5	30A	200W	200	15.....60	4	15A	40	10	1A	4	35	3	2,5
2N 4400	Mo	N	S	60	40	6	600	310	135	50....150	1	150	20....250	10	1	200	357	90	1,5
2N 4401	Mo	N	S	60	40	6	600	310	135	100...300	1	150	40....500	10	1	250	357	90	1,5
2N 4402	Mo	P	S	40	40	5	600	310	135	50....150	2	150	30....250	10	1	150	357	90	1,5

3



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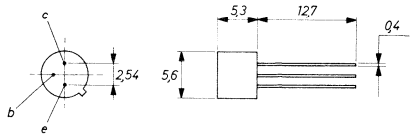

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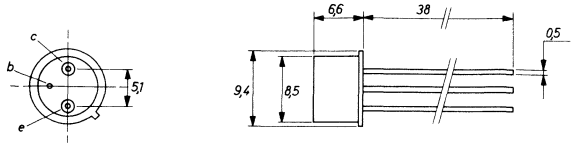

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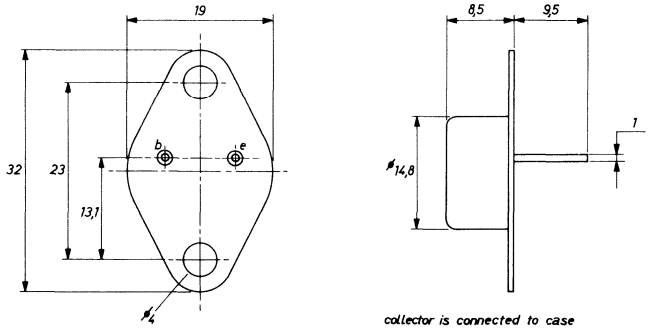

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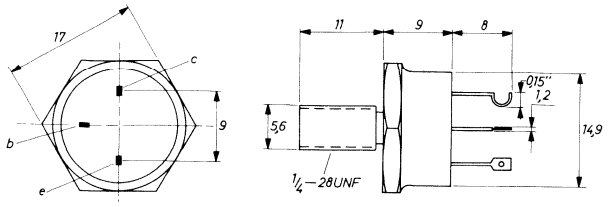

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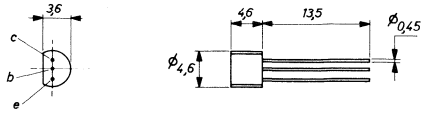
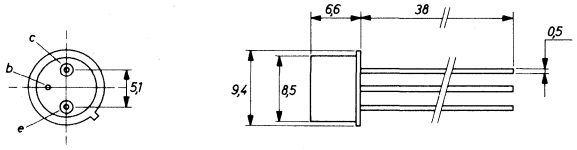


Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 4403	Mo	P	S	40	40	5	600	310	135	100...300	2	150	60.... 300	10	1	150	357	90	1,5
2N 4404	Mo	P	S	80	80	5	1A	7W	200	40....120	1	150				600	140	12	2,5
2N 4405	Mo	P	S	80	80	5	1A	7W	200	100...300	1	150				600	140	12	2,5
2N 4406	Mo	P	S	80	80	5	2A	9W	200	25....100	1	150				750	140	12	2,5
2N 4407	Mo	P	S	80	80	5	2A	9W	200	75....225	1	150				750	140	12	2,5
2N 4409	Mo	N	S	80	50	5	250	310	135	60....400	1	1				300	357	90	5
2N 4410	Mo	N	S	120	80	5	250	310	135	60....400	1	1				300	357	90	5
2N 4411		P	S	15	12			150	200	40		0,5				400			5
2N 4412	Sp	N	S	40	30			600	200				1000			100			3
2N 4412A	Sp	P	S	60	60			600	200				120			20			3
2N 4413	Sp	P	S	40	30			400	200				1000			100			3
2N 4413A	Sp	P	S	60	60			400	200				120			20			3
2N 4414	Sp	P	S	40	30			600	200				1000			100			3
2N 4414A	Sp	P	S	60	60			600	200				100			20			3
2N 4415	Sp	P	S	40	30			400	200				1000			100			3
2N 4415A	Sp	P	S	60	60			400	200				100			20			3
2N 4418		N	S	40	40			250	125	40....120		10				500			5
2N 4419		N	S	30	30			250	125	30		10				400			5
2N 4420		N	S	40	40			250	125	30....120		30				350			5
2N 4421		N	S	30	30			250	125	25		30				300			5
2N 4422		N	S	40	40			250	125	30....120		30				350			5
2N 4423		N	S	12	12			250	125	40....150		30				400			5
2N 4424	Ge	N	S	60	40	5	500	360	150	100...540	4,5	2	180	4,5	2			98	5
2N 4425	Ge	N	S	60	40	5	500	560	150	180...540	4,5	2	180	4,5	2			98	5
2N 4427	Mo	N	S	40	20	2	400	3,5W	200	10....200	5	100				500		12	3
2N 4428	Mo	N	S	55	35	3,5	425	3,5W	200	20....200	5	50				1000		12	3
2N 4429	Tx	N	S	55	35			5W		20....200		50				700			2
2N 4430	Tx	N	S	55	40			10W		20....200		100				600			2
2N 4431	Tx	N	S	55	40			18W		20....200		100				600			2
2N 4432		N	S	50	30			600		40....130		6	45						3
2N 4432A		N	S	50	30			600		80....150		6	90						3
2N 4436		N	S	60	30			200	125	40....120		150				250			4
2N 4437		N	S	60	30			200	125	100...300		150				250			4
2N 4438		N	S	300	300			1W	200	40....120		50				30			1
2N 4439		N	S	300	300			1W	200	100...240		50				30			1
2N 4440	Rc	N	S	65	40	4	1,5A	12W	200	10....200		125				500		40	2
2N 4449		N	S		40			300		40		10				500			5
2N 4450		N	S	60	30			3W	200	75		10				250			5
2N 4451		P	S		12			300		40		30				400			5
2N 4452		P	S	45	45			350	200	115...300		50	135			200			5
2N 4453		P	S		18			300		40		30				400			5
2N 4576		N	S	100	80			150W	299	50....150		1A	25						4
2N 4862	So	N	S	140	120	8	2A	4W	200	50....150	2	500	50			85	437	17	2
2N 4863	So	N	S	140	120	8	2A	4W	200	50....150	2	500	50			50	140	4	2
2N 4864	So	N	S	140	120	8	2A	17W	200	50....150	2	500	50			50	87	40	2

4



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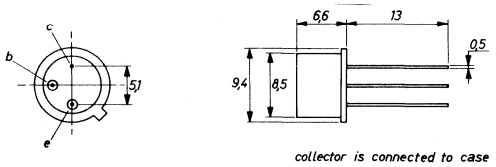

collector is connected to case

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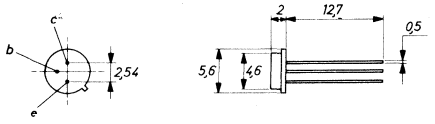

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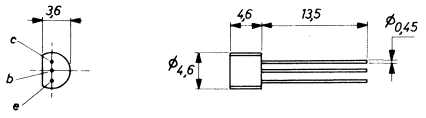

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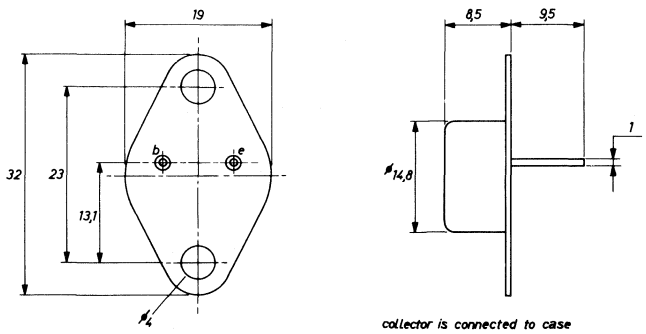
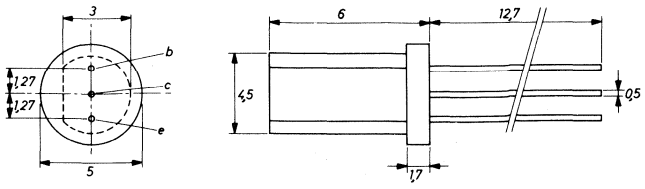


