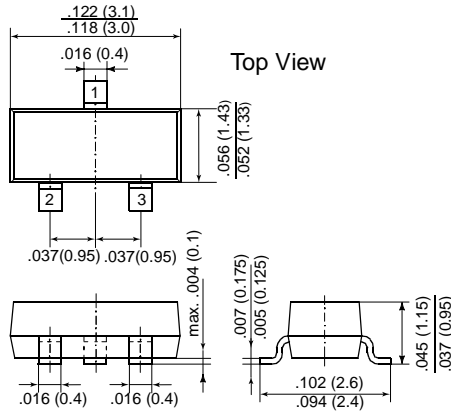


MMBTA06

Small Signal Transistors (NPN)

SOT-23



Dimensions in inches and (millimeters)

Pin configuration

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

FEATURES

- ◆ NPN Silicon Epitaxial Planar Transistor for switching and amplifier applications.
- ◆ As complementary type, the PNP transistor MMBTA56 is recommended.
- ◆ This transistor is also available in the TO-92 case with the type designation MPSA06.



MECHANICAL DATA

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Marking code: 1GM

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| | SYMBOL | VALUE | UNIT |
|---|------------------|--|------|
| Collector-Base Voltage | V _{CB0} | 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 °C | P _{tot} | 255 ⁽¹⁾ 300 ⁽²⁾ | mW |
| Thermal Resistance Junction to Ambient Air | R _{θJA} | 560 ⁽¹⁾ | K/W |
| Junction Temperature | T _j | 150 | °C |
| Storage Temperature Range | T _s | -65 to +150 | °C |

¹⁾Device on fiberglass substrate, see layout

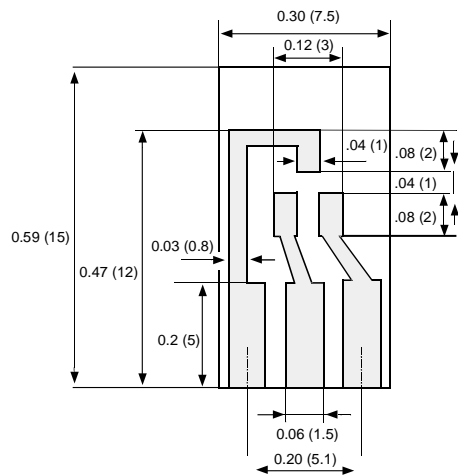
²⁾Device on alumina substrate

MMBTA06

ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified

| | SYMBOL | MIN. | .MAX. | UNIT |
|--|----------------------|------------|--------|--------|
| Collector-Emitter Breakdown Voltage at $I_C = 1 \text{ mA}$, $I_B = 0$ | $V_{(BR)CEO}$ | 80 | – | V |
| Emitter-Base Breakdown Voltage at $I_E = 100 \text{ } \mu\text{A}$, $I_C = 0$ | $V_{(BR)EBO}$ | 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 $I_C = 10 \text{ mA}$, $I_B = 1 \text{ mA}$ | $V_{BE(on)}$ | – | 1.2 | 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 $V_{CE} = 2 \text{ V}$, $I_C = 10 \text{ mA}$, $f = 100 \text{ MHz}$ | f_T | 100 | – | MHz |



Layout for R_{thJA} test

Thickness: Fiberglass 0.059 in (1.5 mm)

Copper leads 0.012 in (0.3 mm)