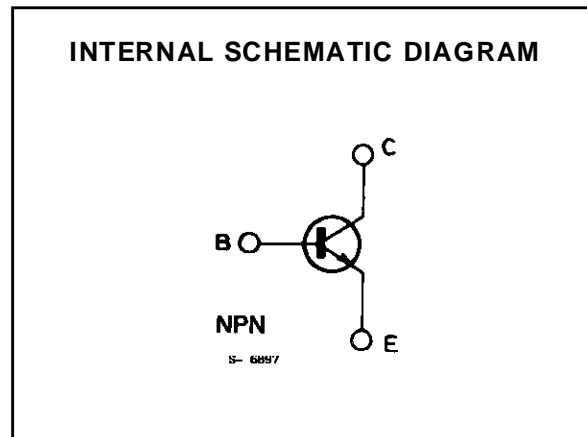
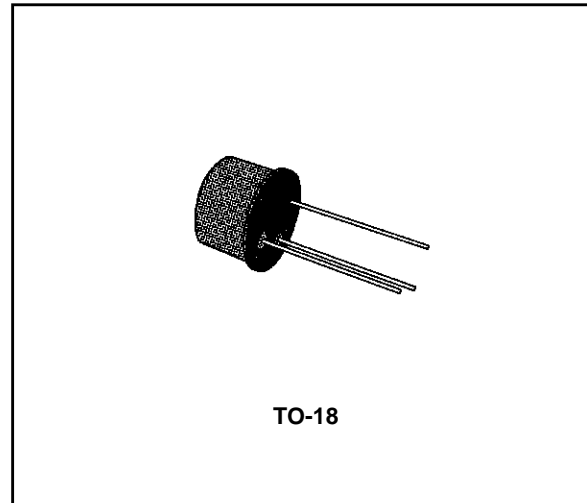


SATURATED LOGIC SWITCH AND VHF AMPLIFIER

DESCRIPTION

The 2N914 is a silicon planar epitaxial NPN transistor in Jedec TO-18 metal case. It is primarily a universal switch but it is also an excellent high speed, high gain logic and memory driver at collector currents up to 500 mA.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-base Voltage ($I_E = 0$)	40	V
V_{CER}	Collector-emitter Voltage ($R_{BE} \leq 10 \Omega$)	20	V
V_{CEO}	Collector-emitter Voltage ($I_B = 0$)	15	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	5	V
I_c	Collector Current	500	mA
P_{tot}	Total Power Dissipation at $T_{amb} \leq 25 \text{ }^\circ\text{C}$	0.36	W
	at $T_{case} \leq 25 \text{ }^\circ\text{C}$	1.2	W
	at $T_{case} \leq 100 \text{ }^\circ\text{C}$	0.68	W
T_{stg}, T_j	Storage and Junction Temperature	- 65 to 200	$^\circ\text{C}$

2N914

THERMAL DATA

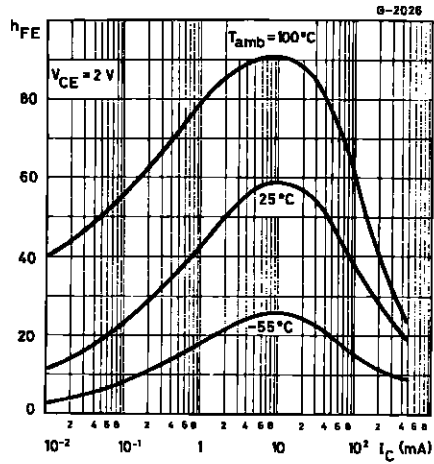
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	146	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	486	$^{\circ}C/W$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\ ^{\circ}C$ unless otherwise specified)

