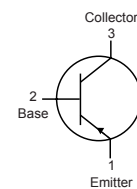
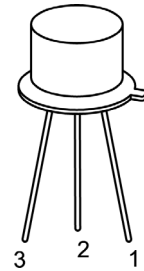


Bipolar Transistor

RoHS
Compliant



Description:

A Silicon NPN transistor in a TO-39 case intended for high voltage switching and linear amplifier applications

Pin Configurations:

1. Emitter
2. Base
3. Collector

Maximum Ratings:

Characteristic	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	350	V
Collector-Base Voltage	V_{CBO}	450	
Emitter-Base Voltage	V_{EBO}	7	
Continuous Collector Current - Base Current	I_C I_B	1 500	A mA
Total Device Dissipation ($T_A = +25^\circ\text{C}$, Note 1) Derate Above $25^\circ\text{C} = 5.7$	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		175	

Bipolar Transistor



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

Parameter	Symbol	Test Conditions	Min.	Typ	Max.	Unit
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OFF Characteristics

Collector-Emitter Sustaining Voltage	$V_{CEO(sus)}$	$I_C = 50\text{mA}, I_B = 0, \text{Not } 1$	350		-	V
Collector Cut-Off Current	I_{CEO}	$V_{CE} = 300\text{V}, I_B = 0$	-	-	20	μA
	I_{CEX}	$V_{CE} = 450\text{V}, I_{BE} = 1.5\text{V}$			500	
	I_{CBO}	$V_{CB} = 360\text{V}, I_E = 0$			20	
Emitter Cut-Off Current	I_{EBO}	$V_{EB} = 6\text{V}, I_E = 0$				

ON Characteristics

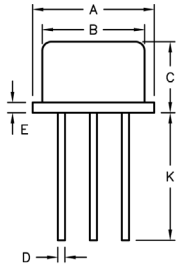
DC Current Gain (Note 1)	h_{FE}	$I_C = 2\text{mA}, V_{CE} = 10\text{V}$	30	-	-	-
		$I_C = 20\text{mA}, V_{CE} = 10\text{V}$	40		160	
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 50\text{mA}, I_B = 4\text{mA}$	-	-	0.5	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$				1.3	

Small Signal Characteristics

Current Gain-Bandwidth Product	f_T	$I_C = 10\text{mA}, V_{CE} = 10\text{V}, f = 5\text{MHz}$	15	-	-	MHz
Output Capacitance	C_{ObO}	$V_{CB} = 10\text{V}, I_C = 0, f = 1\text{MHz}$	-		10	
Input Capacitance	C_{IbO}	$V_{CB} = 5\text{V}, I_C = 0, f = 1\text{MHz}$			75	
Small-Signal Current Gain	h_{fe}	$I_C = 5\text{mA}, V_{CE} = 10\text{V}, f = 1\text{MHz}$	25		-	
Real Part of Input Impedance	$\text{Re}(h_{ie})$	$V_{CE} = 10\text{V}, I_C = 5\text{mA}, f = 5\text{MHz}$			300	Ω

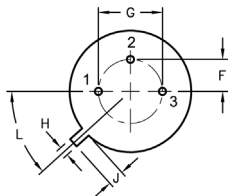
Note 1 : Pulse Test : Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

Caution: The Sustaining voltage must not be measured on a curve tracer



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

Dimensions : Millimetres



Pin Configurations:

1. Emitter
2. Base
3. Collector

Part Number Table

Description	Part Number
Transistor, NPN, 1A, 350V, TO-39	2N3439

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