

PZTA96ST1G

High Voltage Transistor

PNP Silicon

Features

- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|-----------|-------------|------------------|
| Collector-Emitter Voltage | V_{CEO} | -450 | Vdc |
| Collector-Base Voltage | V_{CBO} | -450 | Vdc |
| Emitter-Base Voltage | V_{EBO} | -5.0 | Vdc |
| Collector Current | I_C | -500 | mAdc |
| Total Power Dissipation Up to $T_A = 25^\circ\text{C}$ (Note 1) | P_D | 1.5 | W |
| Storage Temperature Range | T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

1. Device mounted on a glass epoxy printed circuit board 1.575 in. x 1.575 in. x 0.059 in.; mounting pad for the collector lead min. 0.93 in².

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Max | Unit |
|--|-----------------|------|------------------|
| Thermal Resistance, Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 83.3 | $^\circ\text{C}$ |

2. Device mounted on a glass epoxy printed circuit board 1.575 in. x 1.575 in. x 0.059 in.; mounting pad for the collector lead min. 0.93 in².

ELECTRICAL CHARACTERISTICS (Note 3)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

OFF CHARACTERISTICS

| | | | | |
|---|---------------|------|------|-----------|
| Collector-Emitter Breakdown Voltage ($I_C = -1.0$ mAdc, $I_B = 0$) | $V_{(BR)CEO}$ | -450 | - | Vdc |
| Collector-Emitter Breakdown Voltage ($I_C = -100$ μ Adc, $I_E = 0$) | $V_{(BR)CBO}$ | -450 | - | Vdc |
| Emitter-Base Breakdown Voltage ($I_E = -10$ μ Adc, $I_C = 0$) | $V_{(BR)EBO}$ | -5.0 | - | Vdc |
| Collector-Base Cutoff Current ($V_{CB} = -400$ Vdc, $I_E = 0$) | I_{CBO} | - | -0.1 | μ Adc |
| Emitter-Base Cutoff Current ($V_{BE} = -4.0$ Vdc, $I_C = 0$) | I_{EBO} | - | -0.1 | μ Adc |

ON CHARACTERISTICS

| | | | | |
|---|--------------------------------|----|--------------|-----|
| DC Current Gain (Note 4) ($I_C = -10$ mAdc, $V_{CE} = -10$ Vdc) | h_{FE} | 50 | 150 | - |
| Saturation Voltages ($I_C = -20$ mAdc, $I_B = -2.0$ mAdc) ($I_C = -20$ mAdc, $I_B = -2.0$ mAdc) | $V_{CE(sat)}$ $V_{BE(sat)}$ | - | -0.6 -1.0 | Vdc |

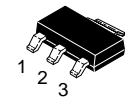
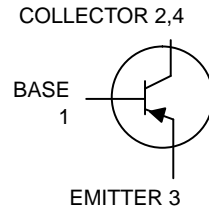
3. $T_A = 25^\circ\text{C}$ unless otherwise noted.

4. Pulse Test: Pulse Width ≤ 300 μ s; Duty Cycle = 2.0%.



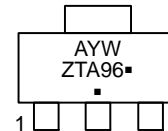
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SOT-223 (TO-261)
CASE 318E
STYLE 1

MARKING DIAGRAM



A = Assembly Location
Y = Year
W = Work Week
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|------------|-------------------|------------------|
| PZTA96ST1G | SOT-223 (Pb-Free) | 1000/Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