collector is connected to case

98



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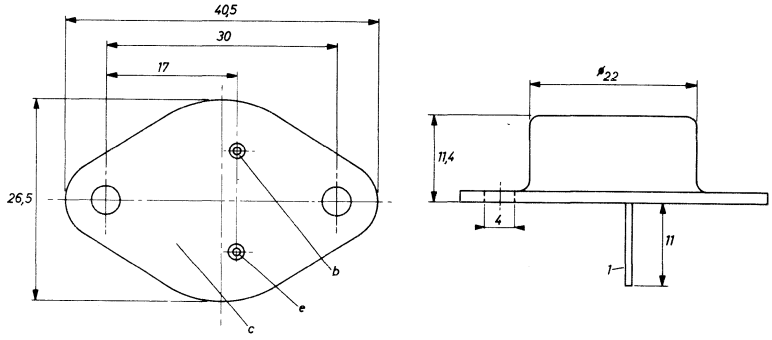
Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 4865	So	N	S	100	80	8	80A	350W	200	10.....40	5	70A				10		72	5
2N 4866	So	N	S	140	120	8	80A	350W	200	10.....40	5	70A				10		72	5
2N 4872		P	S	12	12			700	200	50....120		10	9						6
2N 4873		N	S	40	15			360	200	110...150		10	7						5
2N 4874	Tx	N	S	30	20	2	200	720	175				20....200	10	50	900		12	3
2N 4875	Tx	N	S	40	25	2	200	720	175				20....200	10	50	800		12	3
2N 4876	Tx	N	S	40	30	2	200	720	175				20....200	10	50	650		12	3
2N 4877		N	S		60			10W	200	20....100		4A				4			2
2N 4888		P	S	150	150			300	125	40....400		10				30			1
2N 4889		P	S	150	150			300	125	80....300		10				40			1
2N 4890	Mo	P	S	60	40	5	500	5W	200	50....250	10	150				280		12	2,5
2N 4895	So	N	S	120	60	6	10A	4W	200	100...300	2	2A	4					4	5
2N 4896	So	N	S	120	60	6	10A	4W	200	40....120	2	2A	2,5					4	5
2N 4897	So	N	S	150	80	6	10A	4W	200	40....120	2	2A	2,5					4	5
2N 4898	Mo	P	S	40	40	5	1A	25W	200	20....100	1	500	25	10	250	3		40	2,5
2N 4899	Mo	P	S	60	60	5	1A	25W	200	20....100	1	500	25	10	250	3		40	2,5
2N 4900	Mo	P	S	80	80	5	1A	25W	200	20....100	1	500	25	10	250	3		40	2,5
2N 4901	Tx	P	S	40	40	5	5A	87W	200	20.....80	2	1A	20	10	500			3	2,5
2N 4902	Tx	P	S	60	60	5	5A	87W	200	20.....80	2	1A	20	10	500			3	2,5
2N 4903	Tx	P	S	80	80	5	5A	87W	200	20.....80	2	1A	20	10	500			3	2,5
2N 4904	Tx	P	S	40	40	5	5A	87W	200	25....100	2	2,5A	40	10	500			3	2,5
2N 4905	Tx	P	S	60	60	5	5A	87W	200	25....100	2	2,5A	40	10	500			3	2,5
2N 4906	Tx	P	S	80	80	5	5A	87W	200	25....100	2	2,5A	40	10	500			3	2,5
2N 4907	So	P	S	40	40	5	5A	150W	200	20.....80	4	4A				4		3	2
2N 4908	So	P	S	60	60	5	5A	150W	200	20.....80	4	4A				4		3	2

3



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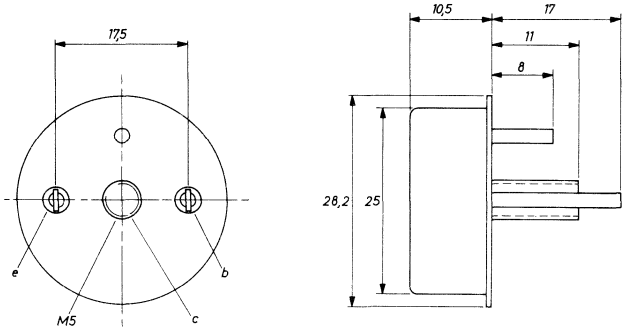

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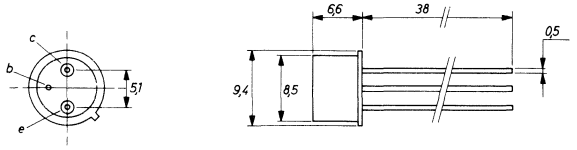

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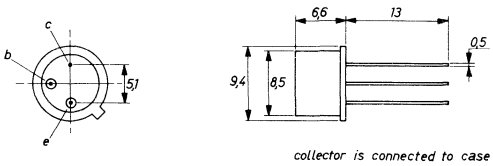

collector is connected to case

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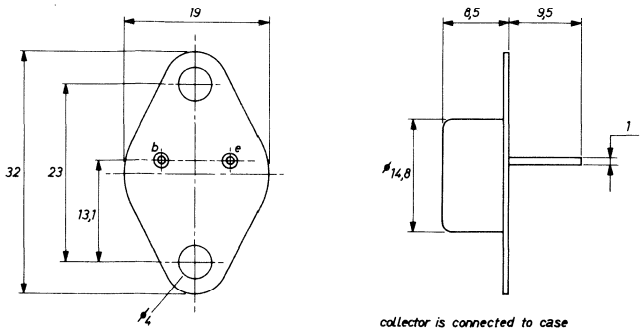

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	R_{thj-a} (°C/W)	Case	Use
2N 4909	So	P	S	80	80	5	5A	150W	200	20.....80	4	4A				4		3	2
2N 4910	Mo	N	S	40	40	5	1A	25W	200	20....100	1	500	25	10	250	3		40	5
2N 4911	Mo	N	S	60	60	5	1A	25W	200	20....100	2	500	25	10	250	3		40	5
2N 4912	Mo	N	S	80	80	5	1A	25W	200	20....100	1	500	25	10	250	3		40	5
2N 4913	Tx	N	S	40	40	5	5A	87W	200	25....100	2	2,5A	20	10	500			3	2,5
2N 4914	Tx	N	S	60	60	5	5A	87W	200	25....100	2	2,5A	20	10	500			3	2,5
2N 4915	Tx	N	S	80	80	5	5A	87W	200	25....100	2	2,5A	20	10	500			3	2,5
2N 4916	So	P	S	30	30			500	125	70....200		10				400			5
2N 4917	So	P	S	30	30			500	125	150...300		10				450			5
2N 4918	Mo	P	S	40	40	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4949	Mo	P	S	60	60	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4920	Mo	P	S	80	80	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4921	Mo	N	S	40	40	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4922	Mo	N	S	60	60	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4923	Mo	N	S	80	80	5	1A	30W	150	20....100	1	500	25	10	250	3		39	2,5
2N 4924	Mo	N	S	100	100	5	200	5E	175	40....200	10	150				500		12	3
2N 4925	Mo	N	S	150	150	5	200	5W	175	40....200	10	150				500		12	3
2N 4926	Mo	N	S	200	200	7	50	5W	175	20....200	10	30	25....250	10	10	300		12	3
2N 4927	Mo	N	S	250	250	7	50	5W	175	20....200	10	30	25....250	10	10	300		12	3
2N 4928	Mo	P	S	100	100	4	100	3W	200	20....200	10	10				1000		12	3
2N 4929	Mo	P	S	150	150	4	500	5W	200	20....200	10	10				1000		12	3
2N 4930	Mo	P	S	200	200	4	500	5W	200	20....200	10	10				200		12	3
2N 4931	Mo	P	S	250	250	4	500	5W	200	20....200	10	10				200		12	3
2N 4932	Rc	N	S	50	250	4	500	5W		10....100	10	1A				100		26	2
2N 4933	Rc	N	S	70	35	4	3,3A	70W	200	10....100		1A				100		26	2
2N 4934	Rc	N	S	40	30	3		200	200	40....170	8	2	45....195	8	2	700		114	3
2N 4935	Rc	N	S	50	40	3		200	200	60....200	8	2	70....225	8	2	700		114	3
2N 4936	Rc	N	S	50	40	3		200	200	60....250	8	2	70....280	8	2	700		114	3
2N 4943	Ns	N	S	120	80			800		100...300		150				45			2
2N 4944		N	S	80	40			600	125	40....100		150				60			1
2N 4945		N	S	80	60			600	125	40....100		150				60			1
2N 4946		N	S	80	40			600	125	100...300		150				60			1
2N 4950		N	S	80	60			300W		10		50A				0,1			5
2N 4951	Sp	N	S	60	30			360	150	60....200		150				250			1
2N 4952	Sp	N	S	60	30			360	150	100...300		150				250			1
2N 4953	Sp	N	S	60	30			360	150	200...600		150				250			1
2N 4954	Sp	N	S	40	30			360	150	60....600		150				250			1
2N 4947	Mo	P	S	30	30	3	30	200	200	20	10	2				1600		30	3

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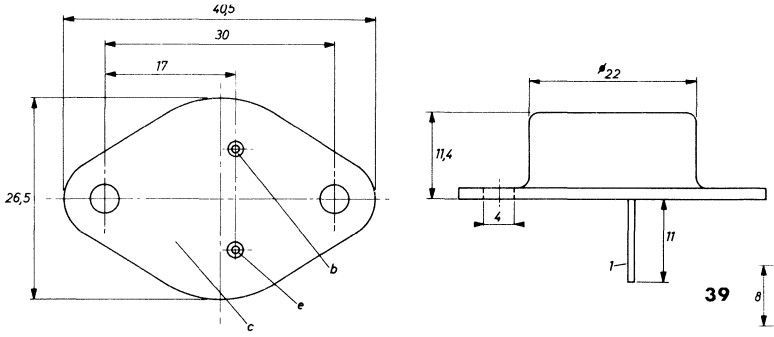

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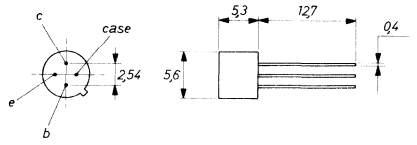

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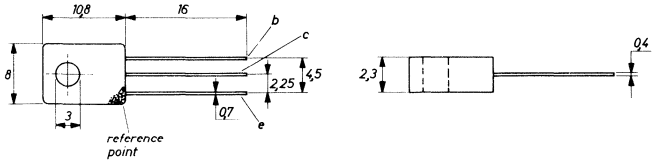

