

CMPT5088
CMPT5089

SURFACE MOUNT
NPN SILICON TRANSISTOR



SOT-23 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT5088 and CMPT5089 are NPN silicon transistors manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

**MARKING CODES: CMPT5088: C1Q
CMPT5089: C1R**

MAXIMUM RATINGS: (T_A=25°C)

| | | | | |
|--|-----------------------------------|-------------|----|------|
| Collector-Base Voltage | V _{CB0} | 35 | 30 | V |
| Collector-Emitter Voltage | V _{CEO} | 30 | 25 | V |
| Emitter-Base Voltage | V _{EBO} | 4.5 | | V |
| Continuous Collector Current | I _C | 50 | | mA |
| Power Dissipation | P _D | 350 | | mW |
| Operating and Storage Junction Temperature | T _J , T _{stg} | -65 to +150 | | °C |
| Thermal Resistance | θ _{JA} | 357 | | °C/W |

| SYMBOL | CMPT5088 | CMPT5089 | UNITS |
|-----------------------------------|-------------|----------|-------|
| V _{CB0} | 35 | 30 | V |
| V _{CEO} | 30 | 25 | V |
| V _{EBO} | 4.5 | | V |
| I _C | 50 | | mA |
| P _D | 350 | | mW |
| T _J , T _{stg} | -65 to +150 | | °C |
| θ _{JA} | 357 | | °C/W |

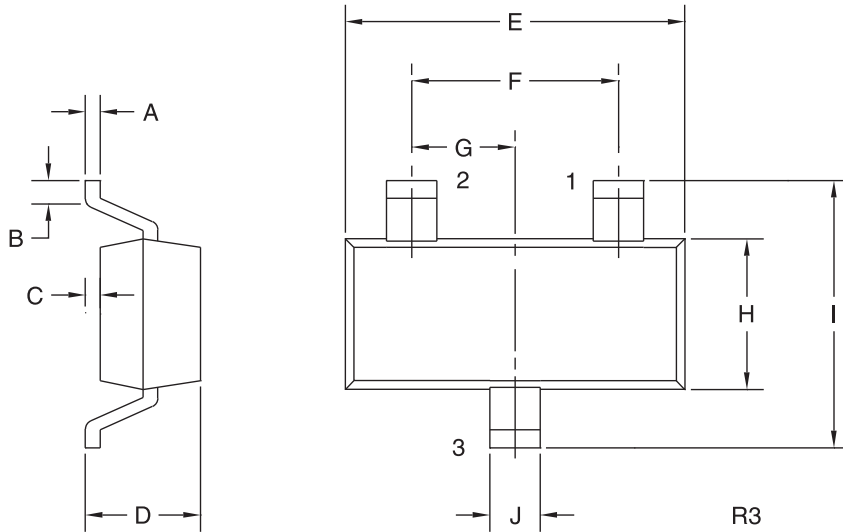
ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

| SYMBOL | TEST CONDITIONS | CMPT5088 | | CMPT5089 | | UNITS |
|----------------------|---|----------|------|----------|------|-------|
| | | MIN | MAX | MIN | MAX | |
| I _{CB0} | V _{CB} =20V | - | 50 | - | - | nA |
| I _{CB0} | V _{CB} =15V | - | - | - | 50 | nA |
| I _{EBO} | V _{EB} =3.0V | - | 50 | - | - | nA |
| I _{EBO} | V _{EB} =4.5V | - | - | - | 100 | nA |
| BV _{CB0} | I _C =100μA | 35 | - | 30 | - | V |
| BV _{CEO} | I _C =1.0mA | 30 | - | 25 | - | V |
| BV _{EBO} | I _E =100μA | 4.5 | - | 4.5 | - | V |
| V _{CE(SAT)} | I _C =10mA, I _B =1.0mA | - | 0.5 | - | 0.5 | V |
| V _{BE(SAT)} | I _C =10mA, I _B =1.0mA | - | 0.8 | - | 0.8 | V |
| h _{FE} | V _{CE} =5.0V, I _C =0.1mA | 300 | 900 | 400 | 1200 | |
| h _{FE} | V _{CE} =5.0V, I _C =1.0mA | 350 | - | 450 | - | |
| h _{FE} | V _{CE} =5.0V, I _C =10mA | 300 | - | 400 | - | |
| f _T | V _{CE} =5.0V, I _C =500μA, f=20MHz | 50 | - | 50 | - | MHz |
| C _{ob} | V _{CB} =5.0V, I _E =0, f=1.0MHz | - | 4.0 | - | 4.0 | pF |
| C _{ib} | V _{BE} =0.5V, I _C =0, f=1.0MHz | - | 15 | - | 15 | pF |
| h _{fe} | V _{CE} =5.0V, I _C =1.0mA, f=1.0kHz | 350 | 1400 | 450 | 1800 | |
| NF | V _{CE} =5.0V, I _C =100μA, R _S =10kΩ, f=10Hz to 15.7kHz | - | 3.0 | - | 2.0 | dB |

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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)

R7 (9-September 2010)

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- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
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