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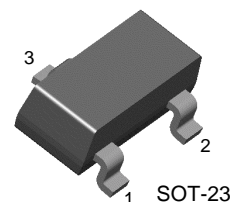
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# BCX70H

## 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

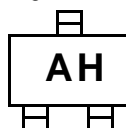
| Symbol    | Parameter                   | Value     | Units            |
|-----------|-----------------------------|-----------|------------------|
| $V_{CBO}$ | Collector-Base Voltage      | 45        | V                |
| $V_{CEO}$ | Collector-Emitter Voltage   | 45        | V                |
| $V_{EBO}$ | 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

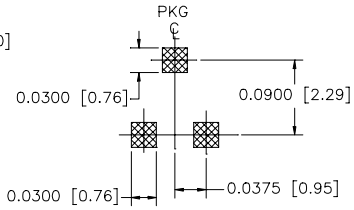
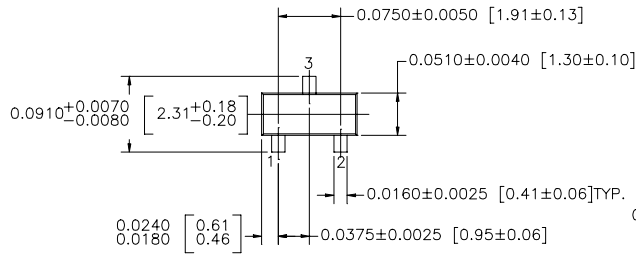
| Symbol               | Parameter                            | Test Condition   | Min.            | Max.         | Units  |
|----------------------|--------------------------------------|--|-----------------|--------------|--------|
| $BV_{CEO}$           | Collector-Emitter Breakdown Voltage  | $I_C=2.0\text{mA}, I_B=0$  | 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                      | $V_{CE}=5\text{V}, I_C=10\mu\text{A}$<br>$V_{CE}=5\text{V}, I_C=2.0\text{mA}$<br>$V_{CE}=1\text{V}, I_C=50\text{mA}$ | 20<br>180<br>70 | 310          |        |
| $V_{CE}(\text{sat})$ | Collector-Emitter Saturation Voltage | $I_C=10\text{mA}, I_B=0.25\text{mA}$<br>$I_C=50\text{mA}, I_B=1.25\text{mA}$   |                 | 0.35<br>0.55 | V<br>V |
| $V_{BE}(\text{sat})$ | Base-Emitter Saturation Voltage      | $I_C=10\text{mA}, I_B=0.25\text{mA}$<br>$I_C=50\text{mA}, I_B=1.25\text{mA}$   | 0.6<br>0.7      | 0.85<br>1.05 | V<br>V |
| $V_{BE}(\text{on})$  | Base-Emitter On Voltage              | $V_{CE}=5\text{V}, I_C=2.0\text{mA}$   | 0.55            | 0.75         | V      |
| $f_T$                | Current Gain Bandwidth Product       | $V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$   | 125             |              | MHz    |
| $C_{ob}$             | Output Capacitance                   | $V_{CE}=10\text{V}, I_E=0, f=1\text{MHz}$  |                 | 4.5          | pF     |
| NF                   | Noise Figure                         | $V_{CE}=5\text{V}, I_C=0.2\text{mA}$<br>$R_S=2\text{K}\Omega, f=1\text{KHz}$   |                 | 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                        | $V_{BB}=3.6\text{V}, I_{B2}=1.0\text{mA}$<br>$R_1=R_2=5\text{K}\Omega, R_L=990\Omega$                                |                 | 800          | ns     |

### Marking

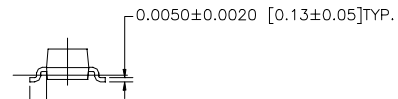
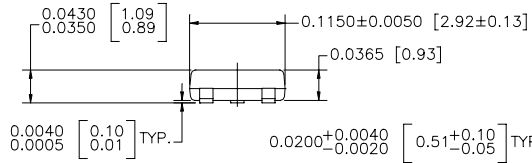


Package Dimensions

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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