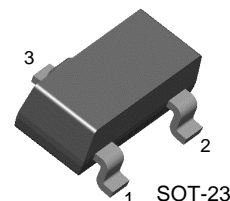


# BCX70K

## General Purpose Transistor



SOT-23  
1. Base 2. Emitter 3. Collector

## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a=25^\circ\text{C}$ unless otherwise noted

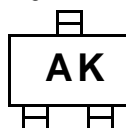
Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	45	V
$V_{CEO}$	Collector-Emitter Voltage	45	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	200	mA
$P_C$	Collector Power Dissipation	350	mW
$T_{STG}$	Storage Temperature	-55 ~ 150	$^\circ\text{C}$

• Refer to KST3904 for graphs

### Electrical Characteristics $T_a=25^\circ\text{C}$ unless otherwise noted

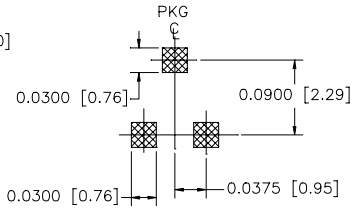
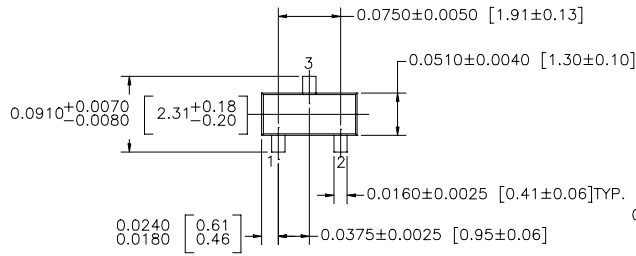
Symbol	Parameter	Test Condition	Min.	Max.	Units
$BV_{CEO}$	Collector-Emitter Breakdown Voltage	$I_C=2.0\text{mA}, I_B=0$	45		V
$BV_{EBO}$	Emitter-Base Breakdown Voltage	$I_E=1.0\mu\text{A}, I_C=0$	5		V
$I_{CES}$	Collector Cut-off Current	$V_{CE}=32\text{V}, V_{BE}=0$		20	nA
$I_{EBO}$	Emitter Cut-off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

### Marking

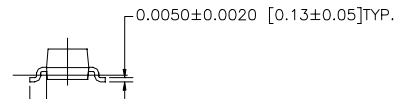
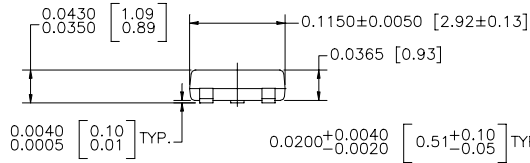


Package Dimensions

SOT-23



LAND PATTERN RECOMMENDATION



SOT 23, 3 LEADS LOW PROFILE

CONTROLLING DIMENSION IS INCH  
VALUES IN [ ] ARE MILLIMETERS

NOTE : UNLESS OTHERWISE SPECIFIED

1. STANDARD LEAD FINISH 150 MICROINCHES / 3.81 MICROMETERS  
MINIMUM TIN / LEAD (SOLDER) ON ALLOY 42
2. REFERENCE JEDEC REGISTRATION TO-236, VARIATION AB, ISSUE G, DATED JUL 1993

Dimensions in Millimeters

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ActiveArray <sup>™</sup>	FACT Quiet series <sup>™</sup>	ISOPLANAR <sup>™</sup>	POP <sup>™</sup>	Stealth <sup>™</sup>
Bottomless <sup>™</sup>	FAST <sup>®</sup>	LittleFET <sup>™</sup>	Power247 <sup>™</sup>	SuperSOT <sup>™</sup> -3
CoolFET <sup>™</sup>	FAST <sup>™</sup>	MicroFET <sup>™</sup>	PowerTrench <sup>®</sup>	SuperSOT <sup>™</sup> -6
CROSSVOLT <sup>™</sup>	FRFET <sup>™</sup>	MicroPak <sup>™</sup>	QFET <sup>™</sup>	SuperSOT <sup>™</sup> -8
DOME <sup>™</sup>	GlobalOptoisolator <sup>™</sup>	MICROWIRE <sup>™</sup>	QS <sup>™</sup>	SyncFET <sup>™</sup>
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The Power Franchise <sup>™</sup>		OPTOLOGIC <sup>®</sup>	SILENT SWITCHER <sup>®</sup>	VCX <sup>™</sup>
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