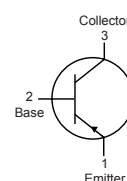
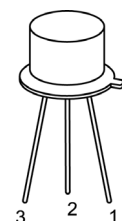


**RoHS
Compliant**



Pin Configuration:

1. Emitter
2. Base
3. Collector

Description:

A Silicon NPN transistor in a TO-39 case intended for low power amplifier and switching applications

Maximum Ratings:

Characteristic	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}		
Emitter-Base Voltage	V_{EBO}	6	
Continuous Collector Current	I_C	0.3	A
Total Device Dissipation ($T_A = +25^\circ\text{C}$) Derate Above 25°C	P_D	1 5.7	W mW/ $^\circ\text{C}$
Total Device Dissipation ($T_C = +25^\circ\text{C}$, Note 1) Derate Above 25°C	P_D	5 28.6	
Operating Junction Temperature Range,	T_J	-65 to +200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}		
Thermal Resistance, Junction-to-case	R_{thJC}	35	$^\circ\text{C/W}$
Thermal Resistance, Junction-to-Ambient	R_{thJA}	175	

Power Transistor



Electrical Characteristics ($T_A = +25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
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OFF Characteristics

Collector-Emitter Sustaining Voltage	$V_{CE(sus)}$	$I_C = 10\text{mA}, I_B = 0, \text{Note 1}$	150	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB} = 75\text{V}, I_E = 0$	-	0.05	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$		25	nA

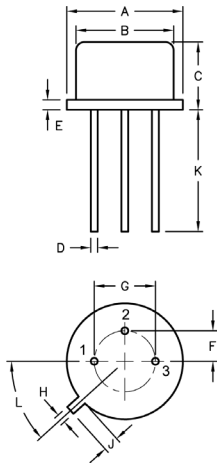
ON Characteristics (Note 1)

DC Current Gain	h_{FE}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}$	75	-	-
		$I_C = 150\text{mA}, V_{CE} = 10\text{V}$	100	300	
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 5\text{mA}$	-	0.25	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$			0.9	

Small Signal Characteristics

Current Gain-Bandwidth Product	f_T	$I_C = 20\text{mA}, V_{CE} = 20\text{V}, f = 100\text{MHz}$	150	-	MHz
Output Capacitance	C_{ObO}	$V_{CB} = 10\text{V}, I_E = 0, f = 0.1\text{MHz}$	-	8	pF
Input Capacitance	C_{ibO}	$V_{CB} = 5\text{V}, I_C = 0, f = 0.1\text{MHz}$		80	
Small-Signal Current Gain	h_{fe}	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	75	375	
Real Part of Input Impedance	$\text{Re}(h_{ie})$	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 1\text{MHz}$		300	Ω

Note 1 : Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$



Dimensions	Min.	Max.
A	8.5	9.39
B	7.74	8.5
C	6.09	6.6
D	0.4	0.53
E	-	0.88
F	2.41	2.66
G	4.82	5.33
H	0.71	0.86
J	0.73	1.02
K	12.7	-
L	42°	48°

Dimensions : Millimetres

Pin Configuration:

1. Emitter
2. Base
3. Collector

Part Number Table

Description	Part Number
Transistor, NPN, 0.3A, 150V, TO-39	2N3501

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