PZTA96ST1G

TYPICAL CHARACTERISTICS

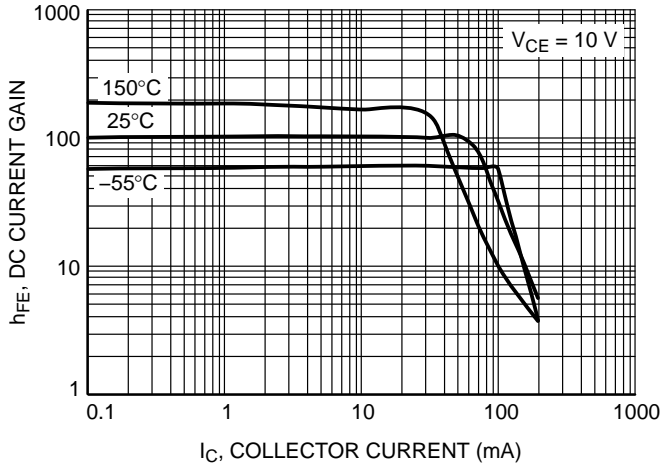


Figure 1. DC Current Gain

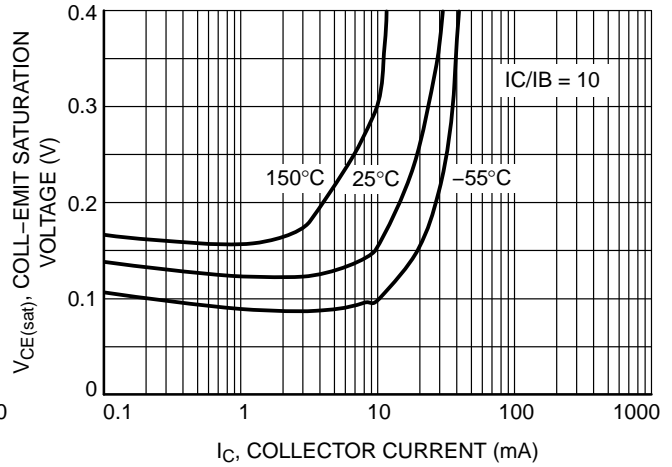


Figure 2. Collector-Emitter Saturation Voltage

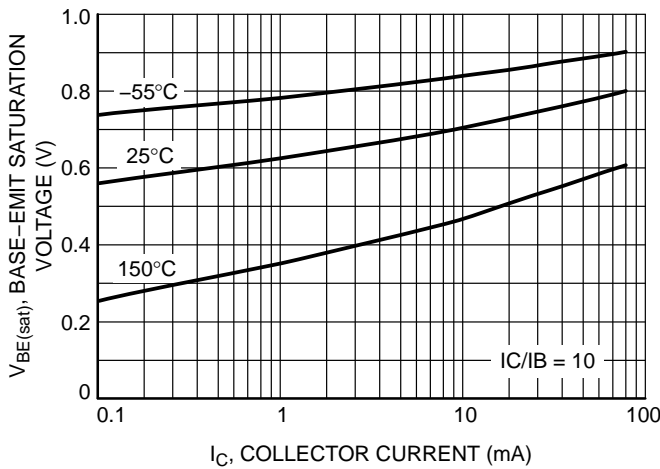


Figure 3. Base-Emitter Saturation Voltage

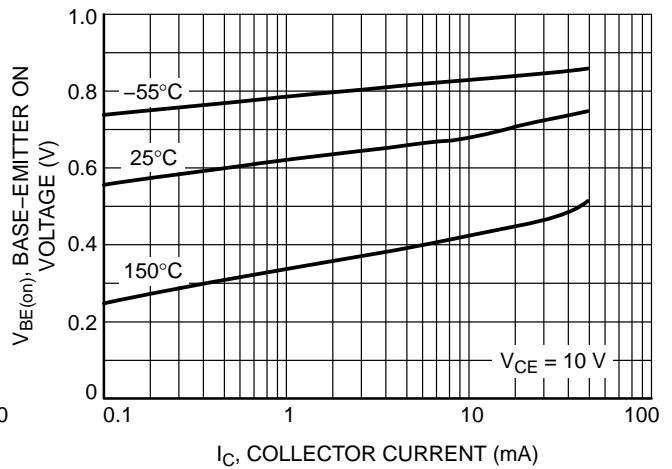


Figure 4. Base-Emitter "On" Voltage

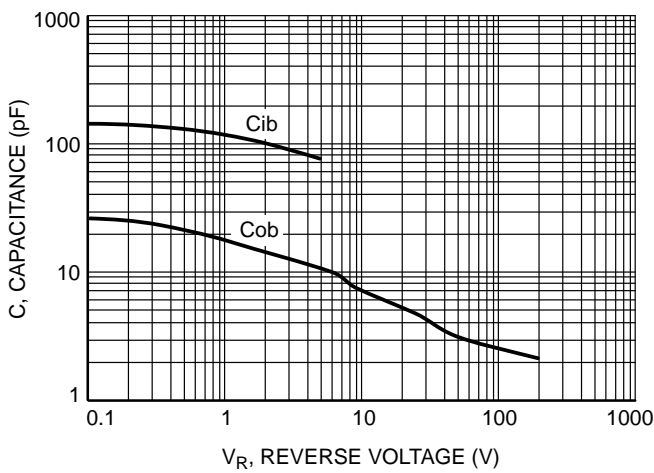


Figure 5. Capacitances

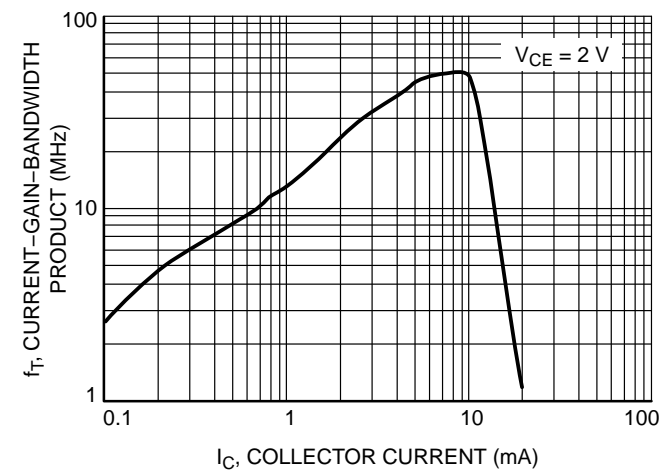
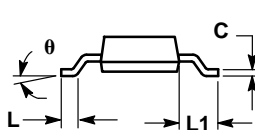
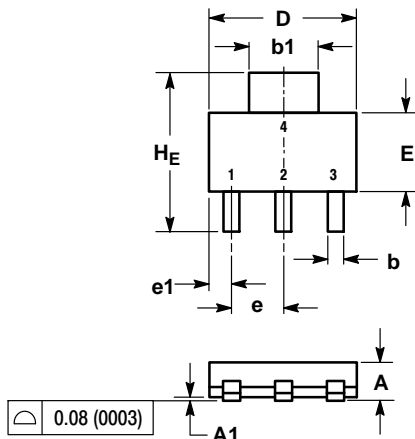


Figure 6. Current-Gain-Bandwidth Product

PZTA96ST1G

PACKAGE DIMENSIONS

SOT-223 (TO-261)
CASE 318E-04
ISSUE N



NOTES:

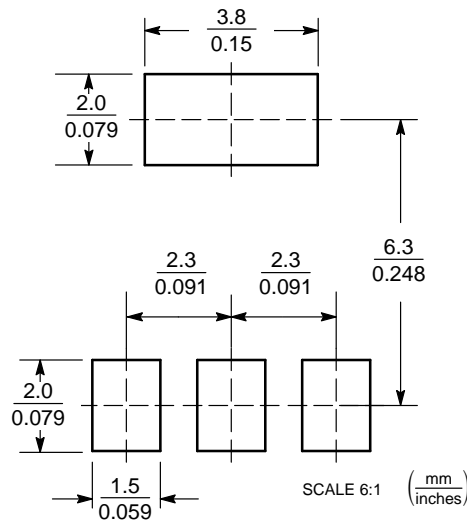
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: INCH.

| DIM | MILLIMETERS | | | INCHES | | |
|-------|-------------|------|------|--------|-------|-------|
