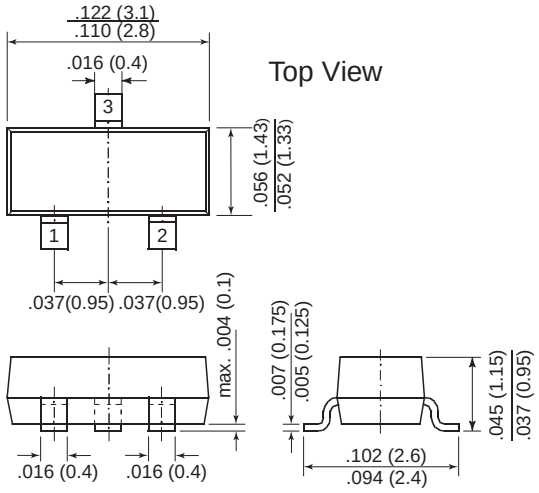
GENERAL SEMICONDUCTOR®

MMBTA06

Small Signal Transistors (NPN)

New Product

SOT-23



Dimensions in inches and (millimeters)

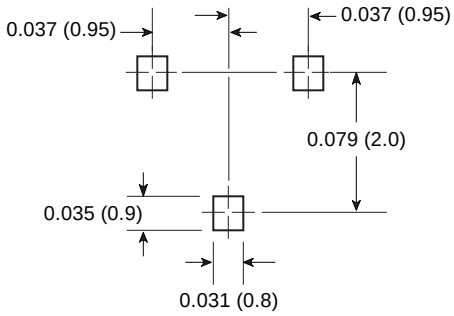
Features

- NPN Silicon Epitaxial Planar Transistor for switching and amplifier applications.
- As complementary type, the PNP tranistor 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 (TA = 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 Ambiant Air	$R_{\theta JA}$	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.

MMBTA06

Small Signal Transistors (NPN)

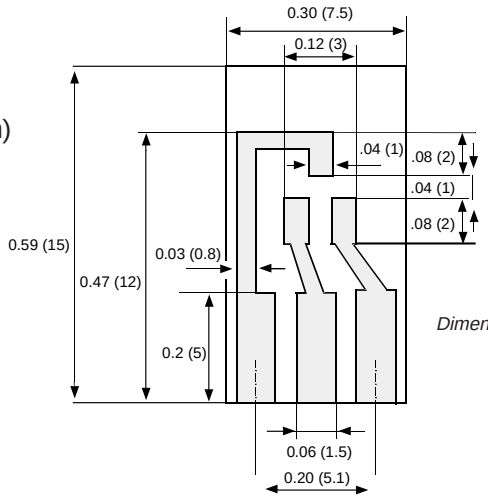
Electrical Characteristics (T_J = 25°C unless otherwise noted)

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



Dimensions in inches (millimeters)