



**THE DATASHEET OF  
CMPT2907A TR PBFREE**



**CMPT2907A**  
**SURFACE MOUNT SILICON**  
**PNP TRANSISTOR**



**SOT-23 CASE**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT2907A is a PNP silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

**MARKING CODE: C2F**

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

|  | SYMBOL         |             | UNITS              |
|--|----------------|-------------|--------------------|
| Collector-Base Voltage                     | $V_{CBO}$      | 60          | V                  |
| Collector-Emitter Voltage                  | $V_{CEO}$      | 60          | V                  |
| Emitter-Base Voltage                       | $V_{EBO}$      | 5.0         | V                  |
| Continuous Collector Current               | $I_C$          | 600         | mA                 |
| Power Dissipation                          | $P_D$          | 225         | mW                 |
| Operating and Storage Junction Temperature | $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$   |
| Thermal Resistance                         | $\theta_{JA}$  | 556         | $^\circ\text{C/W}$ |

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

| SYMBOL        | TEST CONDITIONS                                       | MIN | MAX | UNITS         |
|---------------|---|-----|-----|---------------|
| $I_{CBO}$     | $V_{CB}=50\text{V}$                                   |     | 10  | nA            |
| $I_{CBO}$     | $V_{CB}=50\text{V}, T_A=125^\circ\text{C}$            |     | 10  | $\mu\text{A}$ |
| $I_{CEV}$     | $V_{CE}=30\text{V}, V_{EB}=0.5\text{V}$               |     | 50  | nA            |
| $BV_{CBO}$    | $I_C=10\mu\text{A}$                                   | 60  |     | V             |
| $BV_{CEO}$    | $I_C=10\text{mA}$                                     | 60  |     | V             |
| $BV_{EBO}$    | $I_E=10\mu\text{A}$                                   | 5.0 |     | V             |
| $V_{CE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$                   |     | 0.4 | V             |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                   |     | 1.6 | V             |
| $V_{BE(SAT)}$ | $I_C=150\text{mA}, I_B=15\text{mA}$                   |     | 1.3 | V             |
| $V_{BE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$                   |     | 2.6 | V             |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=0.1\text{mA}$                 | 75  |     |               |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=1.0\text{mA}$                 | 100 |     |               |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=10\text{mA}$                  | 100 |     |               |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=150\text{mA}$                 | 100 | 300 |               |
| $h_{FE}$      | $V_{CE}=10\text{V}, I_C=500\text{mA}$                 | 50  |     |               |
| $f_T$         | $V_{CE}=20\text{V}, I_C=50\text{mA}, f=100\text{MHz}$ | 200 |     | MHz           |
| $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$           |     | 8.0 | pF            |
| $C_{ib}$      | $V_{BE}=2.0\text{V}, I_C=0, f=1.0\text{MHz}$          |     | 30  | pF            |

R6 (13-February 2020)

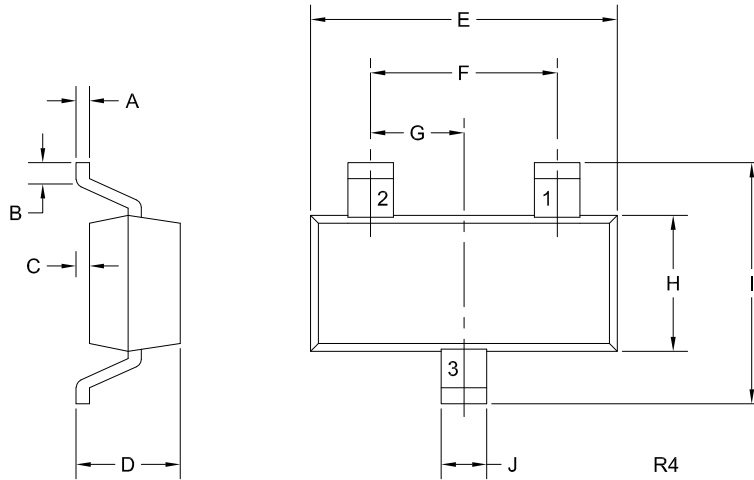
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

| SYMBOL    | TEST CONDITIONS  | MAX | UNITS |
|-----------|--|-----|-------|
| $t_{on}$  | $V_{CC}=30\text{V}$ , $V_{BE}=0.5\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=15\text{mA}$ | 45  | ns    |
| $t_d$     | $V_{CC}=30\text{V}$ , $V_{BE}=0.5\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=15\text{mA}$ | 10  | ns    |
| $t_r$     | $V_{CC}=30\text{V}$ , $V_{BE}=0.5\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=15\text{mA}$ | 40  | ns    |
| $t_{off}$ | $V_{CC}=6.0\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=I_{B2}=15\text{mA}$                | 100 | ns    |
| $t_s$     | $V_{CC}=6.0\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=I_{B2}=15\text{mA}$                | 80  | ns    |
| $t_f$     | $V_{CC}=6.0\text{V}$ , $I_C=150\text{mA}$ , $I_{B1}=I_{B2}=15\text{mA}$                | 30  | ns    |

**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODE: C2F**

| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | 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      | 0.044 | 0.89        | 1.12 |
| 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      | 0.104 | 2.10        | 2.64 |
| J      | 0.014      | 0.020 | 0.35        | 0.50 |

SOT-23 (REV: R4)

R6 (13-February 2020)

## 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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## Optimize Your Supply Chain with WIN SOURCE Solutions

- ✓ Global Sourcing Solution
- ✓ Obsolete Management
- ✓ Cost Control Management
- ✓ Shortage Management
- ✓ Alternative Solution
- ✓ Excess Inventory Management