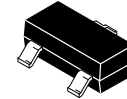


# NPN General Purpose Amplifier

## 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

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

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.

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

### THERMAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$  unless otherwise noted.) (Note 3)

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

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

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted.)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
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#### OFF CHARACTERISTICS

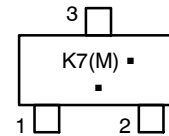
$V_{(BR)CBO}$	Collector–Base Breakdown Voltage	$I_C = 10\ \mu\text{A}, I_E = 0$	80	–	–	V
$V_{(BR)CEO}$	Collector–Emitter Breakdown Voltage	$I_C = 2\ \text{mA}, I_B = 0$	60	–	–	V
$V_{(BR)EBO}$	Emitter–Base Breakdown Voltage	$I_E = 10\ \mu\text{A}, I_C = 0$	5.0	–	–	V
$I_{CBO}$	Collector Cut–Off Current	$V_{CB} = 20\ \text{V}, I_E = 0$ $V_{CB} = 20\ \text{V}, I_E = 0, T_A = 100^\circ\text{C}$	–	–	100 10	nA $\mu\text{A}$

#### ON CHARACTERISTICS

$h_{FE}$	DC Current Gain	$I_C = 2.0\ \text{mA}, V_{CE} = 5.0\ \text{V}$	110	–	220	
$V_{CE(sat)}$	Collector–Emitter Saturation Voltage	$I_C = 10\ \text{mA}, I_B = 0.5\ \text{mA}$	–	–	0.25	V
$V_{BE(on)}$	Base–Emitter On Voltage	$I_C = 2.0\ \text{mA}, V_{CE} = 5.0\ \text{V}$	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.

### 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.

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