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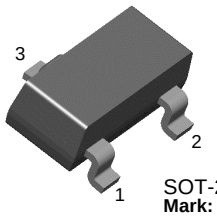
# BCW89

## PNP General Purpose Amplifier

- This device is designed for general purpose medium power amplifiers and switches requiring collector currents to 300mA.
- Sourced from process 68.




SOT-23
**Mark: H3**

1. Base 2. Emitter 3. Collector

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

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{CEO}$ | Collector-Emitter Voltage | -60 | V |
| $V_{CES}$ | Collector-Emitter Voltage | -60 | V |
| $V_{EBO}$ | Emitter-Base Voltage | -5.0 | V |
| $I_C$ | Collector current - Continuous | -500 | mA |
| $T_J$, $T_{stg}$ | Junction and Storage Temperature | -55 ~ +150 | °C |

* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**NOTES:**
1) These ratings are based on a maximum junction temperature of 150 degrees C.
2) These are state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

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

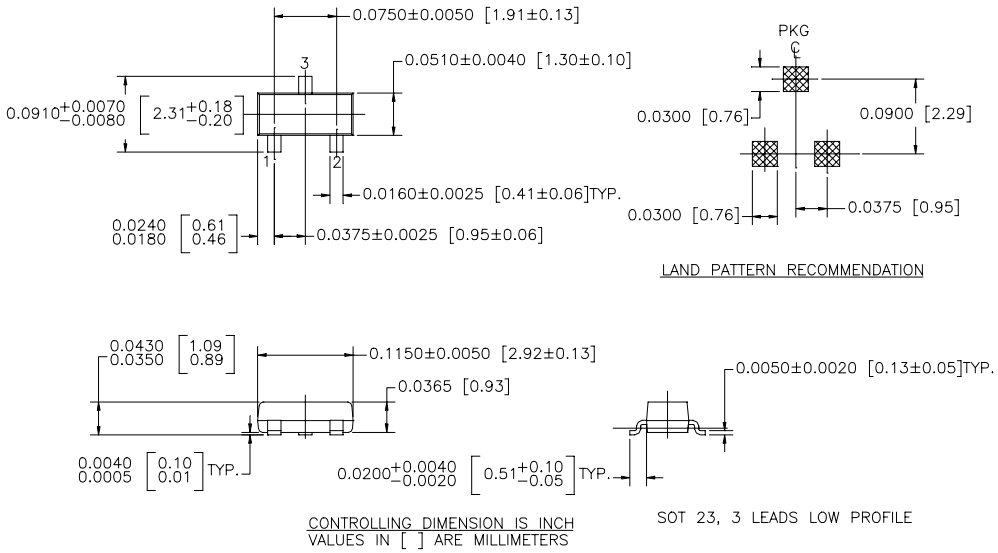
| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|---|---|---|---|---|---|
| **Off Characteristics** | | | | | |
| $V_{(BR)CBO}$ | Collector-Base Breakdown Voltage | $I_C$ = -10μA, $I_E$ = 0 | -80 | | V |
| $V_{(BR)CEO}$ | Collector-Emitter Breakdown Voltage | $I_C$ = -2.0mA, $I_B$ = 0 | -60 | | V |
| $V_{(BR)CES}$ | Collector-Emitter Breakdown Voltage | $I_C$ = -10μA, $I_E$ = 0 | -60 | | V |
| $V_{(BR)EBO}$ | Emitter-Base Breakdown Voltage | $I_C$ = -10μA, $I_C$ = 0 | -5.0 | | V |
| $I_{CBO}$ | Collector Cutoff Current | $V_{CB}$ = -20V, $I_E$ = 0<br>$V_{CB}$ = -20V, $I_E$ = 0, $T_A$ = +100°C | | -100<br>-10 | nA<br>μA |
| **On Characteristics** | | | | | |
| $h_{FE}$ | DC Current Gain | $V_{CE}$ = -5.0V, $I_C$ = -2.0mA | 120 | 260 | |
| $V_{CE(sat)}$ | Collector-Emitter Saturation Voltage | $I_C$ = -10mA, $I_B$ = -0.5mA | | -0.3 | V |
| $V_{BE(on)}$ | Base-Emitter On Voltage | $V_{CE}$ = -5.0V, $I_C$ = -2.0mA | -0.6 | -0.75 | V |
| **Small Signal Characteristics** | | | | | |
| NF | Noise Figure | $V_{CE}$ = -5.0V, $I_C$ = -200μA<br>$R_S$ = 2.0kΩ, f = 1.0kHz<br>$B_W$ = 200Hz | | 10 | dB |

## Thermal Characteristics $T_A$=25°C unless otherwise noted

| Symbol | Parameter | Max. | Units |
|---|---|---|---|
| $P_D$ | Total Device Dissipation<br>Derate above 25°C | 350<br>2.8 | mW<br>mW/°C |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient | 357 | °C/W |

## 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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| No Identification Needed | Full Production | This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design. |
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