

CMPT8099 NPN
CMPT8599 PNP

**SURFACE MOUNT
COMPLEMENTARY
SILICON TRANSISTORS**



SOT-23 CASE



www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT8099 and CMPT8599 are complementary silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose audio amplifier applications.

**MARKING CODES: CMPT8099: CKB
CMPT8599: C2W**

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

| | | | |
|--------------------------------------------|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CB0} | 80 | V |
| Collector-Emitter Voltage | V_{CEO} | 80 | V |
| Emitter-Base Voltage | V_{EBO} | 6.0 | V |
| Continuous Collector Current | I_C | 500 | 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 | $^\circ\text{C/W}$ |

| SYMBOL | CMPT8099 | CMPT8599 | UNITS |
|----------------|----------|-------------|--------------------|
| V_{CB0} | 80 | 80 | V |
| V_{CEO} | 80 | 80 | V |
| V_{EBO} | 6.0 | 5.0 | V |
| I_C | | 500 | mA |
| P_D | | 350 | mW |
| T_J, T_{stg} | | -65 to +150 | $^\circ\text{C}$ |
| θ_{JA} | | 357 | $^\circ\text{C/W}$ |

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

| SYMBOL | TEST CONDITIONS | CMPT8099 | | CMPT8599 | | UNITS |
|---------------|--------------------------------------------------------|----------|-----|----------|-----|---------------|
| | | MIN | MAX | MIN | MAX | |
| I_{CBO} | $V_{CB}=80\text{V}$ | | 0.1 | | 0.1 | μA |
| I_{EBO} | $V_{BE}=6.0\text{V}$ | | 0.1 | | - | μA |
| I_{EBO} | $V_{BE}=4.0\text{V}$ | | - | | 0.1 | μA |
| BV_{CB0} | $I_C=100\mu\text{A}$ | 80 | | 80 | | V |
| BV_{CEO} | $I_C=10\text{mA}$ | 80 | | 80 | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 6.0 | | 5.0 | | V |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=5.0\text{mA}$ | | 0.4 | | 0.4 | V |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=10\text{mA}$ | | 0.3 | | 0.3 | V |
| $V_{BE(ON)}$ | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | 0.6 | 0.8 | 0.6 | 0.8 | V |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ | 100 | 300 | 100 | 300 | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | 100 | | 100 | | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=100\text{mA}$ | 75 | | 75 | | |
| f_T | $V_{CE}=5.0\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 150 | | 150 | | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 6.0 | | 4.5 | pF |
| C_{ib} | $V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$ | | 25 | | 30 | pF |

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODES:

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| 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



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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