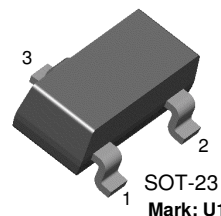


BCX19

NPN Medium Power Transistor

- This device is designed for general purpose amplifiers.
- Sourced from process 38.



SOT-23
Mark: U1
1. Base 2. Emitter 3. Collector

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

| Symbol | Parameter | Value | Units |
|----------------|----------------------------------|------------|------------------|
| V_{CEO} | Collector-Emitter Voltage | 45 | V |
| V_{CBO} | Collector-Base Voltage | 50 | V |
| V_{EBO} | Emitter-Base Voltage | 5.0 | V |
| I_C | Collector current - Continuous | 500 | mW |
| T_J, T_{stg} | Junction and Storage Temperature | -55 ~ +150 | $^\circ\text{C}$ |

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

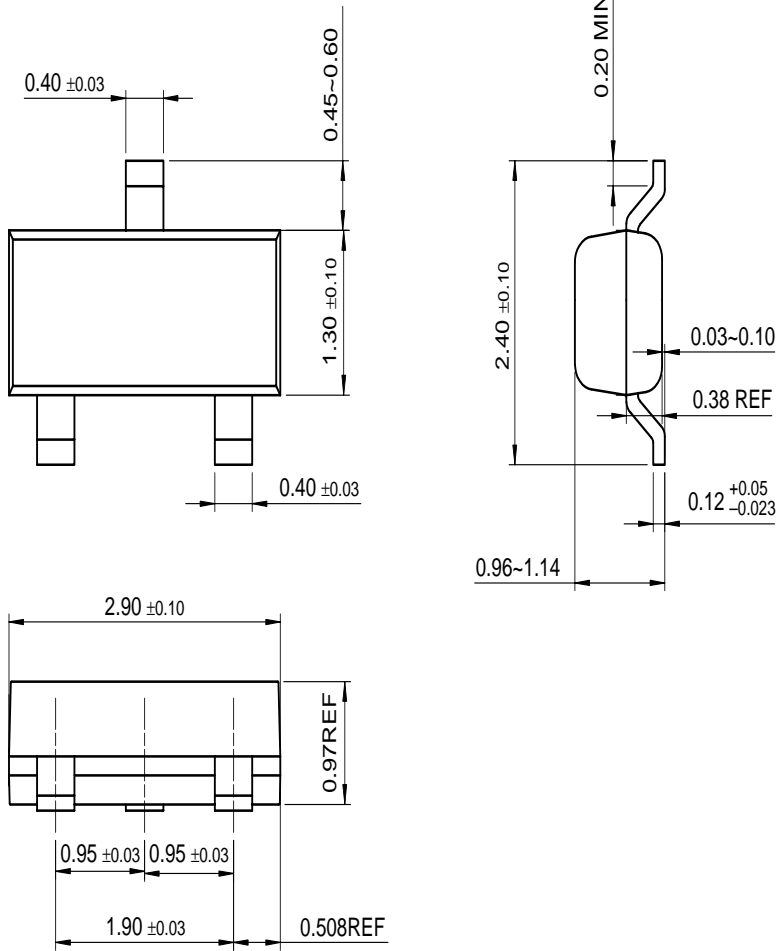
| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Units |
|----------------------------|--------------------------------------|--|-----------------|------|------------|---------------------|
| Off Characteristics | | | | | | |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C = 10\text{mA}, I_B = 0$ | 45 | | | V |
| $V_{(BR)CES}$ | Collector-Emitter Breakdown Voltage | $I_C = 10\mu\text{A}, I_C = 0$ | 50 | | | V |
| I_{CBO} | Collector Cutoff Current | $V_{CB} = 20\text{V}, I_E = 0$ $V_{CB} = 20\text{V}, I_E = 0, T_A = 150^\circ\text{C}$ | | | 100 5.0 | nA μA |
| I_{EBO} | Emitter Cutoff Current | $V_{EB} = 5.0\text{V}, I_C = 0$ | | | 10 | μA |
| On Characteristics | | | | | | |
| h_{FE} | DC Current Gain | $I_C = 100\text{mA}, V_{CE} = 1.0\text{V}$ $I_C = 300\text{mA}, V_{CE} = 1.0\text{V}$ $I_C = 500\text{mA}, V_{CE} = 1.0\text{V}$ | 100 70 40 | | 600 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C = 500\text{mA}, I_B = 50\text{mA}$ | | | 0.62 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $I_C = 500\text{mA}, V_{CE} = 1.0\text{V}$ | | | 1.2 | V |

Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol | Parameter | Max. | Units |
|-----------------|---|------------|----------------------------------|
| P_D | Total Device Dissipation Derate above 25°C | 300 2.4 | mW $\text{mW}/^\circ\text{C}$ |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 417 | $^\circ\text{C}/\text{W}$ |

Package Dimensions

SOT-23



Dimensions in Millimeters

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| CoolFET TM | FAST ^r TM | MicroFET TM | PowerTrench [®] | SuperSOT TM -6 |
| CROSSVOL TM | FRFET TM | MicroPak TM | QFET TM | SuperSOT TM -8 |
| DOME TM | GlobalOptoisolator TM | MICROWIRE TM | QS TM | SyncFET TM |
| EcoSPARK TM | GTO TM | MSX TM | QT Optoelectronics TM | TinyLogic TM |
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|--------------------------|------------------------|---|
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