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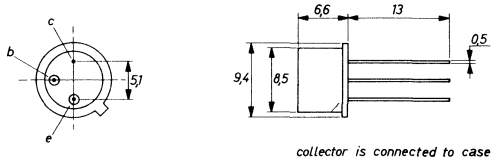

collector is connected to case

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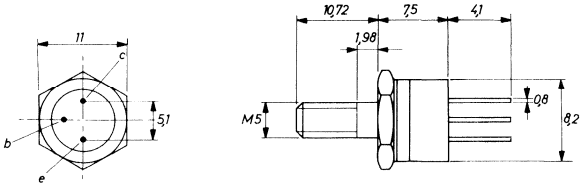

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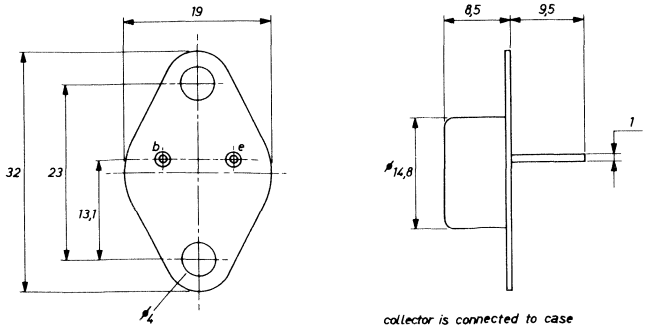

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 4953	Sp	N	S	60	30			360	150	200...600		150				250			1
2N 4954	Sp	N	S	40	30			360	150	60....600		150				250			1
2N 4957	Mo	P	S	30	30	3	30	200	200	20	10	2				1600		30	3
2N 4958	Mo	P	S	30	30	3	30	200	200	20	10	2				1500		30	3
2N 4959	Mo	P	S	30	30	3	30	200	200	20	10	2				1500		30	3
2N 4960		N	S	60	60			800	200	100...300		150				250			1
2N 4961		N	S	80	80			500	200	100...300		150				250			1
2N 4962		N	S	60	60			800	200	100...300		150				250			1
2N 4963		N	S	80	80			500	200	100...300		150				250			1
2N 4964		P	S	50	40			200		30....120			40						1
2N 4965		P	S	50	40			200		80....400			100						1
2N 4966	Ns	N	S	50	40			200		40....200			40						1
2N 4967	Ns	N	S	50	40			200		100...600			100						1
2N 4958	Ns	N	S	30	25			200		40....200			40						1
2N 4969	Ns	N	S	50	30			200		40....120		150							5
2N 4970	Ns	N	S	50	30			200		100...350		150							5
2N 4971	Ns	P	S	50	40			200		40....120		150							5
2N 4972	Ns	P	S	50	40			200		100...300		150							5
2N 4973		P	S	20	15			200		20		3							3
2N 4976		N	S	55	30			5W		20....250		50				1000			4
2N 4980		P	S	30	30			400		60....300		1				10			5,9
2N 4981		P	S	50	50			400		40....200		1				5			5,9
2N 4982		P	S	70	70			400		30....150		1				3			5,9
2N 4994	Tx	N	S	60	45	4	30	360	200	40....160	10	10	42	10	10			69	3
2N 4995	Tx	N	S	60	45	4	30	360	200	100...400	10	10	45	10	10			69	3
2N 4996	Tx	N	S	30	18	3	50	250	200	50	10	2						69	3
2N 4997	Tx	N	S	30	18	4	50	250	200	30....150	10	2						69	3
2N 4998	Tx	N	S	100	80	6	2A	35W	200	30.....90	5	1A	20	5	100	50	87	73	2
2N 4999	Tx	P	S	100	80	6	2A	35W	200	30.....90	5	1A	20	5	100	50	87	73	2
2N 5000	Tx	N	S	100	80	6	2A	35W	200	70....200	5	1A	50	5	100	60	87	73	2
2N 5031	Mo	N	S	15	10	3	20	200	200	25....300	6	1				3500		30	3
2N 5032	Mo	N	S	15	10	3	20	200	200	25....300	6	1				3500		30	3
2N 5036	Rc	N	S	70	50	5	8A	83W	150	20.....70	4	3A				2,8		52	2,5
2N 5038	Rc	N	S	150	90	7	20A	140W	200	50....200	5	2A				60		3	2,5
2N 5039	Rc	N	S	120	75	7	20A	140W	200	30....150	5	2A				60		3	2,5

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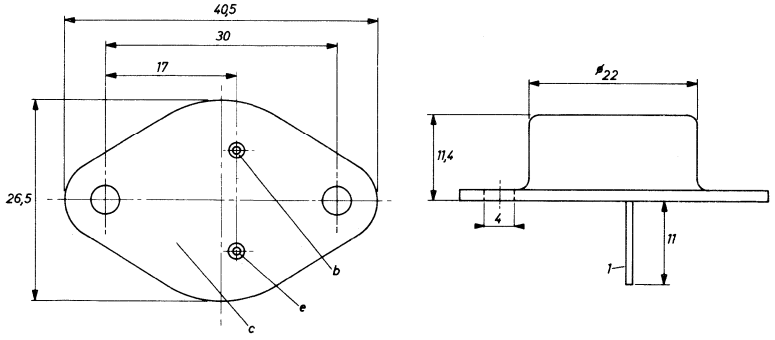

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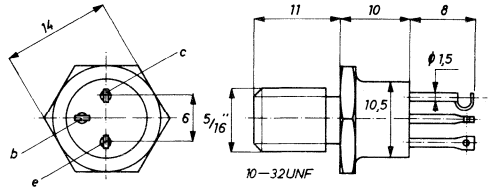

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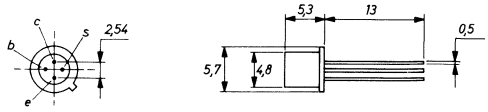

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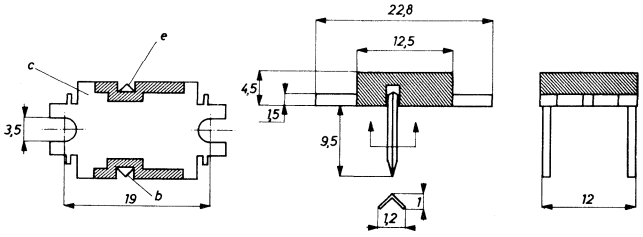

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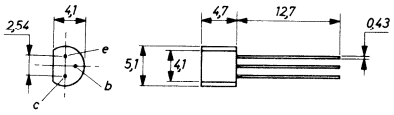

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 5050	Mo	N	S	125	125	6	2A	40W	175	25. . . . 100	5	750	25	10	250	10		40	2,5
2N 5051	Mo	N	S	150	150	6	2A	40W	175	25. . . . 100	5	750	25	10	250	10		40	2,5
2N 2052	Mo	N	S	200	200	6	2A	40W	175	25. . . . 100	5	750	25	10	250	10		40	2,5
2N 5067	Tx	N	S	40	40	5	5A	87W	200	20. 80	2	1A	20	10	500			3	2,5
2N 5068	Tx	N	S	60	60	5	5A	87W	200	20. 80	2	1A	20	10	500			3	2,5
2N 5069	Tx	N	S	80	80	5	5A	87W	200	20. 80	2	1A	20	10	500			3	2,5
2N 5071	Rc	N	S		65	4	3A	70W	200							76		26	4
2N 5086	Mo	P	S	50	50	3	50	310	135	150. . . 500	5	0,1	150. . . 600	5	1	120	357	90	1
2N 5087	Mo	P	S	50	50	3	50	310	135	250. . . 800	5	0,1	250. . . 900	5	1	150	357	90	1
2N 5088	Mo	N	S	35	30	4,5	50	310	135	300. . . 900	5	0,1	350. . 1400	5	1	175	357	90	1
2N 5089	Mo	N	S	35	30	4,5	50	310	135	400. . 1200	5	0,1	450. . . 1800	5	1	175	357	90	1
2N 5090	Mo	N	S	55	30	3,5	400	5W	200	10. . . . 200	5	50				500		26	4
2N 5108	Mo	N	S	55	30	3	400	3,5W	200							1200		12	4
2N 5157	Tx	N	S		500	6	3,5A	4W	150	30. 90	5	1A					32	3	2
2N 5160	Mo	P	S	60	40	4	400	5W	200	10	5	50				900		12	3
2N 5161	Mo	P	S	60	40	4	1,5A	20W	200	10	5	250				500		26	4
2N 5162	Mo	P	S	60	40	4	5A	50W	200	10	5	2A				500		26	4
2N 5172	Ge	N	S	25	25	5	100	360	125	100. . . 500	10	10	100. . . 750	10	10	200		98	1
2N 5174	Ge	N	S	90	75	5	25	360	125	40. . . . 600	5	10	40. . . . 900	5	10			98	1
2N 5175	Ge	N	S	130	100	5	25	200	125	55. . . . 160	5	10	55. . . . 240	5	10			98	1
2N 5176	Ge	N	S	130	100	5	25	200	125	140. . . 300	5	10	140. . . 450	5	10			98	1
2N 5179	Rc	N	S	20	12	2,5	50	300	175	25. . . . 250	1	3				500		30	3
2N 5180	Rc	N	S	30	15	2		180	175	20. . . . 200	8	2						30	3
2N 5183	Rc	N	S	18	18	7	1A	500	175	75. . . . 400	10	10				200		37	3
2N 5190	Mo	N	S	40	40		4A	40W	150	25. . . . 100	2	1,5A				2		39	2

