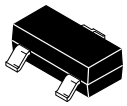
NPN General Purpose Amplifier

BCV71



SOT−23
CASE 318

Description

This device is designed for general purpose applications at collector currents to 300 mA. Sourced from process 10.

ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted.) (Notes 1, 2)

Symbol	Parameter	Value	Unit
V_{CEO}	Collector−Emitter Voltage	60	V
V_{CBO}	Collector−Base Voltage	80	V
V_{EBO}	Emitter−Base Voltage	5.0	V
I_C	Collector Current − Continuous	500	mA
T_J, T_{STG}	Operating and Storage Junction Temperature Range	−55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

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

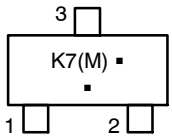
THERMAL CHARACTERISTICS

(T_A = 25°C unless otherwise noted.) (Note 3)

Symbol	Parameter	Max	Unit
P_D	Total Device Dissipation	350	mW
	Derate Above 25°C	2.8	mW/°C
$R_{\theta JA}$	Thermal Resistance, Junction−to−Ambient	357	°C/W

3. Device mounted on FR−4PCB 40 mm x 40 mm x 1.5 mm.

MARKING DIAGRAM



1. Base
2. Emitter
3. Collector

K7 = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

Device	Package	Shipping
BCV71	SOT−23 (Pb−Free, Halide Free)	3,000 / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification Brochure, BRD8011/D.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
$V_{(BR)CBO}$	Collector−Base Breakdown Voltage	I_C = 10 μA, I_E = 0	80	−	−	V
$V_{(BR)CEO}$	Collector−Emitter Breakdown Voltage	I_C = 2 mA, I_B = 0	60	−	−	V
$V_{(BR)EBO}$	Emitter−Base Breakdown Voltage	I_E = 10 μA, I_C = 0	5.0	−	−	V
I_{CBO}	Collector Cut−Off Current	V_{CB} = 20 V, I_E = 0 V_{CB} = 20 V, I_E = 0, T_A = 100°C	− −	− −	100 10	nA μA
ON CHARACTERISTICS						
h_{FE}	DC Current Gain	I_C = 2.0 mA, V_{CE} = 5.0 V	110	−	220	
$V_{CE(sat)}$	Collector−Emitter Saturation Voltage	I_C = 10 mA, I_B = 0.5 mA	−	−	0.25	V
$V_{BE(on)}$	Base−Emitter On Voltage	I_C = 2.0 mA, V_{CE} = 5.0 V	0.55	−	0.70	V

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:
Technical Library: www.onsemi.com/design/resources/technical−documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support
For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales