

**CMPTA94**  
**SURFACE MOUNT**  
**HIGH VOLTAGE**  
**PNP SILICON TRANSISTOR**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPTA94 type is a surface mount epoxy molded PNP silicon planar epitaxial transistor designed for extremely high voltage applications.

**MARKING CODE: C94**

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

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

**SYMBOL**

$V_{CBO}$  400  
 $V_{CEO}$  400  
 $V_{EBO}$  6.0  
 $I_C$  300  
 $P_D$  350  
 $T_J, T_{stg}$  -65 to +150  
 $\theta_{JA}$  357

**UNITS**

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 |
|---------------|--|-----|------|-------|
| $I_{CBO}$     | $V_{CB}=350\text{V}$                                 |     | 100  | nA    |
| $I_{CES}$     | $V_{CE}=350\text{V}$                                 |     | 500  | nA    |
| $I_{EBO}$     | $V_{BE}=4.0\text{V}$                                 |     | 100  | nA    |
| $BV_{CBO}$    | $I_C=100\mu\text{A}$                                 | 400 |      | V     |
| $BV_{CES}$    | $I_C=100\mu\text{A}$                                 | 400 |      | V     |
| $BV_{CEO}$    | $I_C=1.0\text{mA}$                                   | 400 |      | V     |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$                                  | 6.0 |      | V     |
| $V_{CE(SAT)}$ | $I_C=1.0\text{mA}, I_B=0.1\text{mA}$                 |     | 0.40 | V     |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$                  |     | 0.50 | V     |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$                  |     | 0.75 | V     |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$                  |     | 0.75 | V     |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}$                | 40  |      |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=10\text{mA}$                 | 50  | 200  |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=50\text{mA}$                 | 45  |      |       |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=100\text{mA}$                | 20  |      |       |
| $f_T$         | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=10\text{MHz}$ | 20  |      | MHz   |
| $C_{ob}$      | $V_{CB}=20\text{V}, I_E=0, f=1.0\text{MHz}$          |     | 7.0  | pF    |
| $C_{ib}$      | $V_{EB}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$         |     | 130  | pF    |

R3 (3-February 2010)

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**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODE: C94**

| <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)

R3 (3-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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