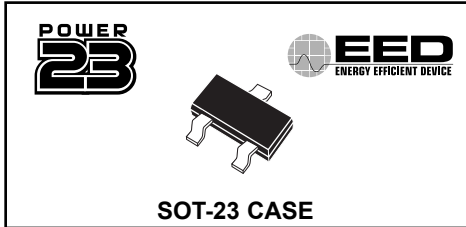


PRELIMINARY

CMPT3090L
SURFACE MOUNT
LOW $V_{CE(SAT)}$
NPN POWER TRANSISTOR



CentralTM

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT3090L is a Low $V_{CE(SAT)}$ NPN Transistor in a space saving Power SOT-23 surface mount package, designed for DC-DC converters for mobile systems and LAN cards, motor control, power management and strobe flash units.

MARKING CODE: 309L

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

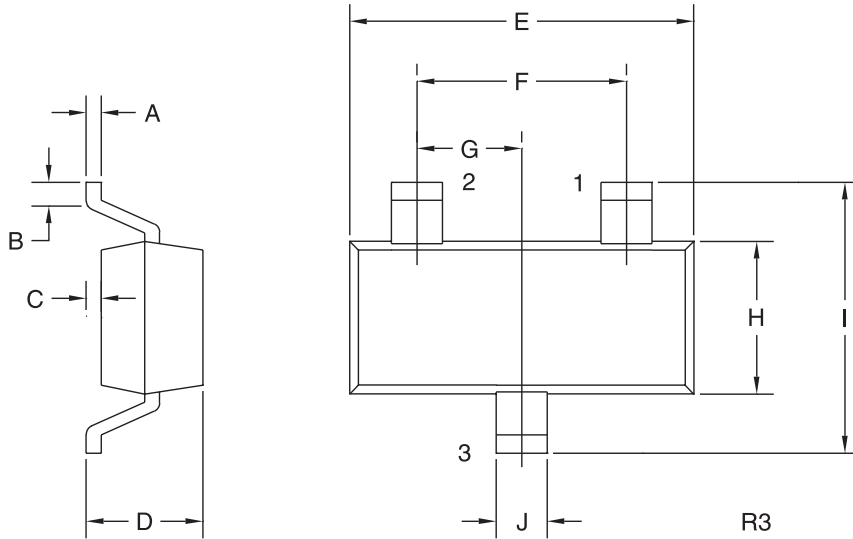
| | SYMBOL | | UNITS |
|------------------------------|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 45 | V |
| Collector-Emitter Voltage | V_{CEO} | 15 | V |
| Emitter-Base Voltage | V_{EBO} | 6.0 | V |
| Continuous Collector Current | I_C | 3.0 | A |
| Peak Pulse Current | I_{CM} | 6.0 | A |
| 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: ($T_A=25^\circ\text{C}$)

| SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNITS |
|---------------|--|-----|-----|-----|-------|
| I_{CBO} | $V_{CB}=20\text{V}$ | | | 100 | nA |
| I_{EBO} | $V_{EB}=5.0\text{V}$ | | | 100 | nA |
| BV_{CBO} | $I_C=10\mu\text{A}$ | 45 | | | V |
| BV_{CEO} | $I_C=10\text{mA}$ | 15 | | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 6.0 | | | V |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=1.0\text{mA}$ | | 30 | 50 | mV |
| $V_{CE(SAT)}$ | $I_C=1.0\text{A}, I_B=20\text{mA}$ | | 60 | 150 | mV |
| $V_{CE(SAT)}$ | $I_C=2.0\text{A}, I_B=200\text{mA}$ | | 85 | 200 | mV |
| $V_{CE(SAT)}$ | $I_C=3.0\text{A}, I_B=60\text{mA}$ | | 145 | 300 | mV |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=500\text{mA}$ | 200 | | | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=1.0\text{A}$ | 200 | | | |
| h_{FE} | $V_{CE}=2.0\text{V}, I_C=3.0\text{A}$ | 175 | | | |
| C_{ob} | $V_{CB}=10\text{V}, f=1.0\text{MHz}$ | | | 100 | pF |
| f_T | $V_{CE}=10\text{V}, I_C=500\text{mA}$ | 100 | | | MHz |

R1 (17-December 2002)

SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) BASE
- 2) EMITTER
- 3) COLLECTOR

MARKING CODE: 309L

| 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)

R1 (17-December 2002)