

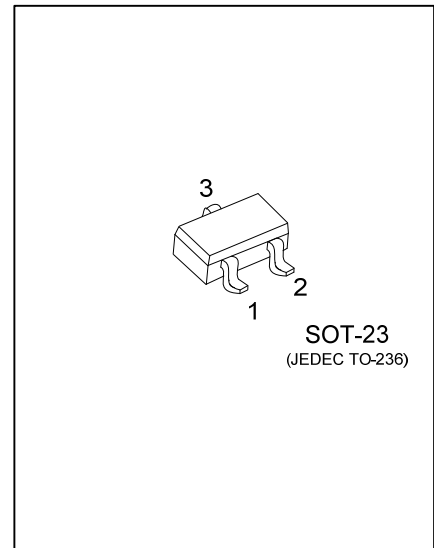


**BCX70**

Preliminary

**NPN EPITAXIAL SILICON TRANSISTOR**

GENERAL PURPOSE  
TRANSISTOR



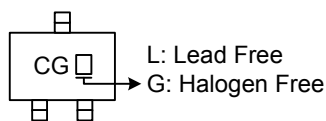
■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BCX70L-AE3-R	BCX70G-AE3-R	SOT-23	B	E	C	Tape Reel

Note: Pin Assignment: B: Base E: Emitter C: Collector

<p>BCX70G-AE3-R</p> <p>(1) Packing Type (2) Package Type (3) Green Package</p>	<p>(1) R: Tape Reel (2) AE3: SOT-23 (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING



■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	45	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Collector Current	$I_C$	200	mA
Collector Power Dissipation	$P_C$	350	mW
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	$\theta_{JA}$	325	$^\circ\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=2.0\text{mA}$ , $I_B=0$	45			V
Emitter-Base Breakdown Voltage	$BV_{EBO}$	$I_E=1.0\mu\text{F}$ , $I_C=0$	5			V
Collector Cut-off Current	$I_{CES}$	$V_{CE}=32\text{V}$ , $V_{BE}=0$			20	nA
Emitter Cut-off Current	$I_{EBO}$	$V_{EB}=4\text{V}$ , $I_C=0$			20	nA
DC Current Gain	$h_{FE}$	$V_{CE}=5\text{V}$ , $I_C=10\mu\text{A}$	100			
		$V_{CE}=5\text{V}$ , $I_C=2.0\text{mA}$	380		630	
		$V_{CE}=1\text{V}$ , $I_C=50\text{mA}$	100			
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=10\text{mA}$ , $I_B=0.25\text{mA}$			0.35	V
		$I_C=50\text{mA}$ , $I_B=1.25\text{mA}$			0.55	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}$ , $I_B=0.25\text{mA}$	0.6		0.85	V
		$I_C=50\text{mA}$ , $I_B=1.25\text{mA}$	0.7		1.05	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C=2.0\text{mA}$ , $V_{CE}=5\text{V}$	0.55		0.75	V
Current Gain Bandwidth Product	$f_T$	$I_C=10\text{mA}$ , $V_{CE}=5\text{V}$ , $f=100\text{MHz}$	125			MHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}$ , $I_E=0$ , $f=1\text{MHz}$			4.5	pF
Noise Figure	NF	$V_{CE}=5\text{V}$ , $I_C=0.2\text{mA}$ , $R_S=2\text{K}\Omega$ $f=1\text{KHz}$			6	dB
Turn On Time	$t_{ON}$	$I_C=10\text{mA}$ , $I_{B1}=1.0\text{mA}$			150	ns
Turn Off Time	$t_{OFF}$	$V_{BB}=3.6\text{V}$ , $I_{B2}=1.0\text{mA}$ , $R_1=R_2=5\text{K}\Omega$ , $R_L=990\Omega$			800	ns

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