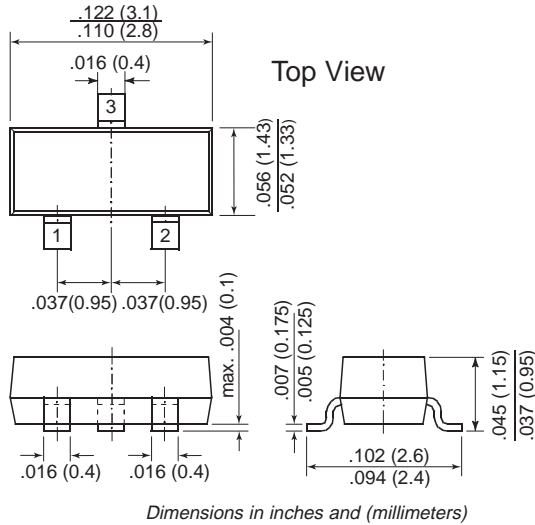


Small Signal Transistors (NPN)



New Product

SOT-23



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.

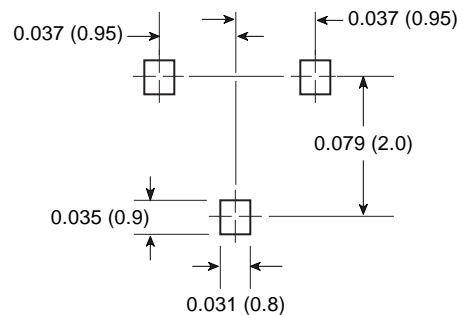
Mechanical Data

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Marking Code: 1GM

Mounting Pad Layout SOT-23



Maximum Ratings and Thermal Characteristics (T_A = 25°C unless otherwise noted)

Parameter	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 _{SB} = 50 °C	P _{tot}	255 ¹⁾ 300 ²⁾	mW
Thermal Resistance Junction to Ambient Air	R _{θJA}	560 ¹⁾	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-65 to +150	°C

Note: (1) Device on fiberglass substrate, see layout on third page.
 (2) Device on alumina substrate.

Small Signal Transistors (NPN)

Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1 \text{ mA}, I_B = 0$	80	—	—	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100 \mu\text{A}, I_C = 0$	4.0	—	—	V
Collector-Emitter Cutoff Current	I_{CES}	$V_{CE} = 60 \text{ V}, I_B = 0$	—	—	100	nA
Collector-Base Cutoff Current	I_{CBO}	$V_{CB} = 80 \text{ V}, I_E = 0$	—	—	100	nA
Collector Saturation Voltage	V_{CEsat}	$I_C = 100 \text{ mA}, I_B = 10 \text{ mA}$	—	—	0.25	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C = 10 \text{ mA}, I_B = 1 \text{ mA}$	—	—	1.2	V
DC Current Gain	h_{FE}	$V_{CE} = 1 \text{ V}, I_C = 10 \text{ mA}$ $V_{CE} = 1 \text{ V}, I_C = 100 \text{ mA}$	100 100	— —	— —	— —
Gain-Bandwidth Product	f_T	$V_{CE} = 2 \text{ V}, I_C = 10 \text{ mA}$ $f = 100 \text{ MHz}$	100	—	—	MHz

Note:

(1) Device on fiberglass substrate, see layout on next page

Layout for $R_{\theta JA}$ test

Thickness: Fiberglass 0.059 in. (1.5 mm)
Copper leads 0.012 in. (0.3 mm)

