

CMPTH10

**SURFACE MOUNT
NPN SILICON
RF TRANSISTOR**



SOT-23 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPTH10 type is an NPN silicon RF transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for low noise UHF/VHF amplifier and high output oscillator applications.

MARKING CODE: C3E

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

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL

V_{CB0} 30
 V_{CEO} 25
 V_{EBO} 3.0
 P_D 350
 T_J, T_{stg} -65 to +150
 θ_{JA} 357

UNITS

V
V
V
mW
 $^\circ\text{C}$
 $^\circ\text{C/W}$

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

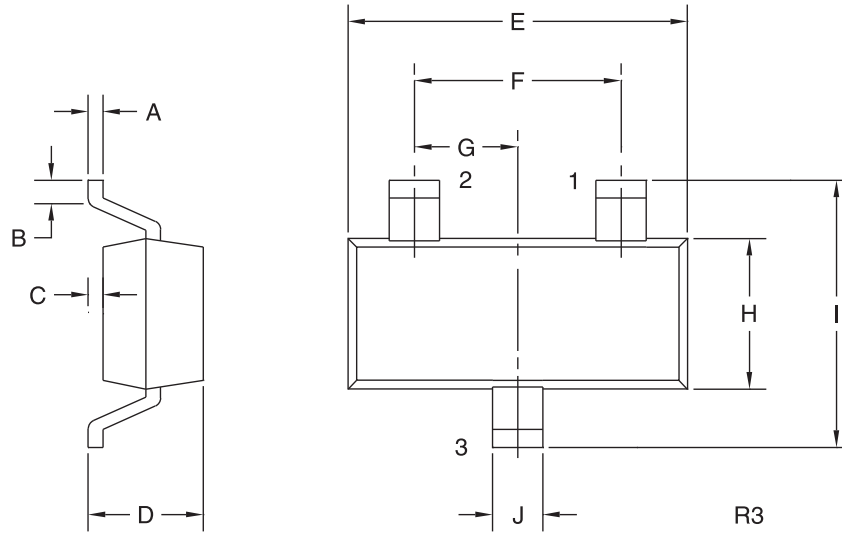
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---------------------------------------------------------|-----|------|-------|
| I_{CBO} | $V_{CB}=25\text{V}$ | | 100 | nA |
| I_{EBO} | $V_{EB}=2.0\text{V}$ | | 100 | nA |
| BV_{CBO} | $I_C=100\mu\text{A}$ | 30 | | V |
| BV_{CEO} | $I_C=1.0\text{mA}$ | 25 | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 3.0 | | V |
| $V_{CE(SAT)}$ | $I_C=4.0\text{mA}, I_B=0.4\text{mA}$ | | 0.50 | V |
| $V_{BE(ON)}$ | $V_{CE}=10\text{V}, I_B=4.0\text{mA}$ | | 0.95 | V |
| h_{FE} | $V_{CE}=10\text{V}, I_C=4.0\text{mA}$ | 60 | | |
| f_T | $V_{CE}=10\text{V}, I_C=4.0\text{mA}, f=100\text{MHz}$ | 650 | | MHz |
| C_{cb} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 0.70 | pF |
| C_{rb} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 0.65 | pF |
| $rb'C_c$ | $V_{CB}=10\text{V}, I_C=4.0\text{mA}, f=31.8\text{MHz}$ | | 9.0 | ps |

R5 (3-February 2010)

CMPH10
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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODE: C3E

| 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 (3-February 2010)