

**CMPT2369**  
**SURFACE MOUNT**  
**NPN SILICON TRANSISTOR**



**SOT-23 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT2369 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and high speed switching applications.

**MARKING CODE: C1J**

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

|  |
|--|
| Collector-Base Voltage                     |
| Collector-Emitter Voltage                  |
| Collector-Emitter Voltage                  |
| Emitter-Base Voltage                       |
| Continuous Collector Current               |
| Power Dissipation                          |
| Operating and Storage Junction Temperature |
| Thermal Resistance                         |

**SYMBOL**

|                |             |
|----------------|-------------|
| $V_{CB0}$      | 40          |
| $V_{CES}$      | 40          |
| $V_{CEO}$      | 15          |
| $V_{EBO}$      | 4.5         |
| $I_C$          | 500         |
| $P_D$          | 350         |
| $T_J, T_{stg}$ | -65 to +150 |
| $\theta_{JA}$  | 357         |

**UNITS**

|                    |
|--------------------|
| V                  |
| V                  |
| V                  |
| V                  |
| mA                 |
| mW                 |
| $^\circ\text{C}$   |
| $^\circ\text{C/W}$ |

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

| SYMBOL        | TEST CONDITIONS   | MIN | MAX  | UNITS         |
|---------------|---|-----|------|---------------|
| $I_{CBO}$     | $V_{CB}=20\text{V}$   |     | 0.4  | $\mu\text{A}$ |
| $I_{CBO}$     | $V_{CB}=20\text{V}, T_A=125^\circ\text{C}$                                      |     | 30   | $\mu\text{A}$ |
| $BV_{CB0}$    | $I_C=10\mu\text{A}$   | 40  |      | V             |
| $BV_{CES}$    | $I_C=10\mu\text{A}$   | 40  |      | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$   | 15  |      | V             |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$   | 4.5 |      | V             |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$   |     | 0.25 | V             |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$   | 0.7 | 0.85 | V             |
| $h_{FE}$      | $V_{CE}=1.0\text{V}, I_C=10\text{mA}$   | 40  | 120  |               |
| $h_{FE}$      | $V_{CE}=2.0\text{V}, I_C=100\text{mA}$  | 20  |      |               |
| $C_{ob}$      | $V_{CB}=5.0\text{V}, I_E=0, f=1.0\text{MHz}$                                    |     | 4.0  | pF            |
| $f_T$         | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$                           | 500 |      | MHz           |
| $t_s$         | $V_{CC}=3.0\text{V}, I_C=I_{B1}=I_{B2}=10\text{mA}$                             |     | 13   | ns            |
| $t_{on}$      | $V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=3.0\text{mA}$                      |     | 12   | ns            |
| $t_{off}$     | $V_{CC}=3.0\text{V}, I_C=10\text{mA}, I_{B1}=3.0\text{mA}, I_{B2}=1.5\text{mA}$ |     | 18   | ns            |

R5 (1-February 2010)

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SOT-23 CASE - MECHANICAL OUTLINE



**LEAD CODE:**

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

**MARKING CODE: C1J**

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| 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)

R5 (1-February 2010)

## 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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