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**SURFACE MOUNT  
NPN SILICON TRANSISTOR**



**SOT-89 CASE**

**Central**<sup>TM</sup>  
**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CXT491E type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high current, general purpose amplifier applications.

**Marking Code: Full Part Number**

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

|                           | SYMBOL         |             | UNITS                |
|---------------------------|----------------|-------------|----------------------|
| Collector-Base Voltage    | $V_{CBO}$      | 80          | V                    |
| Collector-Emitter Voltage | $V_{CEO}$      | 60          | V                    |
| Emitter-Base Voltage      | $V_{EBO}$      | 5.0         | V                    |
| Collector Current         | $I_C$          | 1.0         | A                    |
| Base Current              | $I_B$          | 200         | mA                   |
| Collector Current (Peak)  | $I_{CM}$       | 2.0         | A                    |
| Power Dissipation         | $P_D$          | 1.2         | W                    |
| Operating and Storage     |                |             |                      |
| Junction Temperature      | $T_J, T_{stg}$ | -65 to +150 | $^{\circ}\text{C}$   |
| Thermal Resistance        | $\Theta_{JA}$  | 104         | $^{\circ}\text{C/W}$ |

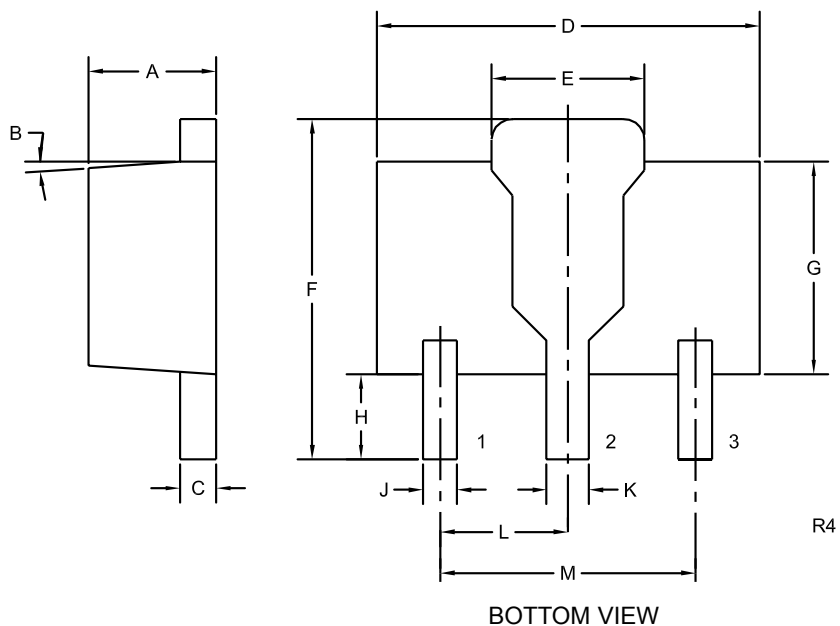
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

| SYMBOL        | TEST CONDITIONS                                       | MIN | MAX  | UNITS |
|---------------|-------------------------------------------------------|-----|------|-------|
| $I_{CBO}$     | $V_{CB}=60\text{V}$                                   |     | 100  | nA    |
| $I_{EBO}$     | $V_{EB}=4.0\text{V}$                                  |     | 100  | nA    |
| $BV_{CBO}$    | $I_C=100\mu\text{A}$                                  | 80  |      | V     |
| $BV_{CEO}$    | $I_C=10\text{mA}$                                     | 60  |      | V     |
| $BV_{EBO}$    | $I_E=100\mu\text{A}$                                  | 5.0 |      | V     |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                   |     | 0.20 | V     |
| $V_{CE(SAT)}$ | $I_C=1.0\text{A}, I_B=100\text{mA}$                   |     | 0.40 | V     |
| $V_{BE(SAT)}$ | $I_C=1.0\text{A}, I_B=100\text{mA}$                   |     | 1.1  | V     |
| $V_{BE(ON)}$  | $V_{CE}=5.0\text{V}, I_C=1.0\text{A}$                 |     | 1.0  | V     |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$                | 200 |      |       |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=500\text{mA}$                | 200 | 600  |       |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=1.0\text{A}$                 | 50  |      |       |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=2.0\text{A}$                 | 15  |      |       |
| $f_T$         | $V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$ | 150 |      | MHz   |
| $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$           |     | 10   | pF    |

R1 (20-May 2004)

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SOT-89 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Emitter
- 2) Collector
- 3) Base

MARKING CODE: Full Part Number

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 0.055  | 0.067 | 1.40        | 1.70 |
| B          | 4°     |       | 4°          |      |
| C          | 0.014  | 0.018 | 0.35        | 0.46 |
| D          | 0.173  | 0.185 | 4.40        | 4.70 |
| E          | 0.064  | 0.074 | 1.62        | 1.87 |
| F          | 0.146  | 0.177 | 3.70        | 4.50 |
| G          | 0.090  | 0.106 | 2.29        | 2.70 |
| H          | 0.028  | 0.051 | 0.70        | 1.30 |
| J          | 0.014  | 0.019 | 0.36        | 0.48 |
| K          | 0.017  | 0.023 | 0.44        | 0.58 |
| L          | 0.059  |       | 1.50        |      |
| M          | 0.118  |       | 3.00        |      |

SOT-89 (REV: R4)

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