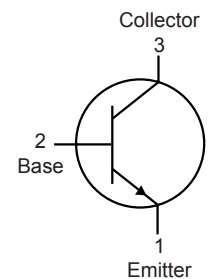
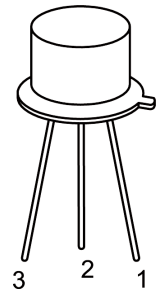


Bipolar Transistor

RoHS
Compliant



Description:

A Silicon epitaxial NPN planer transistor in a TO-39 type package designed for use as drivers for high Power transistors in general purpose amplifier and switching circuits.

Maximum Ratings:

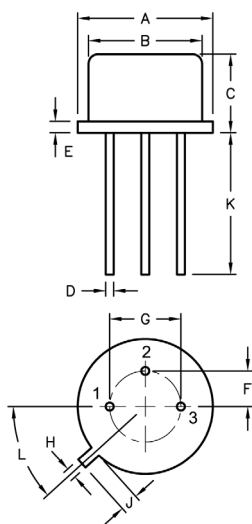
Characteristic	Symbol	Rating	Unit
Collector Emitter Voltage	V_{CEO}	100	V
Collector Base Voltage	$(I_E = 0), V_{CBO}$		
Emitter Base Voltage	$(I_C = 0), V_{EBO}$	4	
Collector Current	I_C	1	A
Base Current	I_B	500	mA
Total Device Dissipation	$(T_C = +25^\circ\text{C}), P_{tot}$	10	W
Total Device Dissipation	$(T_A = +25^\circ\text{C}), P_{tot}$	1	
Operating Junction Temperature	T_J	-65 to +200	°C
Storage Temperature Range	T_{stg}	-65 to +200	
Thermal Resistance, Junction-to-Case	R_{thJC}	17.4	°C/W
Thermal Resistance, Junction-to-Ambient	R_{thJA}	175	

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

Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 100\text{V}, I_E = 0$	-	1	μA
	I_{CEO}	$V_{CE} = 70\text{V}, I_B = 0$		10	
	I_{CEV}	$V_{CE} = 100\text{V}, V_{BE} = -1.5\text{V}$ $V_{CE} = 100\text{V}, V_{BE} = -1.5\text{V}, T_C = +150^\circ\text{C}$		1	mA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 4\text{V}, I_C = 0$			μA
Collector-Emitter Sustaining Voltage	$V_{CEO(SUS)}$	$I_C = 10\text{mA}, I_B = 0$, Note 1	100	-	
Collector-Emitter Saturation Voltage	$V_{CE(Sat)}$	$I_C = 250\text{mA}, I_B = 25\text{mA}$, Note 1	-	0.6	V
		$I_C = 500\text{mA}, I_B = 50\text{mA}$, Note 1		1	
		$I_C = 1\text{A}, I_B = 200\text{mA}$, Note 1		2	
Base-Emitter Voltage	$V_{BE(on)}$	$V_{CE} = 2\text{V}, I_C = 250\text{mA}$		1	
DC Current Gain	h_{FE}	$I_C = 250\text{mA}, V_{CE} = 2\text{V}$, Note 1	40	150	-
		$I_C = 1\text{A}, V_{CE} = 2\text{V}$, Note 1	5		
Transition Frequency	f_T	$V_{CE} = 10\text{V}, I_C = 100\text{mA}, f = 10\text{MHz}$	30		MHz
Collector-Base Capacitance	C_{cbo}	$V_{CB} = 20\text{V}, I_E = 0, f = 1\text{MHz}$	-	50	pF
Small-Signal Current Gain	h_{fe}	$V_{CE} = 1.5\text{V}, I_C = 200\text{mA}, f = 1\text{kHz}$	40	-	-

Note:

1. Pulse Duration: $300\mu\text{s}$, Duty Cycle $\leq 2\%$



Dimensions	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 Configuration:

1. Emitter
2. Base 1
3. Base 2

Part Number Table

Description	Part Number
Transistor, NPN, 1A, 100V, TO-39	2N5681

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