

Features

- Ideally Suited for Automatic Insertion
- Low Current, Low Voltage
- For Switching and AF Amplifier Applications
- Suited for Low Level, Low Noise, Low Frequency Applications in Hybrid Circuits
- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings @ 25°C Unless Otherwise Specified

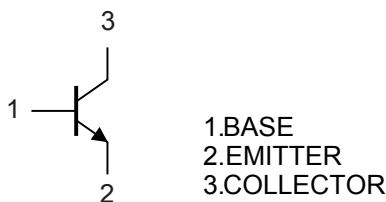
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 500°C/W Junction to Ambient^(Note 2)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Continuous Collector Current	I_C	200	mA
Continuous Base Current	I_B	50	mA
Power Dissipation	P_D	250	mW

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

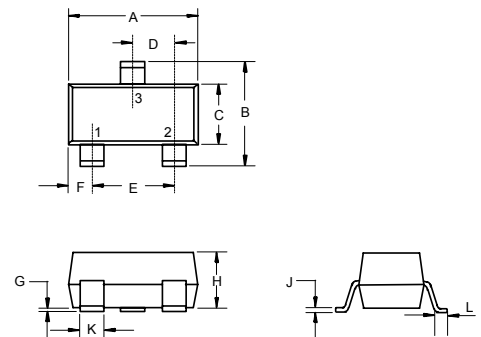
2. Mounted on FR-4 Printed-Circuit Board

Internal Structure



NPN Small Signal Transistor

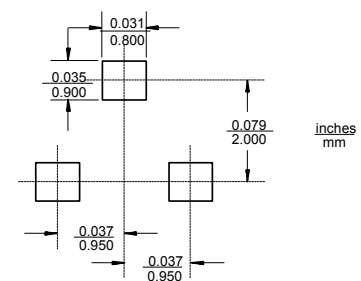
SOT-23



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter		Symbol	Min	Typ	Max	Units	Conditions	
Collector-Base Cutoff Current		I _{CBO}			20	nA	V _{CB} =45V, V _{BE} =0	
					20	μA	V _{CB} =45V, V _{BE} =0, T _A =150°C	
Emitter-Base Cutoff Current		I _{EBO}			20	nA	V _{EB} =4V, I _C =0	
DC Current Gain		h _{FE(1)}	---				V _{CE} =5V, I _C =10μA	
			h _{FE(2)}	120		630		V _{CE} =5V, I _C =2mA
			h _{FE(3)}	50				V _{CE} =1V, I _C =50mA
Collector-Emitter Saturation Voltage		V _{CE(sat)}	50		350	mV	I _C =10mA, I _B =0.25mA	
			100		550	mV	I _C =50mA, I _B =1.25mA	
Base-Emitter Saturation Voltage		V _{BE(sat)}	600		850	mV	I _C =10mA, I _B =0.25mA	
			700		1050	mV	I _C =50mA, I _B =1.25mA	
Base-Emitter Voltage		V _{BE}	550	650	750	mV	V _{CE} =5V, I _C =2mA	
				520			mV	V _{CE} =5V, I _C =10μA
				780			mV	V _{CE} =1V, I _C =50mA
Transition Frequency		f _T	100	250		MHz	V _{CE} =5V, I _C =10mA, f=100MHz	
Collector-Base Capacitance		C _{CB}		2.5		pF	V _{CB} =10V, I _E =0, f=1MHz	
Emitter-Base Capacitance		C _{EB}		8		pF	V _{EB} =0.5V, I _C =0, f=1MHz	
Noise Figure		N _F		2	6	dB	V _{CE} =5V, I _C =0.2mA, f=1KHz, R _s =2KΩ, BW=200Hz	
Small Signal Current Gain	BCX70G	h _{fe}		200			V _{CE} =5V, I _C =2mA, f=1KHz	
	BCX70H			260				
	BCX70J			330				
	BCX70K			520				
Turn-on Time		t _{on}		85	150	ns	V _{CC} =10V, I _C =10mA, R _L =990Ω, I _{B(on)} =-I _{B(off)} =1mA	
Turn-off Time		t _{off}		480	800	ns	V _{CC} =10V, I _C =10mA, R _L =990Ω, I _{B(on)} =-I _{B(off)} =1mA	

Classification of h_{FE}

Rank	BCX70G	BCX70H	BCX70J	BCX70K
Range ₍₁₎	---(min.)	30(min.)	40(min.)	100(min.)
Range ₍₂₎	120-220	180-310	250-460	380-630
Range ₍₃₎	50(min.)	70(min.)	90(min.)	100(min.)
Marking	AG	AH	AJ	AK

Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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