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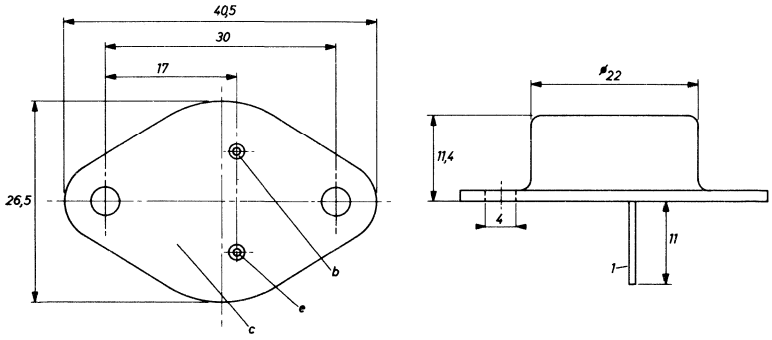

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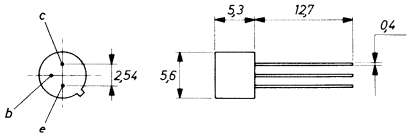

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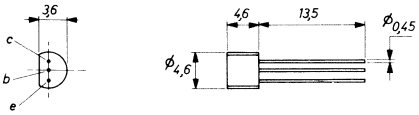

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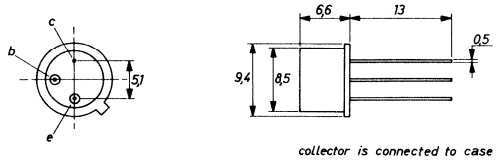

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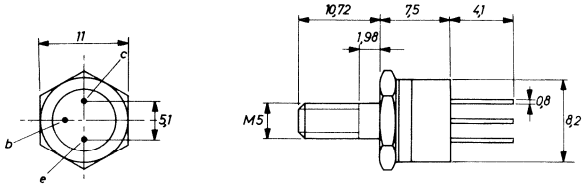

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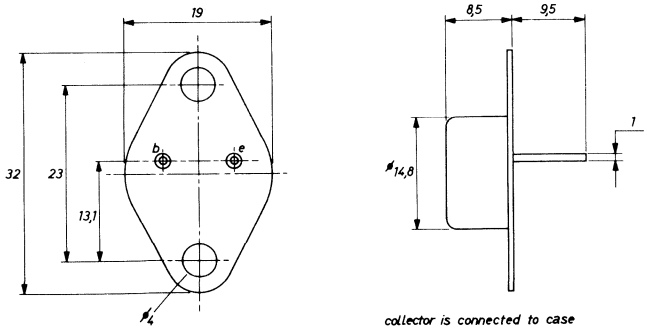

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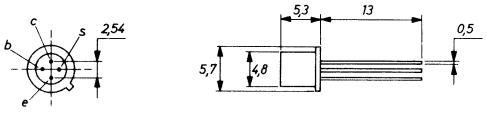

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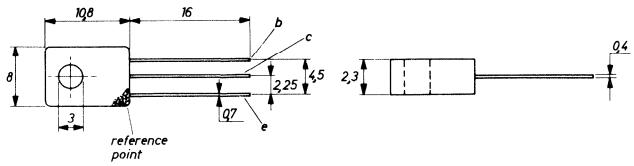

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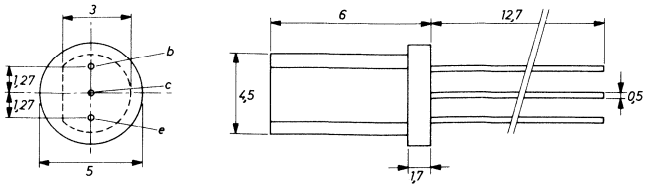

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Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2N 5191	Mo	N	S	60	60		4A	40W	150	25....100	2	1,5A				2		39	2
2N 5191	Mo	N	S	80	80		4A	40W	150	20.....80	2	1,5A				2		39	2
2N 5193	Mo	P	S	40	40		4A	40W	150	25....100	2	1,5A				2		39	2
2N 5194	Mo	P	S	60	60		4A	40W	150	25....100	2	1,5A				2		39	2
2N 5195	Mo	P	S	80	80		4A	40W	150	20.....80	2	1,5A				2		39	2
2N 5208	Mo	P	S	30	25	3	50	310	135	20....120	10	2				1200	357	60	3
2N 5232	Ge	N	S	70	50	5	100	360	125	250...500	5	2	250...750	5	2			98	1
2N 5249	Ge	N	S	70	50	5	100	360	125	400...800	5	2	400..1200	5	2			98	1
2N 5262	Rc	N	S	75	50	5	2A	5W	200	40	5	500	2,5	10	50			12	5
2N 5284	So	N	S	120	80	6	10A	30W	200	30.....90	5	2,5A	20			60		38	2
2N 5285	So	N	S	120	80	6	10A	30W	200	70....200	5	2,5A	50			70		38	2
2N 5301	Tx	N	S	40	40	5	30A	200W	200	15.....60	2	15A	40	10	1A		35	3	2,5
2N 5302	Tx	N	S	60	60	5	30A	200W	200	15.....60	2	15A	40	10	1A		35	3	2,5
2N 5303	Tx	N	S	80	80	5	30A	200W	200	15.....60	2	10A	40	10	1A		35	3	2,5
2N 5309	Ge	N	S	70	50	5	100	360	125	60....120	5		66	10				98	1
2N 5310	Ge	N	S	70	50	5	100	360	125	100...300	5		110	10				98	1
2N 5320	Rc	N	S	100	75	7	2A	10W	200	30....130	4	500					150	4	2
2N 5321	Rc	N	S	75	50	5	2A	10W	200	40....250	4	500				50	150	4	2
2N 5322	Rc	P	S	100	75	7	2A	10W	200	30....130	4	500				50	150	4	2
2N 5323	Rc	P	S	75	50	5	2A	10W	200	40....250	4	500				50	150	4	2
2N 5324	Mo	P	G	250	150	4	10A	56W	110	20....60	2	5A				2		3	2
2N 5325	Mo	P	G	325	200	4	10A	56W	110	20....60	2	5A				2		3	2
2N 5332	Mo	P	S	20	12	2	100	360	200	20.....80	1	10				800		17	3
2N 5334	Mo	N	S	60	60	8	3A	6W	200	30....150	2	1A				40		12	2
2N 5335	Mo	N	S	80	80	8	3A	6W	200	30....150	2	1A				40		12	2
2N 5365	Ge	P	S	40	40	4	300	360	125	40....120	1	50	32....180	10	2	250		98	1
2N 5375	Ge	P	S	40	30	5	500	360	150	40....400	10	150						69	1
2SA 49	To	P	G	18		12	5	60	75				30....200	6	1			1	1
2SA 52	To	P	G	18		12	5	60	75				25....170	6	1			1	1
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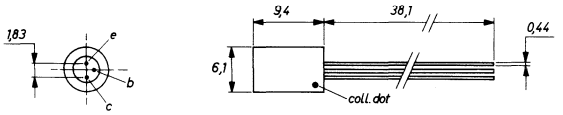

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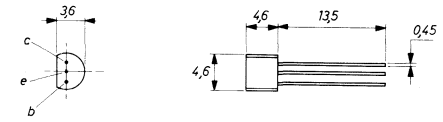

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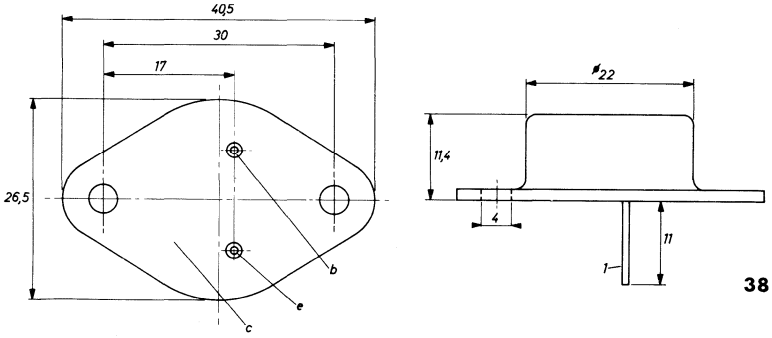

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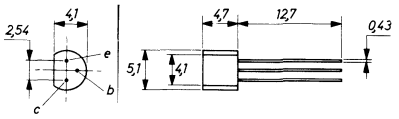

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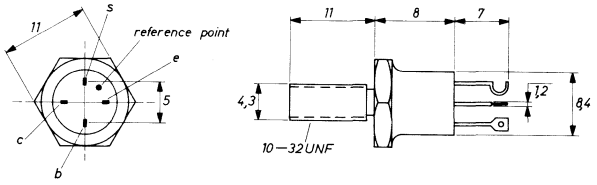

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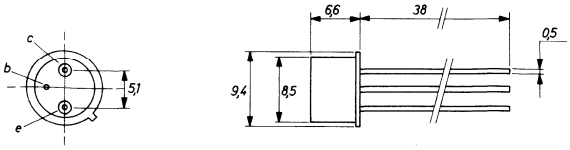