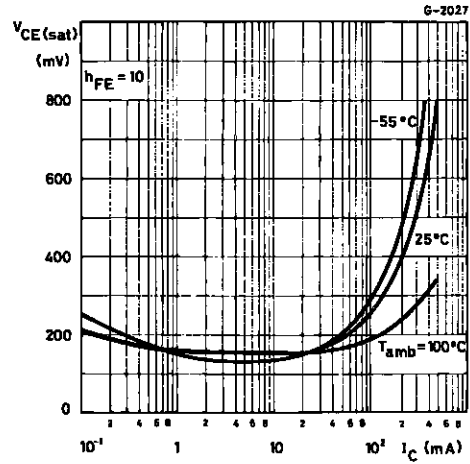
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	$V_{CB} = 20\ V$ $V_{CB} = 20\ V$ $T_{amb} = 150\ ^{\circ}C$			25 15	nA μA
I_{CEX}	Collector Cutoff Current ($V_{BE} = -0.25\ V$)	$V_{CE} = 20\ V$ $T_{amb} = 125\ ^{\circ}C$			10	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 4\ V$			100	nA
$V_{(BR)CBO}$	Collector–base Breakdown Voltage ($I_E = 0$)	$I_C = 1\ \mu A$	40			V
$V_{(BR)CES}$	Collector–emitter Breakdown Voltage ($R_{BE} \leq 10\ \Omega$)	$I_C = 10\ mA$	20			V
$V_{(BR)CEO}^*$	Collector–emitter Breakdown Voltage ($I_B = 0$)	$I_C = 30\ mA$	15			V
$V_{(BR)EBO}$	Emitter–base Breakdown Voltage ($I_C = 0$)	$I_E = 10\ \mu A$	5			V
$V_{CE(sat)}^*$	Collector–emitter Saturation Voltage	$I_C = 20\ mA$ $I_B = 2\ mA$ $I_C = 200\ mA$ $I_B = 20\ mA$		0.2 0.4	0.25 0.7	V V
$V_{BE(sat)}^*$	Base–emitter Saturation Voltage	$I_C = 10\ mA$ $I_B = 1\ mA$	0.7	0.74	0.8	V
h_{FE}^*	DC Current Gain	$I_C = 10\ mA$ $V_{CE} = 1\ V$ $I_C = 500\ mA$ $V_{CE} = 5\ V$ $I_C = 10\ mA$ $V_{CE} = 1\ V$ $T_{amb} = -55\ ^{\circ}C$	30 10 12	55 17 28	120	– – –
f_T	Transition Frequency	$I_C = 20\ mA$ $V_{CE} = 10\ V$ $f = 100\ MHz$	300	370		MHz
C_{EBO}	Emitter–base Capacitance	$I_C = 0$ $V_{EB} = 0.5\ V$ $f = 1\ MHz$			9	pF
C_{CBO}	Collector–base Capacitance	$I_E = 0$ $V_{CB} = 10\ V$ $f = 1\ MHz$		4.5	6	pF
t_s	Storage Time	$I_C = 20\ mA$ $V_{CC} = 5\ V$ $I_{B1} = -$ $I_{B2} = 20\ mA$		13	20	ns
t_{on}	Turn–on Time	$I_C = 200\ mA$ $V_{CC} = 5\ V$ $I_{B1} = 40\ mA$		25	40	ns
t_{off}	Turn–off Time	$I_C = 200\ mA$ $V_{CC} = 5\ V$ $I_{B1} = 40\ mA$ $I_{B2} = -20\ mA$		25	40	ns

* Pulsed : pulse duration = 300 μs , duty cycle = 1 %.

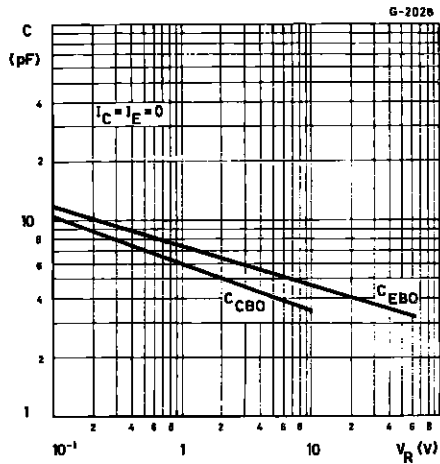
DC Current Gain.



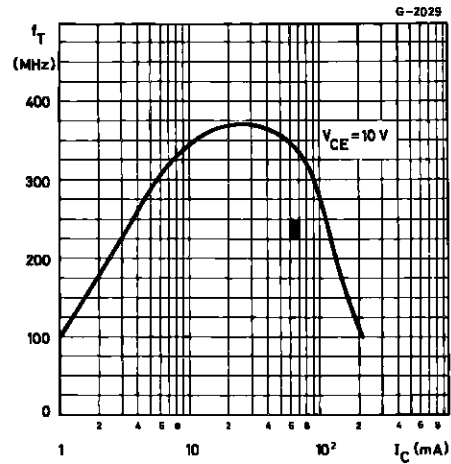
Collector-emitter Saturation Voltage.



Collector-base and Emitter-base Capacitances.

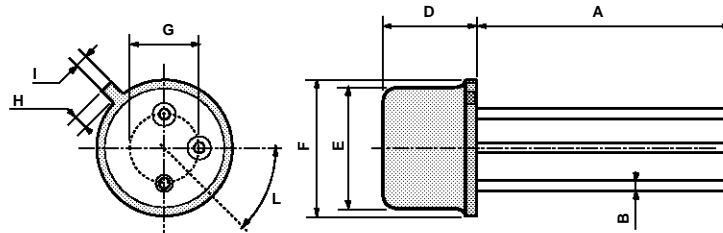


Transition Frequency.



TO39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



P008B

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