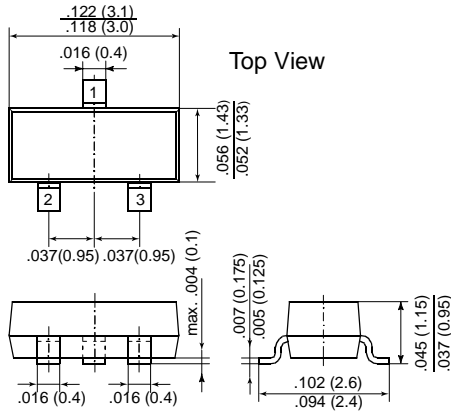


MMBTA56

Small Signal Transistors (PNP)

SOT-23



Dimensions in inches and (millimeters)

Pin configuration

1 = Base, 2 = Emitter, 3 = Collector.

FEATURES

- ◆ PNP Silicon Epitaxial Planar Transistor for switching and amplifier applications.
- ◆ As complementary type, the NPN transistor MMBTA06 is recommended.
- ◆ This transistor is also available in the TO-92 case with the type designation MPSA56.



MECHANICAL DATA

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Marking code

2GM

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| | SYMBOL | VALUE | UNIT |
|-----------------------------------------------|-----------------|------------------------------------------|------|
| Collector-Base Voltage | $-V_{CBO}$ | 80 | V |
| Collector-Emitter Voltage | $-V_{CEO}$ | 80 | V |
| Emitter-Base Voltage | $-V_{EBO}$ | 4.0 | V |
| Collector Current | $-I_C$ | 500 | mA |
| Power Dissipation at $T_A = 25^\circ\text{C}$ | P_{tot} | 225 ⁽¹⁾ 300 ⁽²⁾ | mW |
| Thermal Resistance Junction to Ambient Air | $R_{\theta JA}$ | 560 ⁽¹⁾ | K/W |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_s | - 55 to +150 | °C |

¹⁾ Device on fiberglass substrate, see layout

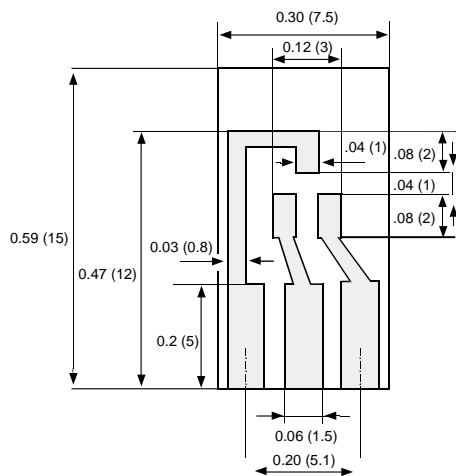
²⁾ Device on alumina substrate.

MMBTA56

ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| | SYMBOL | MIN. | .MAX. | UNIT |
|-------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------|------------|--------|
| Collector-Emitter Breakdown Voltage at $-I_C = 1 \text{ mA}$, $I_B = 0 \text{ mA}$ | $-V_{BR}(CEO)$ | 80 | – | V |
| Emitter-Base Breakdown Voltage at $I_E = 100 \text{ mA}$, $I_C = 0$ | $-V_{(BR)}EBO$ | 4.0 | – | V |
| Collector-Emitter Cutoff Current $-V_{CE} = 60 \text{ V}$, $-I_B = 0$ | $-I_{CES}$ | – | 100 | nA |
| Collector-Base Cutoff Current $-V_{CB} = 80 \text{ V}$, $I_E = 0$ | $-I_{CBO}$ | – | 100 | nA |
| Collector Saturation Voltage at $-I_C = 100 \text{ mA}$, $-I_B = 10 \text{ mA}$ | $-V_{CEsat}$ | – | 0.25 | V |
| Base-Emitter On Voltage at $-I_C = 100 \text{ mA}$, $-I_B = 10 \text{ mA}$ at $-I_C = 50 \text{ mA}$, $-I_B = 5 \text{ mA}$ | $-V_{BE}(on)$ $-V_{BE}(on)$ | – – | 1.2 1.2 | V V |
| DC Current Gain at $V_{CE} = 1 \text{ V}$, $-I_C = 10 \text{ mA}$ at $V_{CE} = 1 \text{ V}$, $-I_C = 100 \text{ mA}$ | h_{FE} h_{FE} | 100 100 | – – | – – |
| Gain-Bandwidth Product at $V_{CE} = 1 \text{ V}$, $I_C = 100 \text{ mA}$, $f = 100 \text{ MHz}$ | f_T | 50 | – | MHz |



Layout for R_{thJA} test

Thickness: Fiberglass 0.059 in (1.5 mm)

Copper leads 0.012 in (0.3 mm)