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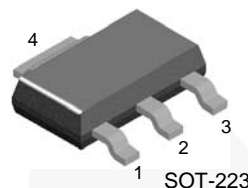
March 2014

BCP53

PNP General-Purpose Amplifier

Description

This device is designed for general-purpose medium-power amplifiers and switching circuits for collector currents to 1.0 A. Sourced from process 79.



1. Base 2,4. Collector 3. Emitter

Ordering Information

Part Number	Marking	Package	Packing Method
BCP53	BCP53	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 $T_A = 25^\circ\text{C}$ 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°C .
2. These are steady-state limits. Fairchild Semiconductor should be consulted on applications involving pulsed or low-duty-cycle operation.

Thermal Characteristics⁽³⁾

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

Symbol	Parameter	Max.	Unit
P_D	Total Device Dissipation	1.5	W
	Derate Above 25°C	12	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	83.3	$^\circ\text{C/W}$

Note:

3. PCB size: FR-4, 76 mm x 114 mm x 1.57 mm (3.0 inch x 4.5 inch x 0.062 inch) with minimum land pattern size.

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	$I_E = -10\text{ }\mu\text{A}, I_C = 0$	-5.0		V
I_{CBO}	Collector-Base Cut-Off Current	$V_{CB} = -30\text{ V}, I_E = 0$		-100	nA
		$V_{CB} = -30\text{ V}, I_E = 0, T_A = 125^\circ\text{C}$		-10	μA
I_{EBO}	Emitter-Base Cut-Off Current	$V_{EB} = -5.0\text{ V}, I_C = 0$		-10	μA
h_{FE}	DC Current Gain	$I_C = -5.0\text{ mA}, V_{CE} = -2.0\text{ V}$	25		
		$I_C = -150\text{ mA}, V_{CE} = -2.0\text{ V}$	40	250	
		$I_C = -500\text{ mA}, V_{CE} = -2.0\text{ V}$	25		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C = -500\text{ mA}, I_B = -50\text{ mV}$		-0.5	V
$V_{BE(on)}$	Base-Emitter On Voltage	$I_C = -500\text{ mA}, V_{CE} = -2.0\text{ V}$		-1.0	V

Physical Dimensions

SOT-223

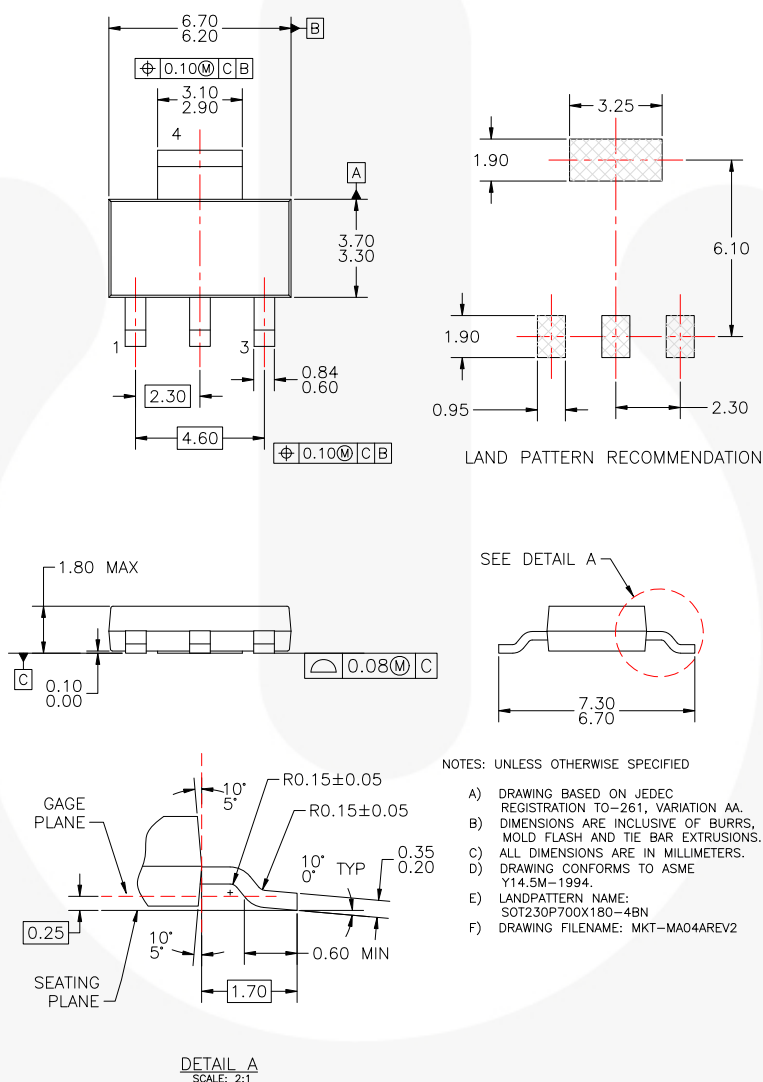


Figure 1. MOLDED PACKAGE, SOT-223, 4 LEAD (ACTIVE)

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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
Obsolete	Not In Production	Datasheet contains specifications on a product that is discontinued by Fairchild Semiconductor. The datasheet is for reference information only.

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