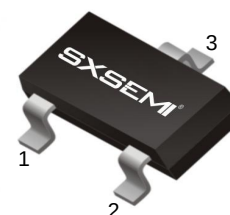


FEATURES

- Low current
- Low voltage

SOT-23



1. BASE
2. EMITTER
3. COLLECTOR

MAXIMUM RATINGS ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

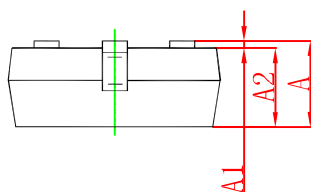
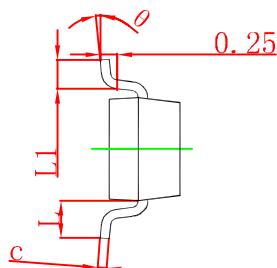
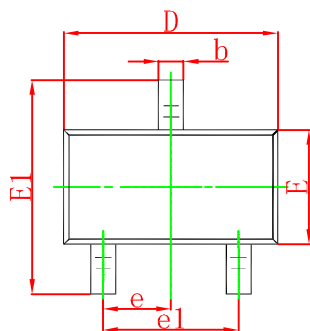
MARKING : BCX70J: AJ, BCX70K:AK

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	45	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	200	mA
P_C	Collector Power Dissipation	250	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55-150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

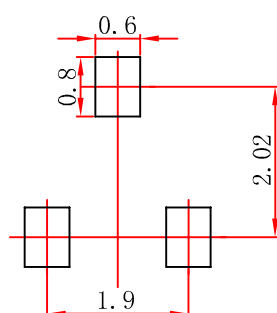
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}, I_E=0$	45			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2\text{mA}, I_B=0$	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=1\mu\text{A}, I_C=0$	5			V
Collector cut-off current	I_{CES}	$V_{CE}=45\text{V}, V_{BE}=0$			20	nA
DC current gain	BCX70J	h_{FE1}	$V_{CE}=5\text{V}, I_C=10\mu\text{A}$	30		
		h_{FE2}	$V_{CE}=5\text{V}, I_C=2\text{mA}$	250	460	
		h_{FE3}	$V_{CE}=1\text{V}, I_C=50\text{mA}$	90		
DC current gain	BCX70K	h_{FE1}	$V_{CE}=5\text{V}, I_C=10\mu\text{A}$	100		
		h_{FE2}	$V_{CE}=5\text{V}, I_C=2\text{mA}$	380	630	
		h_{FE3}	$V_{CE}=1\text{V}, I_C=50\text{mA}$	100		
Collector-emitter saturation voltage		$V_{CE(sat)1}$	$I_C=10\text{mA}, I_B=0.25\text{mA}$	0.05	0.35	V
		$V_{CE(sat)2}$	$I_C=50\text{mA}, I_B=1.25\text{mA}$	0.1	0.55	V
Base -emitter saturation voltage		$V_{BE(sat)1}$	$I_C=10\text{mA}, I_B=-0.25\text{mA}$	0.6	0.85	V
		$V_{BE(sat)2}$	$I_C=50\text{mA}, I_B=1.25\text{mA}$	0.7	1.05	V
Base-emitter voltage	V_{BE}	$V_{CE}=5\text{V}, I_C=2\text{mA}$	0.55		0.75	V
Collector output capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$		1.7		pF
Noise Figure	NF	$V_{CE}=5\text{V}, I_C=200\mu\text{A}, f=1\text{kHz}, BW=200\text{Hz}, R_S=2\text{k}\Omega$			6	dB
Gain-Bandwidth Product	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	100	250		MHz

SOT-23 Package Outline Dimensions



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: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.