



New Product

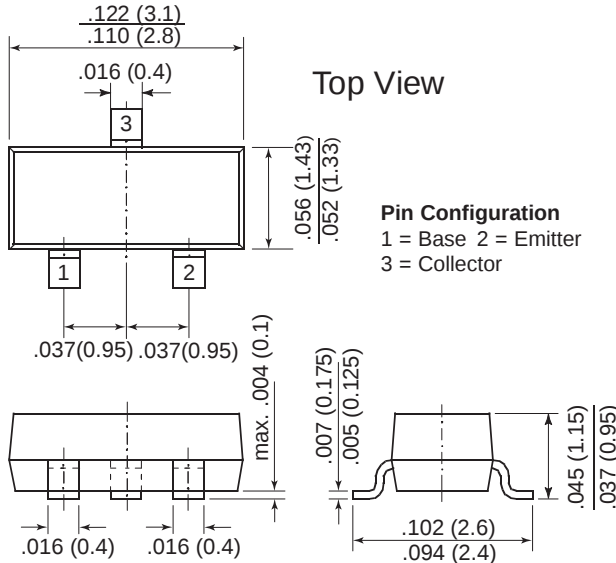
BCX71 Series

Vishay Semiconductors
formerly General Semiconductor

Small Signal Transistors (PNP)

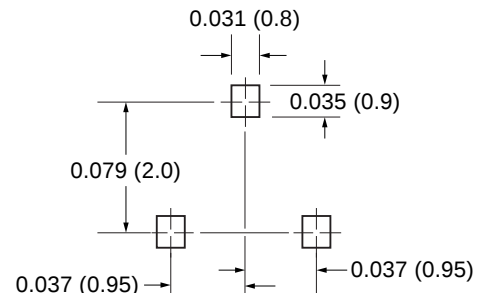


TO-236AB (SOT-23)



Dimensions in inches and (millimeters)

Mounting Pad Layout



Features

- PNP Silicon Epitaxial Planar Transistors for switching and AF amplifier applications.
- Suited for low level, low noise, low frequency applications in hybrid circuits.
- Low current, low voltage.
- As complementary types, BCX70 Series NPN transistors are recommended.

Mechanical Data

Case: SOT-23 Plastic Package

Weight: approx. 0.008g

Marking BCX71G = BG

Code: BCX71H = BH

BCX71J = BJ

BCX71K = BK

Packaging Codes/Options:

E8/10K per 13" reel (8mm tape), 30K/box

E9/3K per 7" reel (8mm tape), 30K/box

Maximum Ratings & Thermal Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Collector-Base Voltage	$-V_{CBO}$	45	V
Collector-Emitter Voltage	$-V_{CEO}$	45	V
Emitter-Base Voltage	$-V_{EBO}$	5.0	V
Collector Current	$-I_C$	200	mA
Peak Base Current	$-I_B$	50	mA
Power Dissipation	P_{tot}	250	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	500 ⁽¹⁾	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

Note: (1) Mounted on FR-4 printed-circuit board.

Electrical Characteristics (T_J = 25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
DC Current Gain	BCX71G	—V _{CE} = 5 V, —I _C = 10 μA	—	—	—	—
	BCX71H	—V _{CE} = 5 V, —I _C = 10 μA	30	—	—	
	BCX71J	—V _{CE} = 5 V, —I _C = 10 μA	40	—	—	
	BCX71K	—V _{CE} = 5 V, —I _C = 10 μA	100	—	—	
	BCX71G	—V _{CE} = 5 V, —I _C = 2 mA	120	—	220	
	BCX71H	—V _{CE} = 5 V, —I _C = 2 mA	180	—	310	
	BCX71J	—V _{CE} = 5 V, —I _C = 2 mA	250	—	460	
	BCX71K	—V _{CE} = 5 V, —I _C = 2 mA	380	—	630	
	BCX71G	—V _{CE} = 1 V, —I _C = 50 mA	60	—	—	
	BCX71H	—V _{CE} = 1 V, —I _C = 50 mA	80	—	—	
	BCX71J	—V _{CE} = 1 V, —I _C = 50 mA	100	—	—	
	BCX71K	—V _{CE} = 1 V, —I _C = 50 mA	110	—	—	
Collector-Emitter Saturation Voltage	—V _{CEsat}	—I _C = 10 mA, —I _B = 0.25 mA —I _C = 50 mA, —I _B = 1.25 mA	60 120	— —	250 550	mV
Base-Emitter Saturation Voltage	—V _{BEsat}	—I _C = 10 mA, —I _B = 0.25 mA —I _C = 50 mA, —I _B = 1.25 mA	600 680	— —	850 1050	mV
Base-Emitter Voltage	—V _{BE}	—V _{CE} = 5 V, —I _C = 2 mA —V _{CE} = 5 V, —I _C = 10 μA —V _{CE} = 1 V, —I _C = 50 mA	600 — —	650 550 720	750 — —	mV
Collector Cut-off Current	—I _{CBO}	—V _{CB} = 45 V, V _{EB} = 0 —V _{CB} = 45 V, V _{EB} = 0 T _A = 150°C	— —	— —	20 20	nA μA
Emitter Cut-off Current	—I _{EBO}	—V _{EB} = 4 V, I _C = 0	—	—	20	nA
Gain-Bandwidth Product	f _T	—V _{CE} = 5 V, —I _C = 10 mA f = 100 MHz	100	—	—	MHz
Collector-Base Capacitance	C _{CB}	—V _{CB} = 10 V, f = 1 MHz, I _E = 0	—	4.5	—	pF
Emitter-Base Capacitance	C _{EB}	—V _{CB} = 0.5 V, f = 1 MHz, I _C = 0	—	11	—	pF
Noise Figure	F	—V _{CE} = 5 V, —I _C = 200 μA, R _S = 2 kΩ, f = 100 kHz, B = 200 Hz	—	2	6	dB
Small Signal Current Gain	h _{fe}	—V _{CE} = 5 V, —I _C = 2 mA, f = 1.0 kHz	— — — —	200 260 330 520		
Turn-on Time at R _L = 990Ω (see fig. 1)	t _{on}	—V _{CC} = 10 V, —I _C = 10 mA, —I _{B(on)} = I _{B(off)} = 1 mA	—	85	150	ns
Turn-off Time at R _L = 990Ω (see fig. 1)	t _{off}	—V _{CC} = 10 V, —I _C = 10 mA, —I _{B(on)} = I _{B(off)} = 1 mA	—	480	800	ns

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 Switching Waveforms

