

Medium Power Bipolar Transistor



Pin Configuration

1. Emitter
2. Base
3. Collector

Features:

- High performance, low frequency devices typically with current ratings 1A. Up to 1W power dissipation
- Silicon power switching transistors
- Medium power amplifier and switching applications

Absolute Maximum Ratings:

($T_a = 25^\circ\text{C}$ unless otherwise specified)

Characteristic	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CEO}	75	
Emitter-Base Voltage	V_{EBO}	7	
Collector Current Continuous	I_C	2	A
Base Current	I_B	1	
Power Dissipation at $T_a = 25^\circ\text{C}$ Derate above 25°C	P_D	1 5.71	W mW/ $^\circ\text{C}$
Power Dissipation at $T_C = 25^\circ\text{C}$ Derate above 25°C		10 57.14	
Operating Temperature	T_J	200	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to +200	

Thermal Resistance

Junction to Ambient	$R_{th(j-a)}$	175	$^\circ\text{C/W}$
Junction to Case	$R_{th(j-c)}$	17.5	

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Electrical Characteristics:

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

Parameter	Symbol	Test Condition	Min.	Max.	Unit
Collector Emitter Voltage	V_{CEO}	$I_C = 100\text{mA}, I_B = 0$	75	-	V
Collector Cut off Current	I_{CEX}	$V_{CE} = 70\text{V}, V_{BE} = 1.5\text{V}, T_C = 150^\circ\text{C}$	-	5	mA
		$V_{CE} = 100\text{V}, V_{BE} = 1.5\text{V}$		100	μA
Emitter Cut off Current	I_{EBO}	$V_{BE} = 7\text{V}, I_C = 0$			
DC Current Gain	h_{FE}	$I_C = 1\text{A}, V_{CE} = 2\text{V}$	10	-	-
		$I_C = 0.5\text{A}, V_{CE} = 4\text{V}$	30	130	
Collector Emitter Saturation Voltage	$*V_{CE(Sat)}$	$I_C = 50\text{mA}, I_B = 50\text{mA}$	-	0.7	V
Base Emitter On Voltage	$*V_{BE(On)}$	$I_C = 50\text{mA}, V_{CE} = 4\text{V}$		1.1	

Dynamic Characteristics

Small Signal Current Gain	h_{fe}	$I_C = 50\text{mA}, V_{CE} = 4\text{V}, f = 10\text{MHz}$	5	-	-
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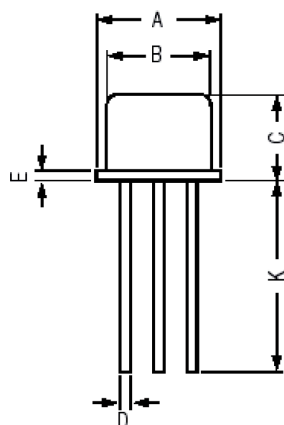
Switching Characteristics

Turn On Time	t_{on}	$V_{CC} = 30\text{V}, I_C = 500\text{mA}, I_{B1} = 50\text{mA}$	-	100	ns
Turn Off Time	t_{off}	$V_{CC} = 30\text{V}, I_C = 500\text{mA}, I_{B1} = I_{B2} = 50\text{mA}$		1,000	

*Pulsed: Pulse Width $\leq 30\mu\text{s}$, Duty Cycle $\leq 2\%$

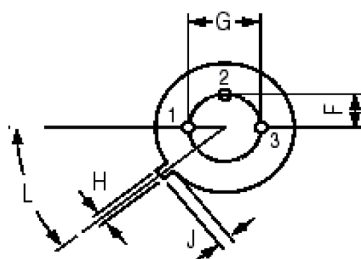
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TO-39 Metal Can Package



Dim.	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



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Part Number Table

Description	Part Number
Transistor, PNP, TO-39	2N5322

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