

CMPT2907A
SURFACE MOUNT
PNP SILICON TRANSISTOR



SOT-23 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT2907A type 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 | 350 | mW |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | 357 | $^\circ\text{C/W}$ |

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 | μA |
| 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 |

R5 (1-February 2010)

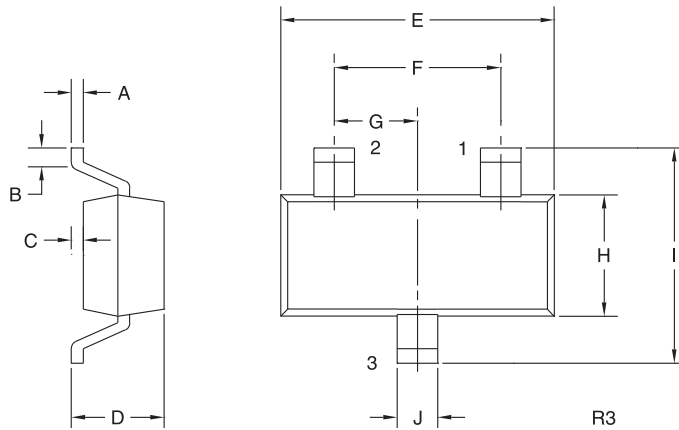
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| 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 | 0.043 | 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



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

DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2nd 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

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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