

## PNP HIGH POWER SILICON TRANSISTOR

Qualified per MIL-PRF-19500/621

### Devices

**2N7369**

### Qualified Level

**JAN  
JANTX  
JANTXV**

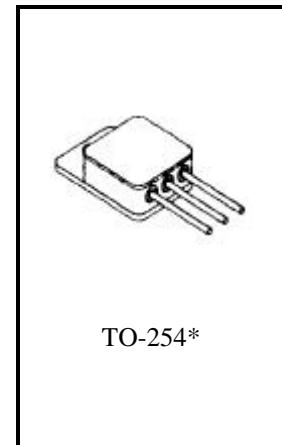
### MAXIMUM RATINGS

| Ratings  | Symbol         | Value       | Units       |
|--|----------------|-------------|-------------|
| Collector-Emitter Voltage                          | $V_{CEO}$      | 80          | Vdc         |
| Collector-Base Voltage                             | $V_{CBO}$      | 80          | Vdc         |
| Emitter-Base Voltage                               | $V_{EBO}$      | 7.0         | Vdc         |
| Base Current                                       | $I_B$          | 4.0         | Adc         |
| Collector Current                                  | $I_C$          | 10          | Adc         |
| Total Power Dissipation @ $T_C = +25^{\circ}C$ (1) | $P_T$          | 115         | W           |
| Operating & Storage Junction Temperature Range     | $T_J, T_{stg}$ | -65 to +200 | $^{\circ}C$ |

### THERMAL CHARACTERISTICS

| Characteristics                      | Symbol          | Max. | Unit          |
|--------------------------------------|-----------------|------|---------------|
| Thermal Resistance, Junction-to-Case | $R_{\theta JC}$ | 1.5  | $^{\circ}C/W$ |

1) Derate linearly 0.657 W/ $^{\circ}C$  for  $T_C > 25^{\circ}C$



\*See appendix A for package outline

### ELECTRICAL CHARACTERISTICS ( $T_C = 25^{\circ}C$ unless otherwise noted)

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

### OFF CHARACTERISTICS

|   |                |    |     |      |
|---|----------------|----|-----|------|
| Collector-Emitter Breakdown Voltage<br>$I_C = 0.2$ Adc                    | $V_{CEO(sus)}$ | 80 |     | Vdc  |
| Collector-Emitter Cutoff Current<br>$V_{CE} = 70$ Vdc                     | $I_{CES}$      |    | 5.0 | mAdc |
| Collector-Emitter Cutoff Current<br>$V_{CE} = 80$ Vdc, $V_{BE} = 1.5$ Vdc | $I_{CEX}$      |    | 5.0 | mAdc |
| Emitter-Base Cutoff Current<br>$V_{EB} = 7.0$ Vdc                         | $I_{EBO}$      |    | 5.0 | mAdc |

**2N7369 JAN SERIES**

**ELECTRICAL CHARACTERISTICS (con't)**

| Characteristics | Symbol | Min. | Max. | Unit |
|-----------------|--------|------|------|------|
|-----------------|--------|------|------|------|

**ON CHARACTERISTICS <sup>(2)</sup>**

|  |               |          |            |     |
|--|---------------|----------|------------|-----|
| Forward-Current Transfer Ratio<br>$I_C = 1.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$<br>$I_C = 3.0 \text{ Adc}, V_{CE} = 2.0 \text{ Vdc}$ | $h_{FE}$      | 50<br>30 | 175<br>140 |     |
| Collector-Emitter Saturation Voltage<br>$I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$   | $V_{CE(sat)}$ |          | 1.0        | Vdc |
| Base-Emitter Saturation Voltage<br>$I_C = 5.0 \text{ Adc}, I_B = 0.5 \text{ Adc}$  | $V_{BE(sat)}$ |          | 1.5        | Vdc |

**DYNAMIC CHARACTERISTICS**

|   |            |     |     |    |
|---|------------|-----|-----|----|
| Magnitude of Common Emitter Small-Signal Short-Circuit<br>Forward Current Transfer Ratio<br>$I_C = 0.5 \text{ Adc}, V_{CE} = 10 \text{ Vdc}, f = 1.0 \text{ MHz}$ | $ h_{fe} $ | 4.0 | 20  |    |
| Output Capacitance<br>$V_{CB} = 10 \text{ Vdc}, E = 0, 100 \text{ kHz} \leq f \leq 1.0 \text{ MHz}$   | $C_{obo}$  |     | 500 | pF |

**SAFE OPERATING AREA**

|  |
|--|
| <p><b>DC Tests</b><br/> <math>T_C = +25^{\circ}\text{C}, 1 \text{ Cycle}, t \geq 1.0 \text{ s}</math><br/> <b>Test 1</b><br/> <math>V_{CE} = 11.5 \text{ Vdc}, I_C = 10 \text{ Adc}</math><br/> <b>Test 2</b><br/> <math>V_{CE} = 45 \text{ Vdc}, I_C = 2.5 \text{ Adc}</math><br/> <b>Test 3</b><br/> <math>V_{CE} = 60 \text{ Vdc}, I_C = 0.9 \text{ Adc}</math></p> |
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(2) Pulse Test: Pulse Width = 300 $\mu$ s, Duty Cycle  $\leq$  2.0%.