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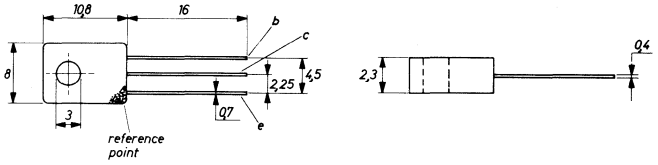

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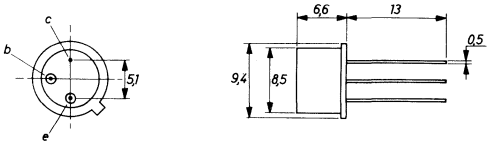

collector is connected to case

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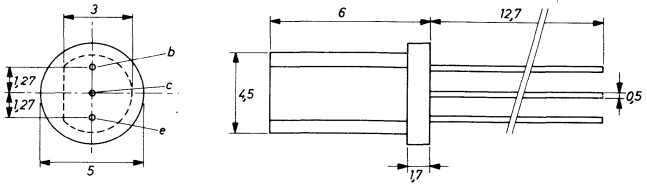

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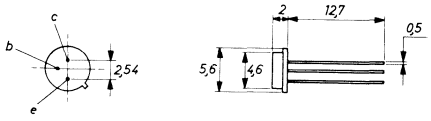

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2SA 429 red	To	P	S	150	150	5	30	150	125	40.....80	3	15				50		98	5
2SA 429 orn	To	P	S	150	150	5	30	150	125	70....140	3	15				50		98	5
2SA 429 yel	To	P	S	150	150	5	30	150	125	120...240	3	15				50		98	5
2SA 467 red	To	P	S	40	30	5	400	300	125	40.....80	1	100				100		98	3
2SA 467 orn	To	P	S	40	30	5	400	300	125	70....140	1	100				100		98	3
2SA 467 yel	To	P	S	40	30	5	400	300	125	120...240	1	100				100		98	3
2SA 473	Ro	P	S		30	5	3A	10W	150	40....400	1	500				200		55	2
2SA 483	To	P	S		150	5	1,5A	20W	150	30....250	10	100				10		40	2
2SA 484	To	P	S		110	5	1,5A	800	150	30....300	2	200				20		12	2
2SA 485	To	P	S		80	5	1,5A	800	150	30....300	2	200				20		12	2
2SA 486	To	P	S		50	5	1,5A	800	150	30....300	2	200				20		12	2
2SA 489	To	P	S		60	5	4A	30W	150	40....240	5	500				3		55	2
2SA 493	To	P	S		50	5	50	200	125	70....400	6	2						98	1
2SA 494 orn	To	P	S		30	5	30	200	125	70....140	6	0,1				100		98	1
2SA 494 yel	To	P	S		30	5	30	200	125	120...240	6	0,1				100		98	1
2SA 494 grn	To	P	S		30	5	30	200	125	200...400	6	0,1				100		98	1
2SA 494G red	To	P	S	35	30	5	80	200	125	40.....80	6	0,1				100		98	1
2SA 494G orn	To	P	S	35	30	5	80	200	125	70....140	6	0,1				100		98	1
2SA 494G yel	To	P	S	35	30	5	80	200	125	120...240	6	0,1				100		98	1
2SA 494G grn	To	P	S	35	30	5	80	200	125	200...400	6	0,1				100		98	1
2SA 495 red	To	P	S		30	5	100	200	125	40.....80	1	10				200		98	3
2SA 495 orn	To	P	S		30	5	100	200	125	70....140	1	10				200		98	3
2SA 495 yel	To	P	S		30	5	100	200	125	120...240	1	10				200		98	3
2SA 495 red	To	P	S	35	30	5	100	200	125	40.....80	1	10				200		98	3
2SA 495G orn	To	P	S	35	30	5	100	200	125	70....140	1	10				200		98	3
2SA 495G yel	To	P	S	35	30	5	100	200	125	120...240	1	10				200		98	3
2SA 495G grn	To	P	S	35	30	5	100	200	125	200...400	1	10				200		98	3
2SA 496 red	To	P	S		30	5	800	550	125	40.....80	2	50				100		39	3
2SA 496 orn	To	P	S		30	5	800	500	125	70....140	2	50				100		39	3
2SA 496 yel	To	P	S		30	5	800	550	125	120...240	2	50				100		39	3
2SA 497 red	To	P	S		80	5	800	600	150	40.....80	2	200				70		12	1
2SA 497 orn	To	P	S		80	5	800	600	150	70....140	2	200				70		12	1
2SA 497 yel	To	P	S		80	5	800	600	150	120...240	2	200				70		12	1
2SA 498 red	To	P	S		50	5	800	600	150	40.....80	2	200				70		12	1
2SA 498 orn	To	P	S		50	5	800	600	150	70....140	2	200				70		12	1
2SA 498 yel	To	P	S		50	5	800	600	150	120...240	2	200				70		12	1
2SA 499 red	To	P	S	50	40	5	100	250	175	30.....70	1	10				100		9	3,5
2SA 499 orn	To	P	S	50	40	5	100	250	175	60....120	1	10				100		9	3,5
2SA 499 yel	To	P	S	50	40	5	100	250	175	100...200	1	10				100		9	3,5
2SA 500 red	To	P	S	30	20	5	100	250	175	30.....70	1	10				100		9	3,5

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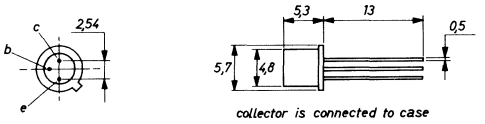

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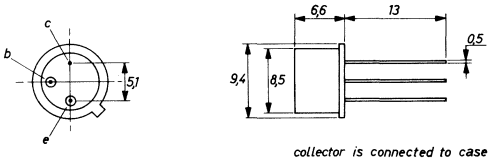

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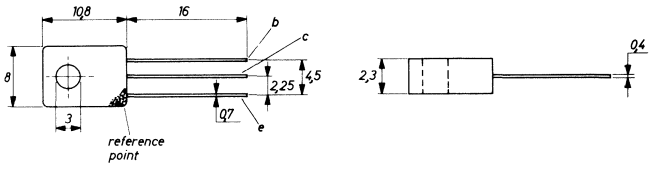

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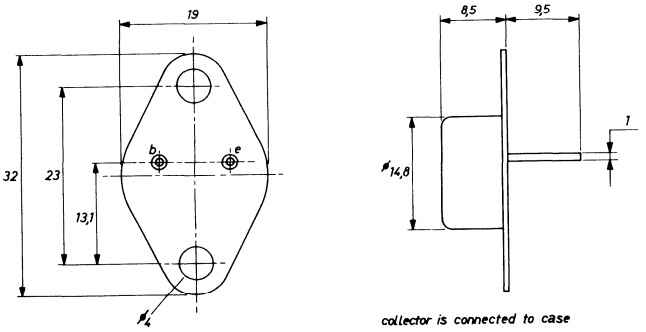

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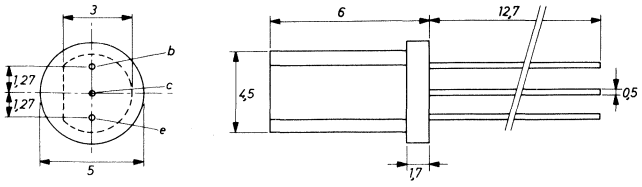

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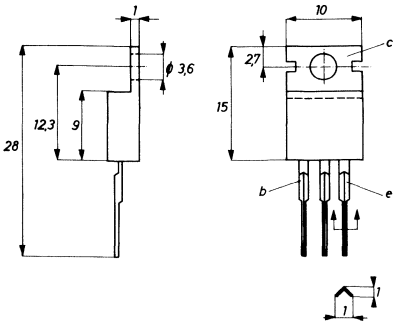

