

**BCW89**  
**SURFACE MOUNT**  
**PNP SILICON TRANSISTOR**



**SOT-23 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR BCW89 is a Silicon PNP Transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose applications.

**MARKING CODE: H3**

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

|  | <b>SYMBOL</b>  |             | <b>UNITS</b>              |
|--|----------------|-------------|---------------------------|
| Collector-Emitter Voltage                  | $V_{CEO}$      | 60          | V                         |
| Collector-Base Voltage                     | $V_{CES}$      | 60          | V                         |
| Emitter-Base Voltage                       | $V_{EBO}$      | 5.0         | V                         |
| Continuous Collector Current               | $I_C$          | 500         | mA                        |
| Power Dissipation                          | $P_D$          | 350         | mW                        |
| Operating and Storage Junction Temperature | $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$          |
| Thermal Resistance                         | $\theta_{JA}$  | 357         | $^\circ\text{C}/\text{W}$ |

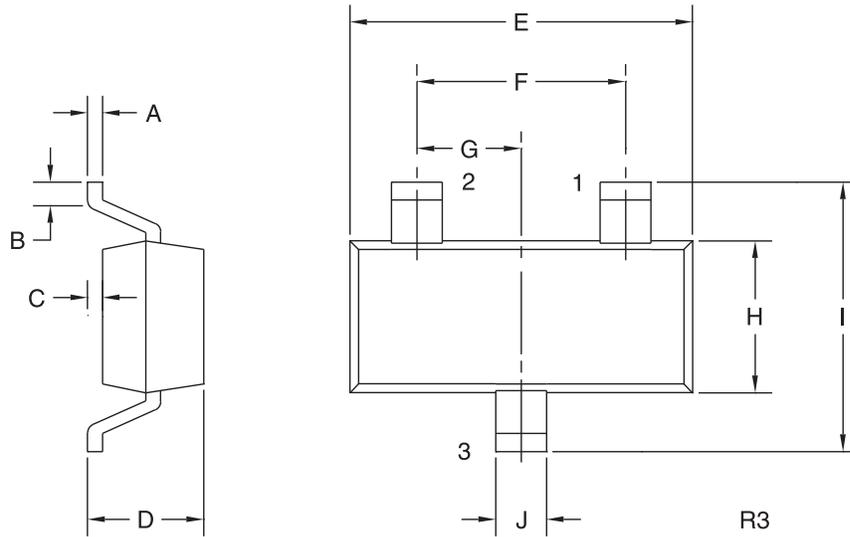
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| <b>SYMBOL</b> | <b>TEST CONDITIONS</b>   | <b>MIN</b> | <b>MAX</b> | <b>UNITS</b>  |
|---------------|--|------------|------------|---------------|
| $I_{CBO}$     | $V_{CB}=20\text{V}$  |            | 100        | nA            |
| $I_{CBO}$     | $V_{CB}=20\text{V}, T_A=100^\circ\text{C}$   |            | 10         | $\mu\text{A}$ |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$  | 80         |            | V             |
| $BV_{CEO}$    | $I_C=2.0\text{mA}$   | 60         |            | V             |
| $BV_{CES}$    | $I_C=10\mu\text{A}$  | 60         |            | V             |
| $BV_{EBO}$    | $I_C=10\mu\text{A}$  | 5.0        |            | V             |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=0.5\text{mA}$  |            | 300        | mV            |
| $V_{BE(ON)}$  | $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$   | 600        | 750        | mV            |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=2.0\text{mA}$   | 120        | 260        |               |
| NF            | $V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=2.0\text{k}\Omega$<br>$f=1.0\text{kHz}, B=200\text{Hz}$ |            | 10         | dB            |

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**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**  
1) BASE  
2) EMITTER  
3) COLLECTOR

**MARKING CODE: H3**

| <b>DIMENSIONS</b> |        |       |             |      |
|-------------------|--------|-------|-------------|------|
| SYMBOL            | INCHES |       | MILLIMETERS |      |
|                   | MIN    | MAX   | MIN         | MAX  |
| A                 | 0.003  | 0.007 | 0.08        | 0.18 |
| B                 | 0.006  | -     | 0.15        | -    |
| C                 | -      | 0.005 | -           | 0.13 |
| D                 | 0.035  | 0.043 | 0.89        | 1.09 |
| E                 | 0.110  | 0.120 | 2.80        | 3.05 |
| F                 | 0.075  |       | 1.90        |      |
| G                 | 0.037  |       | 0.95        |      |
| H                 | 0.047  | 0.055 | 1.19        | 1.40 |
| I                 | 0.083  | 0.098 | 2.10        | 2.49 |
| J                 | 0.014  | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R3)

R1 (20-November 2009)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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