

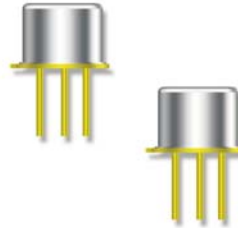
# NPN Power Silicon Transistor

## 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	$P_T$	1.0 17.5	W
		@ $T_A = 25\text{ }^\circ\text{C}$ @ $T_C = 25\text{ }^\circ\text{C}$	
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

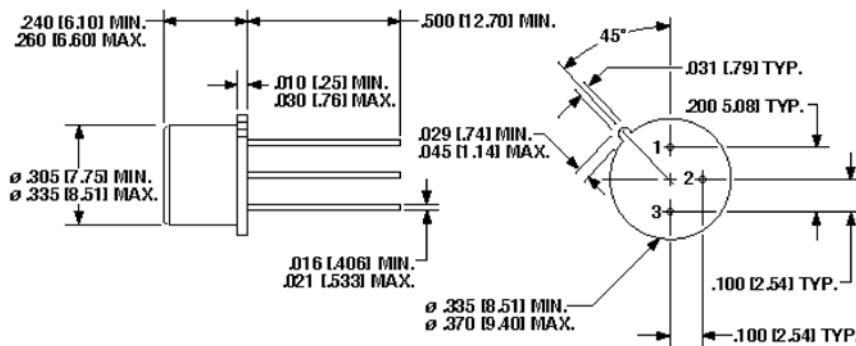
OFF Characteristics	Symbol	Minimum	Maximum	Units
Collector - Emitter Breakdown Voltage $I_C = 50\text{ mA}$	$V_{(BR)CEO}$	100	---	Vdc
Collector - Emitter Cutoff Current $V_{CE} = 100\text{ Vdc}$	$I_{CEO}$	---	100	$\mu\text{Adc}$
Collector - Emitter Cutoff Current $V_{CE} = 90\text{ Vdc}, V_{BE} = 1.5\text{ Vdc}$	$I_{CEX}$	---	1.0	$\mu\text{Adc}$
Collector-Base Cutoff Current $V_{CB} = 100\text{ Vdc}$	$I_{CBO}$	---	1.0	$\mu\text{Adc}$
Emitter - Base Cutoff Current $V_{EB} = 6.0\text{ Vdc}$	$I_{EBO}$	---	100	$\mu\text{Adc}$
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
<b>SAFE OPERATING AREA</b>				
<b>DC Tests:</b>	$T_C = +25 \text{ }^\circ\text{C}, 1 \text{ Cycle}, t = 0.5 \text{ s}$			
<b>Test 1:</b>	$V_{CE} = 2.0 \text{ Vdc}, I_C = 5.0 \text{ Adc}$			
<b>Test 2:</b>	$V_{CE} = 5.0 \text{ Vdc}, I_C = 2.0 \text{ Adc}$			
<b>Test 3:</b>	$V_{CE} = 90.0 \text{ Vdc}, I_C = 55 \text{ mAdc}$			

### Outline Drawing



NOTE: Dimensions in Inches [mm]

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