

MPS4250

Transistor

PNP Silicon

Features

- Pb-Free Packages are Available*

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	–40	Vdc
Collector–Emitter Voltage	V_{CES}	–40	Vdc
Collector–Base Voltage	V_{CBO}	–40	Vdc
Emitter–Base Voltage	V_{EBO}	–5.0	Vdc
Collector Current – Continuous	I_C	–	mAdc
Total Device Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_D	625 5.0	W mW/ $^\circ\text{C}$
Total Device Dissipation @ $T_C = 25^\circ\text{C}$ Derate above 25°C	P_D	1.5 12	W mW/ $^\circ\text{C}$
Operating and Storage Junction Temperature Range	T_J, T_{stg}	–55 to +150	$^\circ\text{C}$

THERMAL CHARACTERISTICS

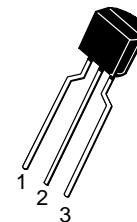
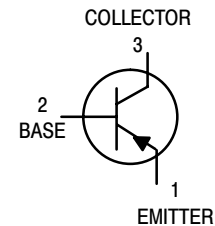
Characteristic	Symbol	Max	Unit
Thermal Resistance, Junction–to–Ambient	$R_{\theta JA}$	200	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction–to–Case	$R_{\theta JC}$	83.3	$^\circ\text{C}/\text{W}$

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.



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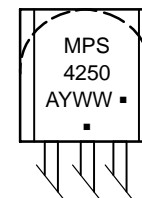
<http://onsemi.com>



TO-92
CASE 29
STYLE 1

BENT LEAD
TAPE & REEL
AMMO PACK

MARKING DIAGRAM



A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping†
MPS4250	TO-92	5000 / Tape & Reel
MPS4250G	TO-92 (Pb-Free)	5000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

MPS4250

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

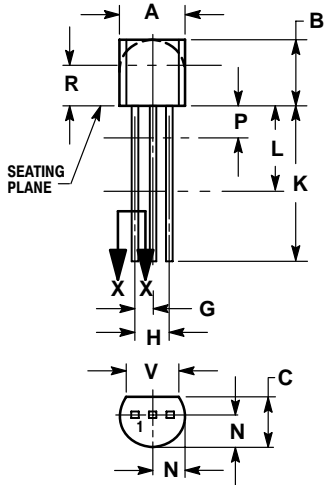
Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Collector–Emitter Breakdown Voltage ($I_C = -5.0\text{ mA}$)	$V_{(BR)CES}$	-40	-	Vdc
Collector–Emitter Sustaining Voltage (Note 1) ($I_C = -5.0$)	$V_{(BR)CEO(sus)}$	-40	-	Vdc
Collector–Base Breakdown Voltage ($I_C = -10\ \mu\text{A}$)	$V_{(BR)CBO}$	-40	-	Vdc
Emitter–Base Breakdown Voltage ($I_E = -10\ \mu\text{A}$)	$V_{(BR)EBO}$	-5.0	-	Vdc
Collector Cutoff Current ($V_{CB} = -50\text{ V}$) ($V_{CB} = -40\text{ V}$, $T_A = 65^\circ\text{C}$)	I_{CBO}	-	-10 -3.0	nA μA
Emitter Cutoff Current ($V_{EB} = -3.0\text{ V}$)	I_{EBO}	-	-20	nA
ON CHARACTERISTICS				
DC Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -5.0\text{ V}$) ($I_C = -10\text{ mA}$, $V_{CE} = -5.0\text{ V}$)	h_{FE}	250 250	- -	-
Collector–Emitter Saturation Voltage (Note 1) ($I_C = -10\text{ mA}$, $I_B = -0.5\text{ mA}$)	$V_{CE(sat)}$	-	-0.25	Vdc
Base–Emitter Saturation Voltage (Note 1) ($I_C = -10\text{ mA}$, $I_B = -0.5\text{ mA}$)	$V_{BE(sat)}$	-	-0.9	Vdc
SMALL–SIGNAL CHARACTERISTICS				
Output Capacitance ($V_{CB} = -5.0\text{ V}$, $f = 1.0\text{ MHz}$)	C_{obo}	-	6.0	pF
Input Capacitance ($V_{EB} = -0.5\text{ V}$, $f = 1.0\text{ MHz}$)	C_{ibo}	-	16	pF
Small–Signal Current Gain ($I_C = -1.0\text{ mA}$, $V_{CE} = -5.0\text{ V}$, $f = 1.0\text{ kHz}$) ($I_C = -0.5\text{ mA}$, $V_{CE} = -5.0\text{ V}$, $f = 20\text{ MHz}$)	h_{fe}	250 2.0	800 -	-
Noise Figure ($I_C = -20\ \mu\text{A}$, $V_{CE} = -5.0\text{ V}$, $R_S = 10\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $P_{BW} = 150\text{ Hz}$) ($I_C = -250\ \mu\text{A}$, $V_{CE} = -5.0\text{ V}$, $R_S = 1.0\text{ k}\Omega$, $f = 1.0\text{ kHz}$, $P_{BW} = 150\text{ Hz}$)	NF	- -	2.0 2.0	dB

1. Pulse Test: Pulse Width = 300 μs ; Duty Cycle = 2.0%.

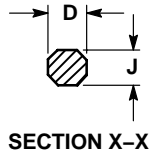
MPS4250

PACKAGE DIMENSIONS

TO-92 (TO-226)
CASE 29-11
ISSUE AM



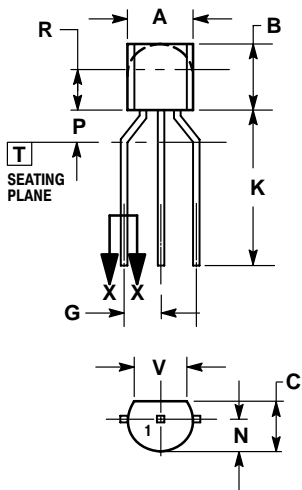
STRAIGHT LEAD
BULK PACK



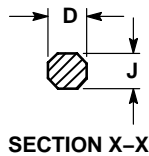
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.175	0.205	4.45	5.20
B	0.170	0.210	4.32	5.33
C	0.125	0.165	3.18	4.19
D	0.016	0.021	0.407	0.533
G	0.045	0.055	1.15	1.39
H	0.095	0.105	2.42	2.66
J	0.015	0.020	0.39	0.50
K	0.500	---	12.70	---
L	0.250	---	6.35	---
N	0.080	0.105	2.04	2.66
P	---	0.100	---	2.54
R	0.115	---	2.93	---
V	0.135	---	3.43	---



BENT LEAD
TAPE & REEL
AMMO PACK



NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. CONTOUR OF PACKAGE BEYOND DIMENSION R IS UNCONTROLLED.
4. LEAD DIMENSION IS UNCONTROLLED IN P AND BEYOND DIMENSION K MINIMUM.

DIM	MILLIMETERS	
	MIN	MAX
A	4.45	5.20
B	4.32	5.33
C	3.18	4.19
D	0.40	0.54
G	2.40	2.80
J	0.39	0.50
K	12.70	---
N	2.04	2.66
P	1.50	4.00
R	2.93	---
V	3.43	---

STYLE 1:

1. PIN 1. EMITTER
2. BASE
3. COLLECTOR

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