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS								Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)		
2SA 500 red	To	P	S	30	20	5	100	250	175	30.....70	1	10				100		9	3,5
2SA 500 orn	To	P	S	30	20	5	100	250	175	60....120	1	10				100		9	3,5
2SA 500 yel	To	P	S	30	20	5	100	250	175	100...200	1	10				100		9	3,5
2SA 502 red	To	P	S	90	80	5	100	300	125	40.....80	1	20				50		98	5
2SA 502 orn	To	P	S	90	80	5	100	300	125	70....140	1	20				50		98	5
2SA 502 yel	To	P	S	90	80	5	100	300	125	120...240	1	20				50		98	5
2SA 503 orn	To	P	S	60	50	5	600	800	175	30.....90	2	150				50		12	3,5
2SA 503 yel	To	P	S	60	50	5	600	800	175	50....150	2	150				50		12	3,5
2SA 503 grn	To	P	S	60	50	5	600	800	175	100...300	2	150				50		12	3,5
2SA 504 orn	To	P	S	40	30	5	600	800	175	30.....90	2	150				50		12	3,5
2SA 504 yel	To	P	S	40	30	5	600	800	175	50....150	2	150				50		12	3,5
2SA 504 grn	To	P	S	40	30	5	600	800	175	100...300	2	150				50		12	3,5
2SA 505 red	To	P	S		50	5	800	550	125	40.....80	2	50				100		39	1
2SA 505 orn	To	P	S		50	5	800	550	125	70....140	2	50				100		39	1
2SA 505 yel	To	P	S	50	50	5	800	550	125	120...240	2	50				100		39	1
2SA 509 orn	To	P	S		30	5	500	600	150	70....140	2	50				140			1
2SA 509 yel	To	P	S		30	5	500	600	150	120...240	2	50				140			1
2SA 510 red	To	P	S	120	100	5	1,5A	800	175	30.....90	2	200				20		12	3,5
2SA 510 orn	To	P	S	120	100	5	1,5A	800	175	50....150	2	200				20		12	3,5
2SA 511 red	To	P	S	100	80	5	1,5A	800	175	30.....90	2	200				20		12	3,5
2SA 511 orn	To	P	S	100	80	5	1,5A	800	175	50....150	2	200				20		12	3,5
2SA 512 red	To	P	S	80	60	5	1,5A	800	175	30.....90	2	200				20		12	3,4
2SA 612 orn	To	P	S	80	60	5	1,5A	800	175	50....150	2	200				20		12	3,5
2SA 513 red	To	P	S	60	40	5	1,5A	800	175	30.....90	2	200				20		12	3,5
2SA 513 orn	To	P	S	60	40	5	1,5A	800	175	50....150	2	200				20		12	3,5
2SA 561 red	To	P	S		50	5	150	300	125	40.....80	1	20						98	5
2SA 561 orn	To	P	S		60	5	150	300	125	70....140	1	20						98	5
2SA 561 yel	To	P	S		50	5	150	300	125	120...240	1	20						98	5
2SA 561 grn	To	P	S		50	5	150	300	125	200...400	1	20						98	5
2SA 562 red	To	P	S		30	5	400	300	125	40.....80	1	100						98	1
2SA 562 orn	To	P	S		30	5	400	300	125	70....140	1	100						98	1
2SA 562 yel	To	P	S		30	5	400	300	125	120...240	1	100						98	1
2SA 562 grn	To	P	S		30	5	400	300	125	200...400	1	100						98	1
2SA 594 red	To	P	S	60	45	5	200	750	175	40.....80	1	10				100		4	3,5
2SA 656	To	P	S	130	110	5		50W	150	30....300	5	1A				5		3	2,5
2SA 657	To	P	S	100	80	5		50W	150	30....300	5	1A				5		3	2,5
2SA 658	To	P	S	60	50	5		50W	150	30....300	5	1A				5		3	2,5
2SA 661	To	P	S		50	5	200	600	150	40....400	1	50				100			5
2SB 54	To	P	G	30		12	150	750	75				80....300	6	1	1		1	1
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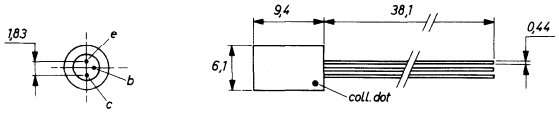

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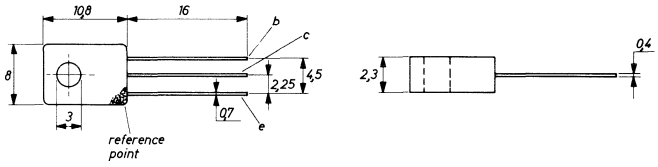

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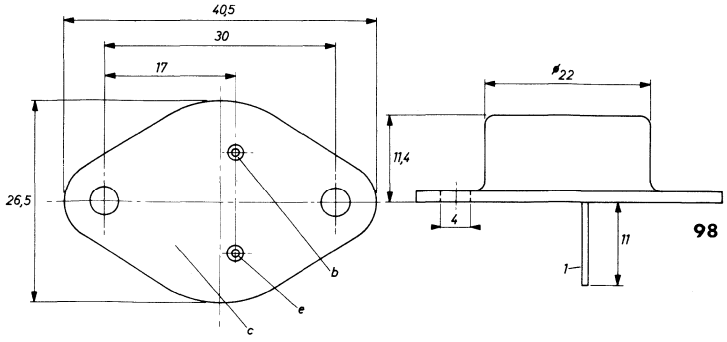

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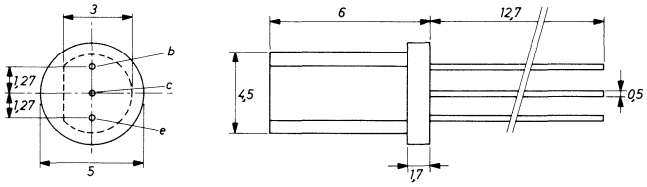

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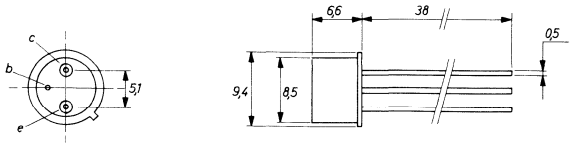

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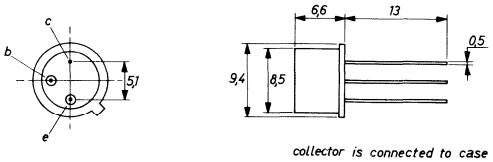

collector is connected to case

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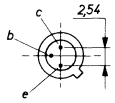

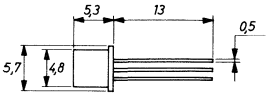

collector is connected to case

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2SB 364	To	P	G	20		12	400	150	75	60....150		100						1	1
2SB 365	To	P	G	20		12	400	150	75	35.....90		100						1	1
2SB 415	To	P	G	32		6	1A	200	85	40....180		300						1	1
2SB 434	To	P	S		50	5	3A	25W	150	40....240	5					3			2
2SB 435	To	P	S		35	5	3A	25W	150	40....240	5					3			2
2SB 440	To	P	G	30		12	150	150	75				70....270	6	1			1	1
2SB 463	To	P	G	32		12	2A	6W	85	30....250	1	500						40	2
2SB 502	To	P	S	110	80	8	3A	20W	150	30....280	5	500				1		40	2
2SB 503	To	P	S	70	50	8	3A	20W	150	30....280	5	500				1		40	2
2SC 105	To	N	S	30	20	5	80	250	175	20	1					100		9	3
2SC 108A	To	N	S	90	70	6	800	800	175	40....240	2	200				100		12	3
2SC 109A	To	N	S	70	50	5	800	800	175	40....240	2	200				100		12	3
2SC 199	To	N	S	80	45	15	50	600	150	12....200	3	3				50		4	3
2SC 366G	To	N	S	60	40	5	400	300	125	40....240	1	100				100		98	3
2SC 367G	To	N	S	40	20	5	400	300	125	40....240	1	100				100		98	3
2SC 368 grn	To	N	S	40	30	5	100	250	175	200...400	10					100		9	3
2SC 368 blu	To	N	S	40	30	5	100	250	175	350...800	10					100		9	3
2SC 368 whi	To	N	S	40	30	5	100	250	175	600..1200	10					100		9	3
2SC 369G	To	N	S	40	30	5	100	200	125	200..1200	10	1				50		98	3
2SC 370	To	N	S		30	4	100	200	125	25.....50	12	2				80		98	3
2SC 371 red	To	N	S		30	4	100	200	125	40.....80	12	2				80		98	3
2SC 371 orn	To	N	S		30	4	100	200	125	70....140	12	2				80		98	3
2SC 371G	To	N	S	35	30	5	100	200	125	40....140	1	10				80		98	3
2SC 372	To	N	S		30	4	100	200	125	70....240	12	2				80		98	3
2SC 380A	To	N	S		30	4	30	200	125	40....240	12	2				100		98	3
2SC 381	To	N	S		30	4	20	100	125	25....140	6	1				250		98	3
2SC 382	To	N	S	40		2	50	200	125	30	10	4				400		98	3
2SC 383	To	N	S		40	3	50	300	125	20....100	2,5					300		98	3
2SC 387A	To	N	S	30	15	3	50	200	125	20	3	8				650		98	3
2SC 390	To	N	S	30	20	3	20	150	150	40....200	10	2				600		30	3
2SC 392A	To	N	S	30	20	3	20	100	150	40....300	10	2				800		30	3
2SC 359A	To	N	S	20	12	5	500	300	175	30....200	1	10				200		9	3,5
2SC 397	To	N	S	20	12	2	50	200	175	20	3	8				600		30	3
2SC 400	To	N	S	30	20	5	100	250	175	30....250	1	10				100		9	3
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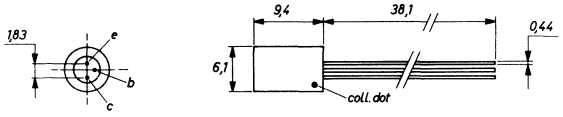

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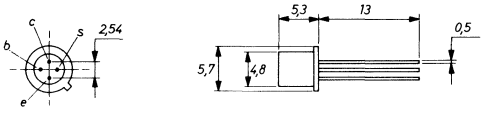

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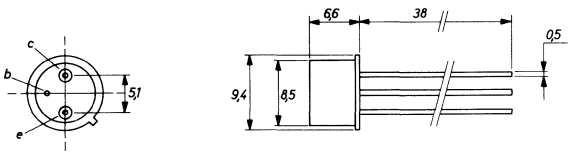

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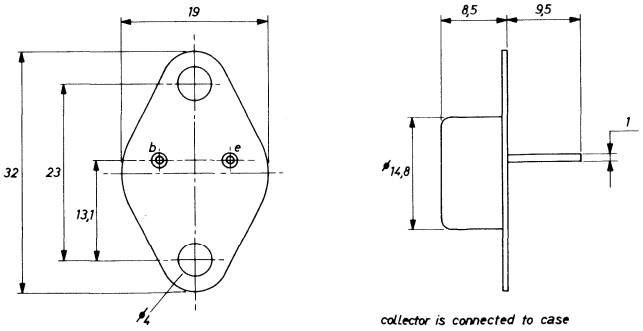

