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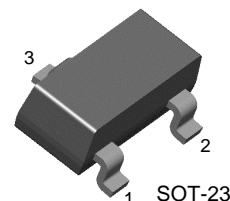
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BCX70J

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

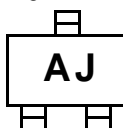
| Symbol | Parameter | Value | Units |
|-----------|-----------------------------|-----------|------------------|
| V_{CBO} | Collector-Base Voltage | 45 | V |
| V_{CEO} | Collector-Emitter Voltage | 45 | V |
| V_{EBO} | Emitter-Base Voltage | 5 | V |
| I_C | Collector Current | 200 | mA |
| P_C | Collector 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

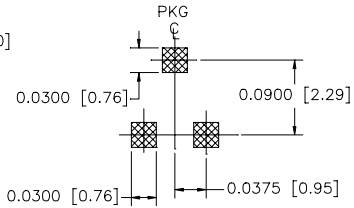
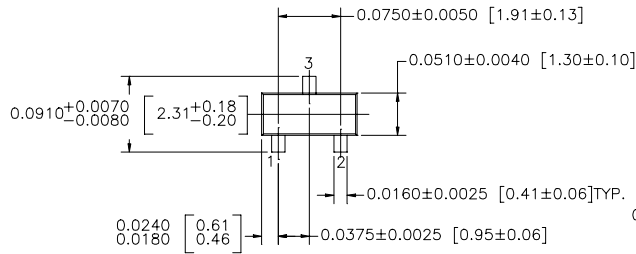
| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|----------------------|--------------------------------------|---|-----------------|--------------|-------|
| BV_{CEO} | Collector-Emitter Breakdown Voltage | $I_C=2.0\text{mA}$, $I_B=0$ | 45 | | V |
| BV_{EBO} | Emitter-Base Breakdown Voltage | $I_E=1.0\mu\text{A}$, $I_C=0$ | 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 | $V_{CE}=5\text{V}$, $I_C=10\mu\text{A}$ $V_{CE}=5\text{V}$, $I_C=2.0\text{mA}$ $V_{CE}=1\text{V}$, $I_C=50\text{mA}$ | 40 250 90 | 460 | |
| $V_{CE}(\text{sat})$ | 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

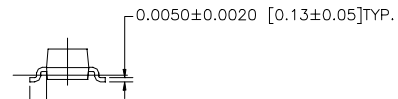
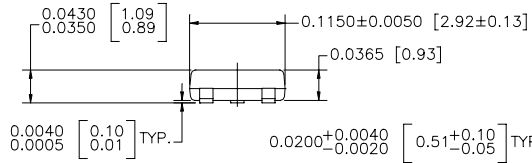


Package Dimensions

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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