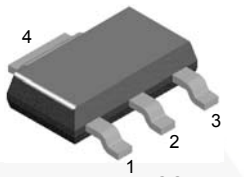
February 2015

BCP56
NPN General-Purpose Amplifier

Description

These devices are designed for general-purpose medium power amplifiers and switches requiring collector currents to 1 A. Sourced from process 39.



SOT-223

1. Base 2.4. Collector 3. Emitter

Ordering Information

Part Number	Marking	Package	Packing Method
BCP56	BCP56	SOT-223 4L	Tape and Reel

Absolute Maximum Ratings[1],[2]

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Value	Unit
V_{CEO}	Collector-Emitter Voltage	80	V
V_{CBO}	Collector-Base Voltage	100	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current - Continuous	1.2	A
T_J, T_{STG}	Operating and Storage Junction Temperature Range	-55 to +150	°C

Notes:

1. These ratings are based on a maximum junction temperature of 150°C.
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operations.

Thermal Characteristics[3]

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Max.	Unit
P_D	Total Power Dissipation	1	W
	Derate Above 25°C	8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	125	°C/W

Note:

3. Device is mounted on FR-4 PCB 36 mm X 18 mm X 1.5 mm; mounting pad for the collector lead minimum 6 cm^2.

Electrical Characteristics

Values are at T_A = 25°C unless otherwise noted.

Symbol	Parameter	Conditions	Min.	Max.	Unit
BV_{CEO}	Collector-Emitter Breakdown Voltage	I_C = 10 mA, I_B = 0	80		V
BV_{CBO}	Collector-Base Breakdown Voltage	I_C = 100 µA, I_E = 0	100		V
BV_{EBO}	Emitter-Base Breakdown Voltage	I_E = 10 µA, I_C = 0	5		V
I_{CBO}	Collector Cut-Off Current	V_{CB} = 30 V, I_E = 0		100	nA
		V_{CB} = 30 V, I_E = 0, T_J = 125°C		10	µA
I_{EBO}	Emitter Cut-Off Current	V_{EB} = 5 V, I_C = 0		10	µA
h_{FE}	DC Current Gain[4]	V_{CE} = 2 V, I_C = 5 mA	25		
		V_{CE} = 2 V, I_C = 150 mA	40	250	
		V_{CE} = 2 V, I_C = 500 mA	25		
V_{CE}(sat)	Collector-Emitter Saturation Voltage[4]	I_C = 500 mA, I_B = 50 mA		0.5	V
V_{BE}(on)	Base-Emitter On Voltage[4]	I_C = 500 mA, V_{CE} = 2 V		1	V

Note:

4. Pulse test: pulse width ≤ 300 µs, duty cycle ≤ 2.0%

Physical Dimensions

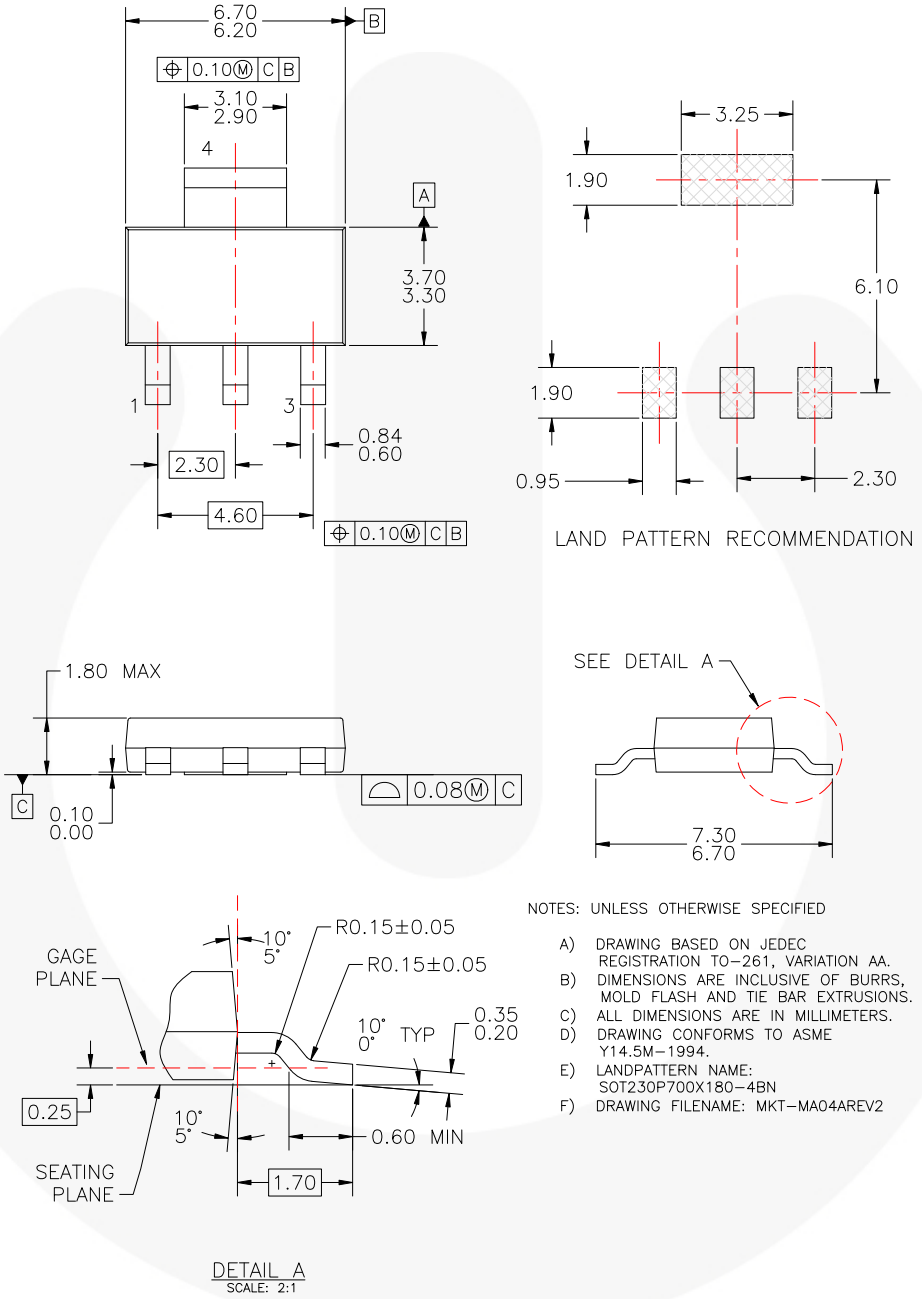


Figure 1. MOLDED PACKAGE, SOT-223, 4-LEAD

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