| | MIN | NOM | MAX | MIN | NOM | MAX |
| A | 1.50 | 1.63 | 1.75 | 0.060 | 0.064 | 0.068 |
| A1 | 0.02 | 0.06 | 0.10 | 0.001 | 0.002 | 0.004 |
| b | 0.60 | 0.75 | 0.89 | 0.024 | 0.030 | 0.035 |
| b1 | 2.90 | 3.06 | 3.20 | 0.115 | 0.121 | 0.126 |
| c | 0.24 | 0.29 | 0.35 | 0.009 | 0.012 | 0.014 |
| D | 6.30 | 6.50 | 6.70 | 0.249 | 0.256 | 0.263 |
| E | 3.30 | 3.50 | 3.70 | 0.130 | 0.138 | 0.145 |
| e | 2.20 | 2.30 | 2.40 | 0.087 | 0.091 | 0.094 |
| e1 | 0.85 | 0.94 | 1.05 | 0.033 | 0.037 | 0.041 |
| L | 0.20 | --- | --- | 0.008 | --- | --- |
| L1 | 1.50 | 1.75 | 2.00 | 0.060 | 0.069 | 0.078 |
| HE | 6.70 | 7.00 | 7.30 | 0.264 | 0.276 | 0.287 |
| theta | 0° | --- | 10° | 0° | --- | 10° |

STYLE 1:

- PIN 1: BASE
- 2: COLLECTOR
- 3: EMITTER
- 4: COLLECTOR

SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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