

NPN Power Silicon Transistor

2N5339



Features

- Available in JAN, JANTX, JANTXV and JANS 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 @ $T_A = 25\text{ }^\circ\text{C}$ @ $T_C = 25\text{ }^\circ\text{C}$ | 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-Air | $R_{\theta JC}$ | 175 | $^\circ\text{C/W}$ |

Electrical Characteristics

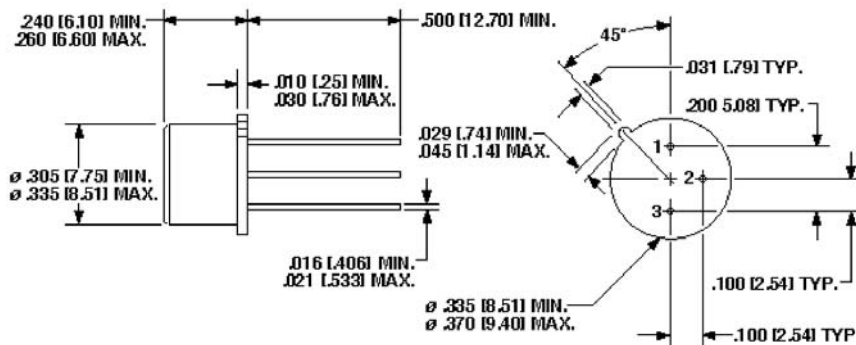
| OFF Characteristics | Symbol | Minimum | Maximum | Units |
|---|---------------|----------------|-------------------|-----------------|
| Collector - Emitter Breakdown Voltage $I_C = 50\text{ mA}$ | $V_{(BR)CEO}$ | 100 | --- | Vdc |
| Collector - Emitter Cutoff Current $V_{CE} = 100\text{ Vdc}$ | I_{CEO} | --- | 100 | μAdc |
| Collector - Emitter Cutoff Current $V_{CE} = 100\text{ Vdc}, V_{BE} = 1.5\text{ Vdc}$ | I_{CEX} | --- | 1.0 | μAdc |
| Collector-Base Cutoff Current $V_{CB} = 90\text{ Vdc}$ | 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 $V_{CB} = 2.0 \text{ Vdc}, I_E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$ | C_{ibo} | - - - | 1,000 | pF |
| SAFE OPERATING AREA | | | | |
| DC Tests: | $T_C = +25 \text{ }^\circ\text{C}, 1 \text{ Cycle}, t = 0.5 \text{ s}$ | | | |
| 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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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.