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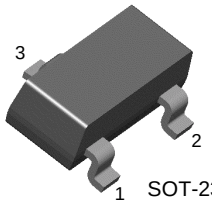
# BCX70H

## General Purpose Transistor




SOT-23

1. Base 2. Emitter 3. Collector

## NPN Epitaxial Silicon Transistor

### Absolute Maximum Ratings $T_a$=25°C unless otherwise noted

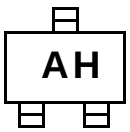
| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CBO}$ | Collector-Base Voltage | 45 | V |
| $V_{CEO}$ | Collector-Emitter Voltage | 45 | V |
| $V_{EBO}$ | Emitter-Base Voltage | 5 | V |
| $I_C$ | Collector Current | 200 | mA |
| $P_C$ | Collector Power Dissipation | 350 | mW |
| $T_{STG}$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

• Refer to KST3904 for graphs

### Electrical Characteristics $T_a$=25°C unless otherwise noted

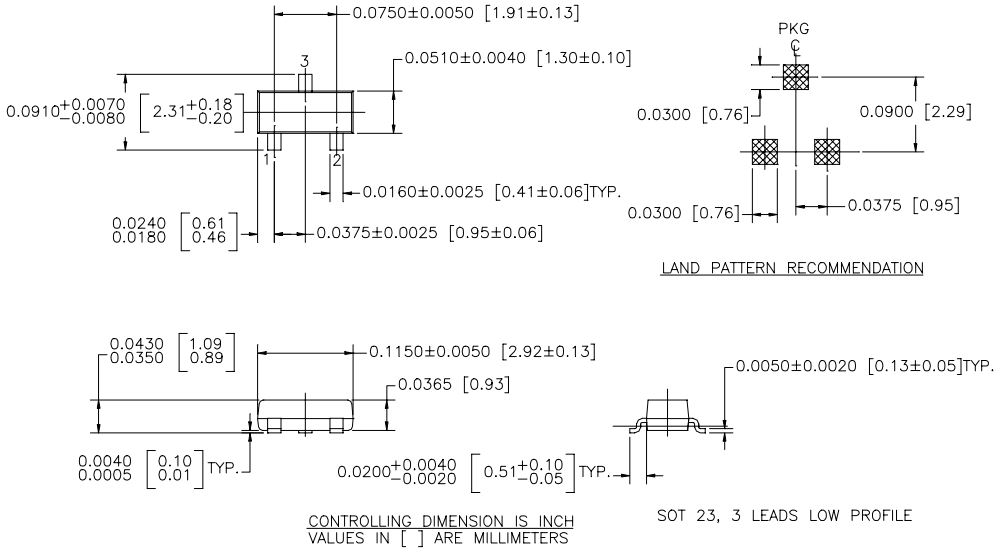
| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---|---|---|---|---|---|
| $BV_{CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$=2.0mA, $I_B$=0 | 45 | | V |
| $BV_{EBO}$ | Emitter-Base Breakdown Voltage | $I_E$=1.0μA, $I_C$=0 | 5 | | V |
| $I_{CES}$ | Collector Cut-off Current | $V_{CE}$=32V, $V_{BE}$=0 | | 20 | nA |
| $I_{EBO}$ | Emitter Cut-off Current | $V_{EB}$=4V, $I_C$=0 | | 20 | nA |
| $h_{FE}$ | DC Current Gain | $V_{CE}$=5V, $I_C$=10μA<br>$V_{CE}$=5V, $I_C$=2.0mA<br>$V_{CE}$=1V, $I_C$=50mA | 20<br>180<br>70 | <br>310 | |
| $V_{CE}$ (sat) | Collector-Emitter Saturation Voltage | $I_C$=10mA, $I_B$=0.25mA<br>$I_C$=50mA, $I_B$=1.25mA | | 0.35<br>0.55 | V<br>V |
| $V_{BE}$ (sat) | Base-Emitter Saturation Voltage | $I_C$=10mA, $I_B$=0.25mA<br>$I_C$=50mA, $I_B$=1.25mA | 0.6<br>0.7 | 0.85<br>1.05 | V<br>V |
| $V_{BE}$ (on) | Base-Emitter On Voltage | $V_{CE}$=5V, $I_C$=2.0mA | 0.55 | 0.75 | V |
| $f_T$ | Current Gain Bandwidth Product | $V_{CE}$=5V, $I_C$=10mA, f=100MHz | 125 | | MHz |
| $C_{ob}$ | Output Capacitance | $V_{CE}$=10V, $I_E$=0, f=1MHz | | 4.5 | pF |
| NF | Noise Figure | $V_{CE}$=5V, $I_C$=0.2mA<br>$R_S$=2KΩ, f=1KHz | | 6 | dB |
| $t_{ON}$ | Turn On Time | $I_C$=10mA, $I_{B1}$=1.0mA | | 150 | ns |
| $t_{OFF}$ | Turn Off Time | $V_{BB}$=3.6V, $I_{B2}$=1.0mA<br>$R_1$=$R_2$=5KΩ, $R_L$=990Ω | | 800 | ns |

Marking



## Package Dimensions

# SOT-23




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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