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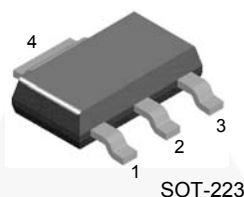
February 2015

## 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.



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<sup>(1),(2)</sup>

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  $T_A = 25^\circ\text{C}$  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	$^\circ\text{C}$

#### Notes:

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

**Thermal Characteristics<sup>(3)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

**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<sup>2</sup>.

**Electrical Characteristics**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

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

**Note:**

4. Pulse test: pulse width  $\leq 300\text{ }\mu\text{s}$ , duty cycle  $\leq 2.0\%$

## Physical Dimensions

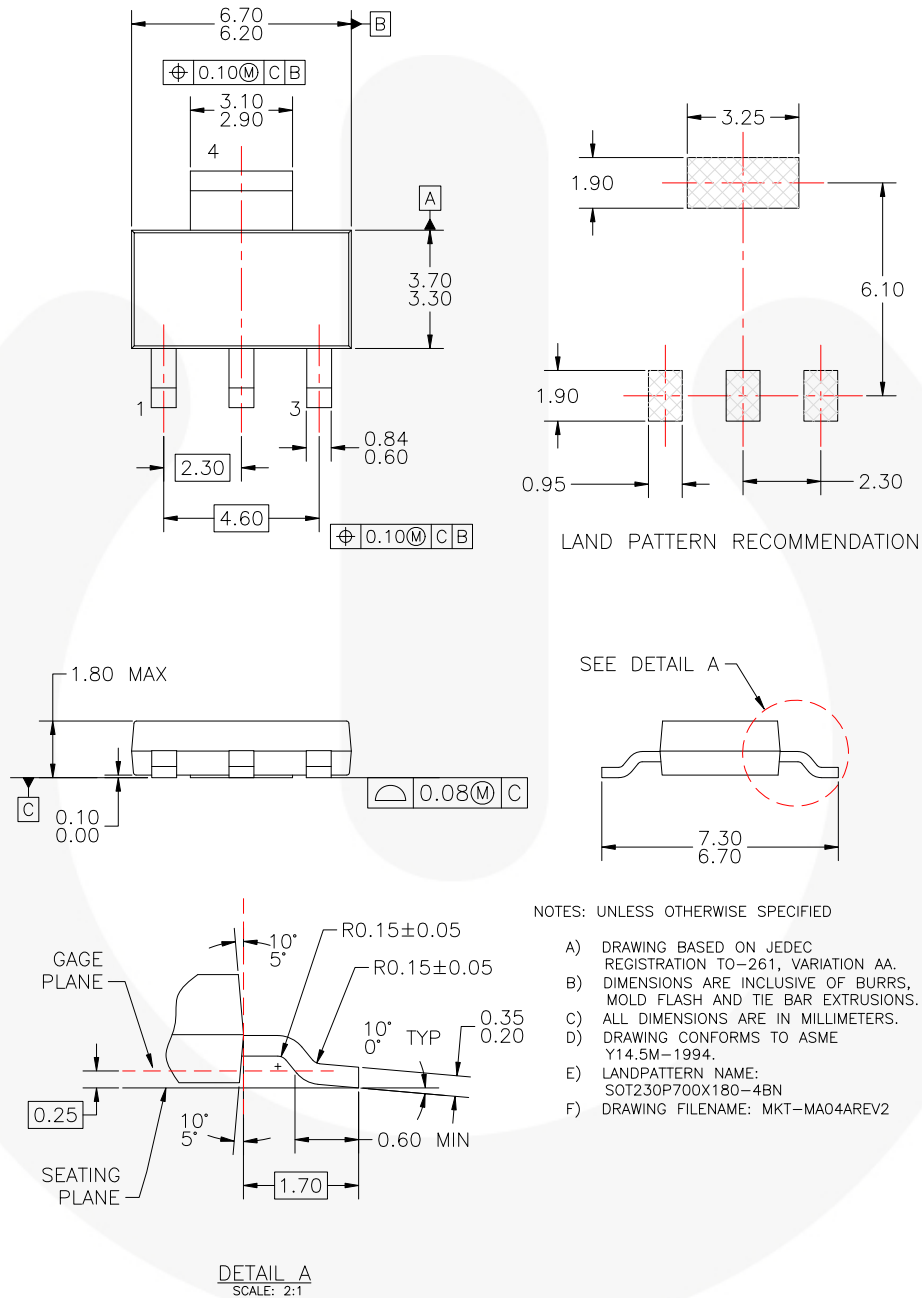


Figure 1. MOLDED PACKAGE, SOT-223, 4-LEAD





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