

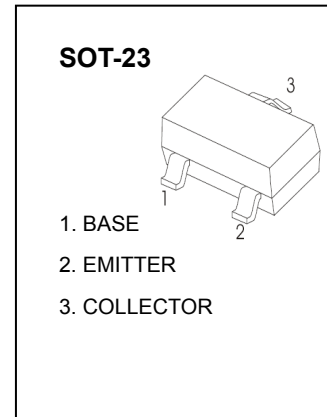
## BCX70J,BCX70K TRANSISTOR (NPN)

### FEATURES

- Low current
- Low voltage

**MARKING : BCX70J: AJ, BCX70K:AK**

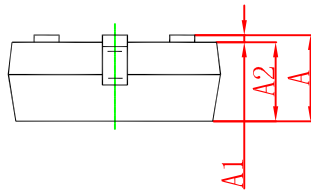
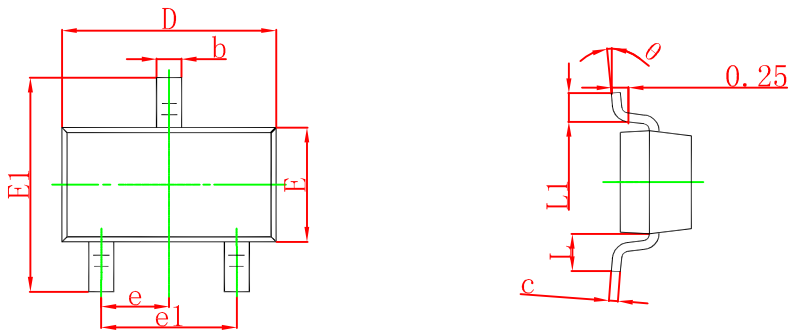
**MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)**



Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	45	V
V <sub>CE0</sub>	Collector-Emitter Voltage	45	V
V <sub>EBO</sub>	Emitter-Base Voltage	5	V
I <sub>C</sub>	Collector Current -Continuous	200	mA
P <sub>C</sub>	Collector Power Dissipation	250	mW
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55-150	°C

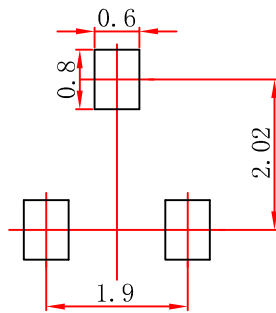
### ELECTRICAL CHARACTERISTICS (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	I <sub>C</sub> =10μA, I <sub>E</sub> =0	45			V
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	I <sub>C</sub> =2mA, I <sub>B</sub> =0	45			V
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	I <sub>E</sub> =1μA, I <sub>C</sub> =0	5			V
Collector cut-off current	I <sub>CES</sub>	V <sub>CE</sub> =45V, V <sub>BE</sub> =0			20	nA
DC current gain	BCX70J	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10μA	30		
		h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	250		460
		h <sub>FE3</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =50mA	90		
DC current gain	BCX70K	h <sub>FE1</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =10μA	100		
		h <sub>FE2</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	380		630
		h <sub>FE3</sub>	V <sub>CE</sub> =1V, I <sub>C</sub> =50mA	100		
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub>	I <sub>C</sub> = 10mA I <sub>B</sub> = 0.25 mA	0.05		0.35	V
	V <sub>CE(sat)2</sub>	I <sub>C</sub> = 50mA I <sub>B</sub> =1.25 mA	0.1		0.55	V
Base -emitter saturation voltage	V <sub>BE(sat)1</sub>	I <sub>C</sub> = 10mA I <sub>B</sub> =-0.25 mA	0.6		0.85	V
	V <sub>BE(sat)2</sub>	I <sub>C</sub> = 50mA I <sub>B</sub> = 1.25 mA	0.7		1.05	V
Base-emitter voltage	V <sub>BE</sub>	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA	0.55		0.75	V
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=1MHz		1.7		pF
Noise Figure	NF	V <sub>CE</sub> =5V, I <sub>C</sub> =200μA, f=1kHz, BW=200Hz, RS=2kΩ			6	dB
Gain-Bandwidth Product	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> =10mA, f=100 MHz	100	250		MHz



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05$  mm.
  3. The pad layout is for reference purposes only.