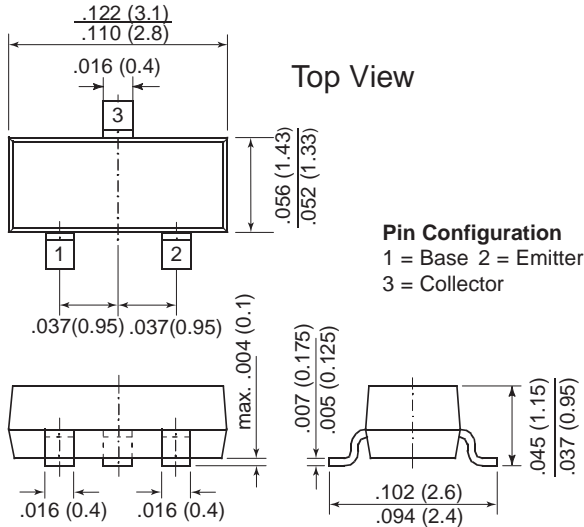




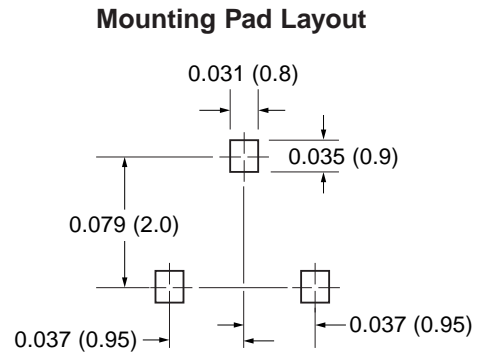
Small Signal Transistors (NPN)



TO-236AB (SOT-23)



Dimensions in inches and (millimeters)



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
- Packaging Codes/Options:**
E8/10K per 13" reel (8mm tape), 30K/box
E9/3K per 7" reel (8mm tape), 30K/box

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

Parameter	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}	277 ⁽¹⁾ 300 ⁽²⁾	mW
Thermal Resistance Junction to Ambient Air	R _{θJA}	450 ⁽¹⁾	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature Range	T _s	-65 to +150	°C

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

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	V _{(BR)CBO}	I _C = 100μA, I _E = 0	80	—	—	V
Collector-Emitter Breakdown Voltage	V _{(BR)CEO}	I _C = 1mA, I _B = 0	80	—	—	V
Emitter-Base Breakdown Voltage	V _{(BR)EBO}	I _E = 100μA, I _C = 0	4.0	—	—	V
Collector-Emitter Cutoff Current	I _{CES}	V _{CE} = 60V, I _B = 0	—	—	100	nA
Collector-Base Cutoff Current	I _{CBO}	V _{CB} = 80V, I _E = 0	—	—	100	nA
Collector Saturation Voltage	V _{CEsat}	I _C = 100mA, I _B = 10mA	—	—	0.25	V
Base-Emitter On Voltage	V _{BE(on)}	I _C = 100mA, V _{CE} = 1V	—	—	1.2	V
DC Current Gain	h _{FE}	V _{CE} = 1V, I _C = 10mA V _{CE} = 1V, I _C = 100mA	100 100	— —	— —	— —
Gain-Bandwidth Product	f _T	V _{CE} = 2V, I _C = 10mA f = 100MHz	100	—	—	MHz

Note:

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

Layout for R_{θJA} test

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