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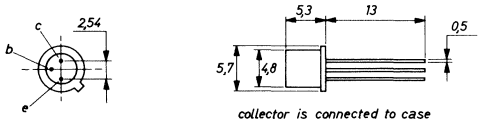

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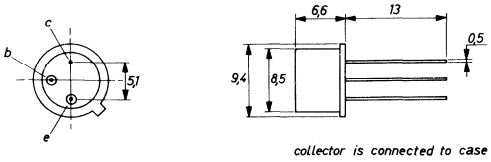

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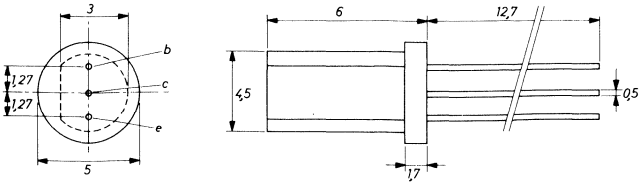

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
2SC 495	To	N	S		80	5	1,5A	800	150	30....300	2	200						12	3
2SC 496	To	N	S		30	5	800	550	125	40....240	2	50				50		39	3
2SC 503	To	N	S	60	50	5	600	800	175	30....300	2	150				50		12	3
2SC 505	To	N	S	300	300	3	100	600	175	30....150	2	50				20		12	3
2SC 507	To	N	S	170	120	5	100	750	175	40....240	5	10				100		12	3
2SC 511	To	N	S	120	80	5	1,5A	800	175	30....150	2	200				20		12	3
2SC 513	To	N	S	70	40	5	1,5A	800	175	30....150	2	200				20		12	3
2SC 520A	To	N	S	100	80	5	7A	50W	150	30	5	1A				5		3	2,5
2SC 522	To	N	S	140	100	5	1,5A	10W	175	30....150	2	200				20			4
2SC 732	To	N	S		30	5	100	300	125	200..1200	6	2						98	1
2SC 735	To	N	S		30	5	400	300	125	40....400	1	100				300		98	3
2SC 863	To	N	S		35	4	25	200	150	30	10	7				950		30	3
2SC 941	To	N	S		30	4	20	200	125	40....240	12	2				120		98	3
2SC 991	To	N	S		36	4	400	5W	175	10....135	3	100				500		12	4
2SC 1000	To	N	S		50	5	100	200	125	120..1200	6	2				80		98	3
2SC 1166	To	N	S		50	5	200	600	150	40....400	1	50				100			3
2SD 102	To	N	S	110	80	10	3A	25W	150	30....300	5	500				1		40	2
2SD 110	To	N	S	130	110	10	10A	110W	150	30....300	5	1A				1		3	2
2SD 113	To	N	S	100	80	10	30A	200W	150	30....300	5	1A				1,5		3	2
2SD 114	To	N	S	70	50	10	30A	200W	150	30....300	5	1A				1,5		3	2
2SD 118	To	N	S		110	10	7A	100W	150	30....200	5	1A				2		3	2
2SD 119	To	N	S		80	10	7A	100W	150	30....200	5	1A				2		3	2
2SD 129	To	N	S		80	10	3A	25W	150	30....200	5	500				1		40	2
2SD 130	To	N	S		50	10	3A	25W	150	30....200	5	500				1		40	2
2SD 234	To	N	S		50	10	3A	25W	150	40....240	5	500				1		55	2
2SD 235	To	N	S		35	10	3A	25W	150	40....240	5	500				1		55	3
40022	Rc	P	G	32		5	5A	12,5W	100	38	2	1A				0,3		3	2
40050	Rc	P	G	40	40	5	5A	12,5W	100	50	5	500				0,5		3	2
40080	Rc	N	S		30		250	500	200								350	12	2
40082	Rc	N	S		60	2,5	1,5A	5W	200									12	2

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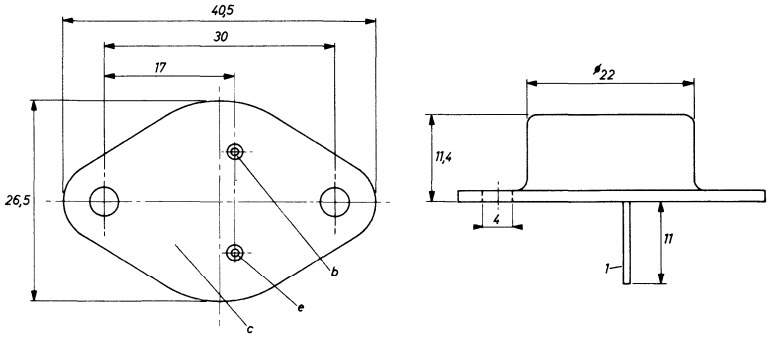

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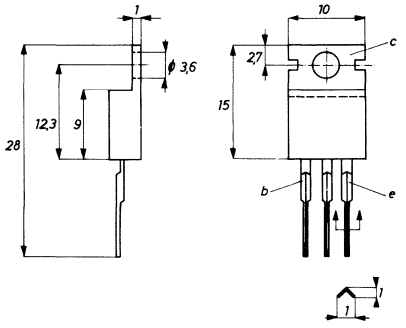

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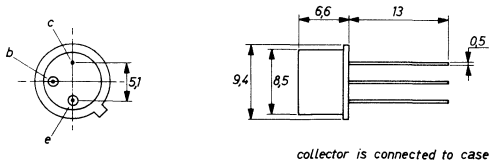

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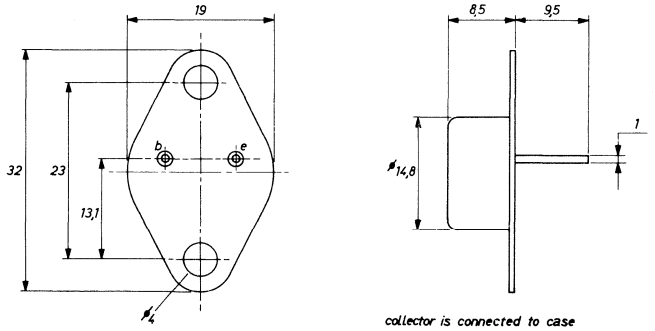

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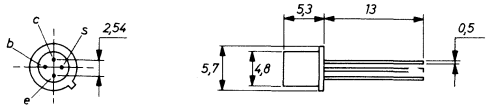

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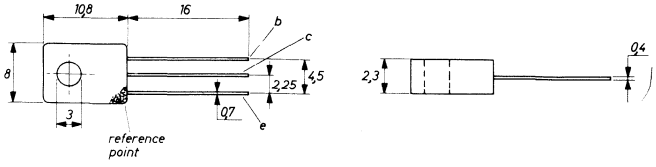

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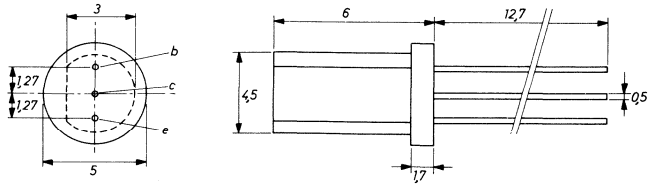

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Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS							Rthj-a	Case	Use
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min.... max	V_{ce} (V)	I_c (mA)	h_{fe} min.... max	V_{ce} (V)	I_c (mA)	f_T (MHz)	(°C/W)		
40231	Rc	N	S	18	18	5	100	500	175				55....180	10	2	60	300	37	1
40232	Rc	N	S	18	18	5	100	500	175				90....300	10	2	60	300	37	1
40233	Rc	N	S	18	18	5	100	500	175				90....300	10	2	60	300	37	1
40235	Rc	N	S	45		4,5	50	180	175	40....170	6	1				1000		36	3
40236	Rc	N	S	45		4,5	50	180	175	40....275	6	1				1000		36	3
40238	Rc	N	S	45		4,5	50	180	175	40....170	6	1				800		36	3
40239	Rc	N	S	45		4,5	50	180	175	27....100	6	1				800		36	3
40240	Rc	N	S	45		4,5	50	180	175	27....275	6	1				800		36	3
40243	Rc	N	S	45	45	4,5	50	180	175	40....170	6	1						36	3
40244	Rc	N	S	45	45	4,5	50	180	175	27....170	6	1						36	3
40250	Rc	N	S	50	40	5	4A	29W	200	25....100	4	1,5A						40	2
40251	Rc	N	S	50	40	5	15A	117W	200	15.....60	4	8A						3	2
40254	Rc	P	G	32		5	5A	12,5W	100	38	2	1A				0,3		3	2
40261	Rc	P	G	50			10	80					27....170	6	1	40		1	3
40263	Rc	P	G	20		2,5	50	120	100				100...325	6	1			1	1
40279	Rc	N	S	65	40	4	1,5A	11W	200	10	5	150						26	2
40290	Rc	N	S		90	4	400	7W	200							500		12	4
40291	Rc	N	S		90	4	500	11W	200							500		26	4
40292	Rc	N	S		90	4	1,2A	23W	200							300		26	4
40305	Rc	N	S	40	40	4	1A	7W	200	10	5	150						12	4
40311	Rc	N	S		30	2,5	700	5W	200	70....350	4	50				100	175	4	2
40314	Rc	N	S		40	2,5	700	5W	200	35....150	4	50				100	175	4	2
40315	Rc	N	S		35	2,5	700	5W	200	70....350	4	50				100	175	4	2
40317	Rc	N	S		40	2,5	700	5W	200	40....200	4	10					175	4	2
40319	Rc	P	S		40	2,5	700	5W	200	35....200	4	50				100		3	2
40320	Rc	N	S		40	2,5	700	5W	200	40....200	4	10						4	2
40329	Rc	P	G	25	25	2,5	100	375	100	50....200	1	25	75....300	10	10			1	1
40340	Rc	N	S	60	25	4	3,3A	70W	200							100		26	2
40341	Rc	N	S	70	35	4	3,3A	70W	200							100		26	2
40346	Rc	N	S				1A	10W		25	10	10						4	1,5
40347	Rc	N	S	60	40	7	1,5A	8,7W	200	25....100	4	450						4	2
40354	Rc	N	S		150	5	50	500	175	55	10	10				50		37	7
40366	Rc	N	S		65	7	1A	5W	200	20	10	0,1						4	2,5
40397	Rc	N	S		25	7,5	200	500	175	165...600	10	10	165	12	10	80	300	37	1,7

