

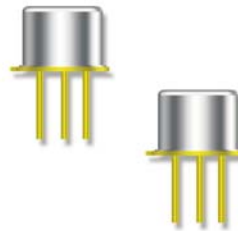
NPN Power Silicon Transistor

2N5339



Features

- Available in commercial, JAN, JANTX, JANTXV, JANS and JANSR 100K rads (Si) per MIL-PRF-19500/560
- TO-39 (TO-205AD) Package



Maximum Ratings

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	100	Vdc
Collector - Base Voltage	V_{CBO}	100	Vdc
Emitter - Base Voltage	V_{EBO}	6.0	Vdc
Base Current	I_B	1.0	Adc
Collector Current	I_C	5.0	Adc
Total Power Dissipation @ $T_A = 25^\circ\text{C}$ @ $T_C = 25^\circ\text{C}$	P_T	1.0 17.5	W
Operating & Storage Temperature Range	T_{op}, T_{stg}	-65 to +200	$^\circ\text{C}$
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	10	$^\circ\text{C/W}$

Electrical Characteristics

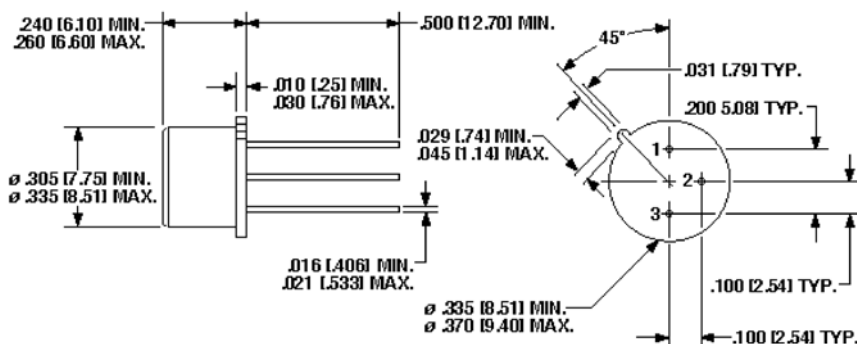
OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 50 \text{ mAdc}$	$V_{(BR)CEO}$	100	---	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 100 \text{ Vdc}$	I_{CEO}	---	100	μAdc
Collector - Emitter Cutoff Current $V_{CE} = 90 \text{ Vdc}, V_{BE} = 1.5 \text{ Vdc}$	I_{CEX}	---	1.0	μAdc
Collector-Base Cutoff Current $V_{CB} = 100 \text{ Vdc}$	I_{CBO}	---	1.0	μAdc
Emitter - Base Cutoff Current $V_{EB} = 6.0 \text{ Vdc}$	I_{EBO}	---	100	μAdc
ON Characteristics				
Forward Current Transfer Ratio $I_C = 0.5 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 2.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ $I_C = 5.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$	H_{FE}	60 60 40	--- 240 ---	
Collector - Emitter Saturation Voltage $I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{CE(sat)}$	--- ---	0.7 1.2	Vdc
Base - Emitter Saturation Voltage $I_C = 2.0 \text{ Adc}, I_B = 0.2 \text{ Adc}$ $I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$	$V_{BE(sat)}$	---	1.2 1.8	Vdc



Electrical Characteristics -con't

DYNAMIC Characteristics	Symbol	Mimimum	Maximum	Units
Magnitude of Common Emitter Small-Signal Short-Circuit Forward Current Transfer Ratio $I_C = 0.5 \text{ Adc}$, $V_{CE} = 10.0 \text{ Vdc}$, $f = 10 \text{ MHz}$	$ h_{fe} $	3	15	
Output Capacitance $V_{CB} = 10.0 \text{ Vdc}$, $I_E = 0$, $100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{obo}	- - -	250	pF
Input Capacitance $V_{BE} = 2.0 \text{ Vdc}$, $I_E = 0$, $100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$	C_{ibo}	- - -	1,000	pF
SAFE OPERATING AREA				
DC Tests: $T_C = +25^\circ \text{C}$, 1 Cycle, $t = 0.5 \text{ s}$ Test 1: $V_{CE} = 2.0 \text{ Vdc}$, $I_C = 5.0 \text{ Adc}$ Test 2: $V_{CE} = 5.0 \text{ Vdc}$, $I_C = 2.0 \text{ Adc}$ Test 3: $V_{CE} = 90.0 \text{ Vdc}$, $I_C = 55 \text{ mAdc}$				

Outline Drawing



NOTE: Dimensions in Inches [mm]

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