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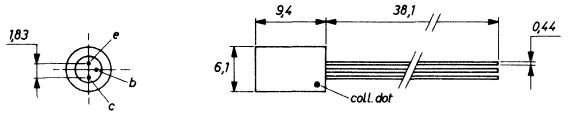

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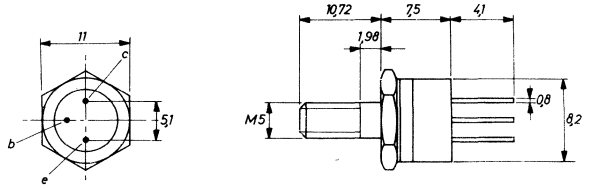

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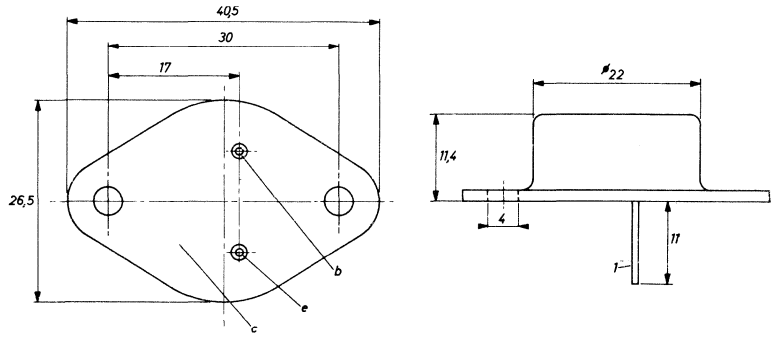

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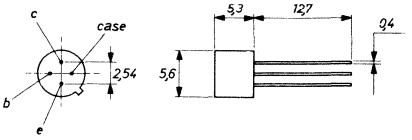

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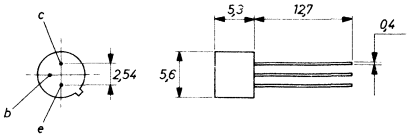

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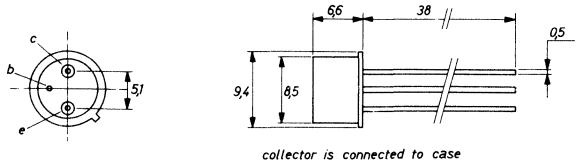

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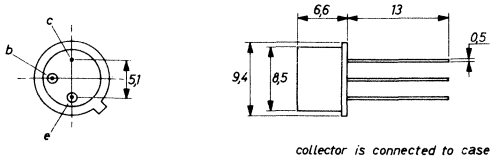

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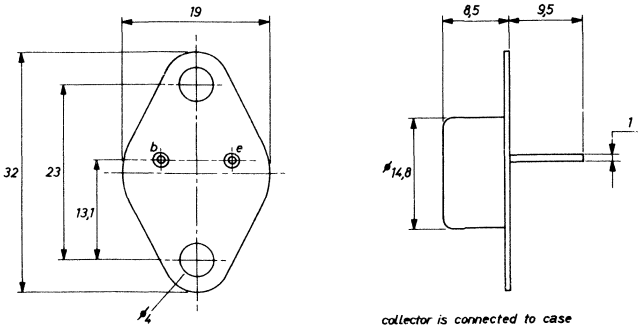

Type	Manufacturer	PNP/NPN	Germanium/Silicon	MAXIMUM RATINGS						ELECTRICAL CHARACTERISTICS									
				V_{cbo} (V)	V_{ceo} (V)	V_{ebo} (V)	I_c (mA)	P_{tot} (mW)	T_j (°C)	h_{FE} min. . . . max	V_{ce} (V)	I_c (mA)	h_{fe} min. . . . max	V_{ce} (V)	I_c (mA)	f_T (MHz)	Rthj-a (°C/W)	Case	Use
40412	Rc	N	S				1A	10W	200	40	20	30	2	10	10			4	5
40458	Rc	N	S	60	40	8	1A	500	175	100...300	10	10	75	12	10	200		37	8
40472	Rc	N	S	45		3	50	180	175	40....170	6	1				900		114	3
40473	Rc	N	S	45		3	50	180	175	40....275	6	1				900		114	3
40481	Rc	N	S	45	45	3	50	180	175	70....275	6	1				860		114	3
40482	Rc	N	S	45	45	3	50	180	175	27.....90	6	1				860		114	3
40490	Rc	P	G	20	18	2,5	20	120	100				180...425	6	1		390	1	1
40519	Rc	N	S		16	5	500	1W	175	20	50	1						23	1
40537	Rc	P	S	55		5	700	5W	200	50....300	4	50				100	175	4	2
40539	Rc	N	S	55		5	700	5W	200	15.....90	4	50				100		4	1
40544	Rc	N	S	50		5	700	7W	200	35....200	4	50				100		4	1
40577	Rc	N	S		60	4	500	3W	200	50....275	5	100	5	28	25			4	1
40594	Rc	N	S			4	2A	10W	200	70....350	4	300						4	1
40608	Rc	N	S	40	40	2	400	3,5W	200	35....120	15	50				700		12	3
40611	Rc	N	S		25	2,5	700	5W	200	75....500	4	59						4	1
40612	Rc	P	G		25	5	5A	12W	100	30....150	2	100						3	2
40616	Rc	N	S		32	2,5	700	5W	200	75....500	4	50						4	1
40623	Rc	P	G		45	5	5A	12W	100	50....170	2	1A						3	2
40626	Rc	P	G		55	5	5A	12W	100	50....170	2	1A						3	2
40633	Rc	N	S		75	5	8A	83W	150	20.....70	4	4A						3	2
40634	Rc	P	S		75	7	700	5W	200	50....250	4	100						4	1
40635	Rc	N	S		75	7	700	5W	200	50....250	4	100						4	1
40636	Rc	N	S		95	7	15A	115W	200	20.....70	4	4A						3	2
40637	Rc	N	S		30	5	100	1W	200							175		23	3

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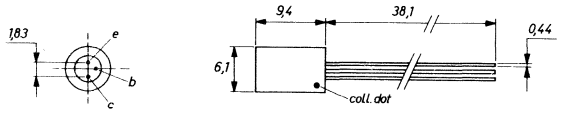

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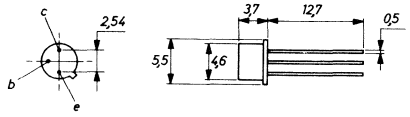

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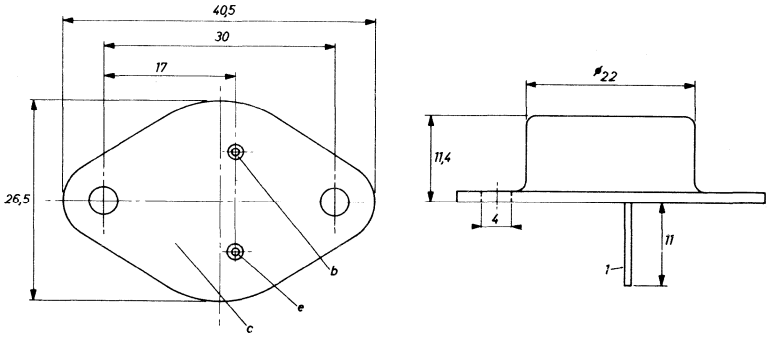

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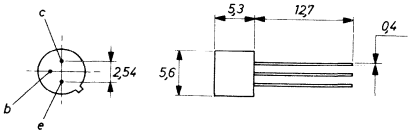

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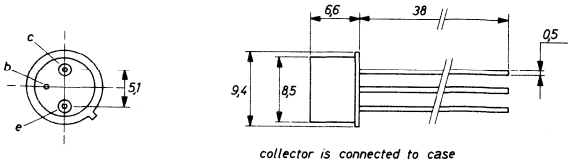

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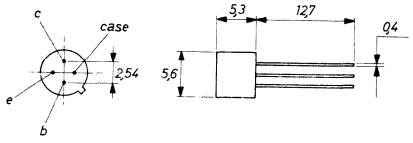

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