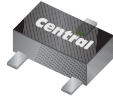


CMUT5551
SURFACE MOUNT
NPN SILICON TRANSISTOR



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ULTRAmiTM



SOT-523 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT5551 type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage amplifier applications.

MARKING CODE: 55C

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

| | | | |
|--|----------------|-------------|--------------------|
| Collector-Base Voltage | V_{CBO} | 180 | V |
| Collector-Emitter Voltage | V_{CEO} | 160 | V |
| Emitter-Base Voltage | V_{EBO} | 6.0 | V |
| Continuous Collector Current | I_C | 600 | mA |
| Power Dissipation | P_D | 250 | mW |
| Operating and Storage Junction Temperature | T_J, T_{stg} | -65 to +150 | $^\circ\text{C}$ |
| Thermal Resistance | θ_{JA} | 500 | $^\circ\text{C/W}$ |

SYMBOL

UNITS

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

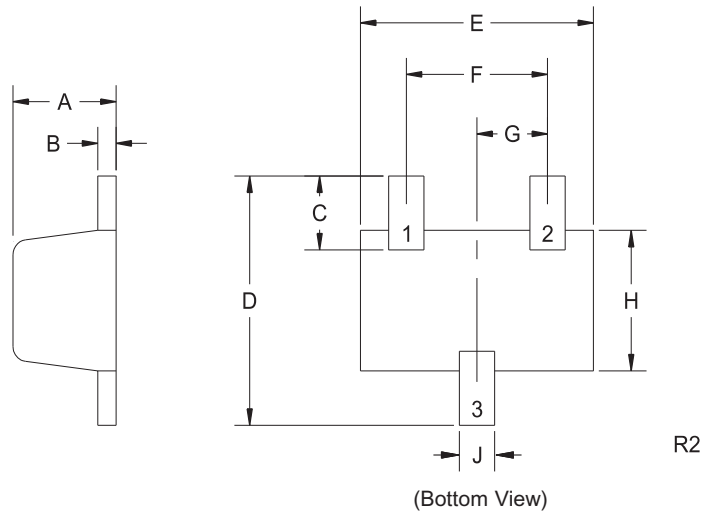
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|---|------------|------------|---------------|
| I_{CBO} | $V_{CB}=120\text{V}$ | | 50 | nA |
| I_{CBO} | $V_{CB}=120\text{V}, T_A=100^\circ\text{C}$ | | 50 | μA |
| BV_{CBO} | $I_C=100\mu\text{A}$ | 180 | | V |
| BV_{CEO} | $I_C=1.0\text{mA}$ | 160 | | V |
| BV_{EBO} | $I_E=10\mu\text{A}$ | 6.0 | | V |
| $V_{CE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$ | | 0.15 | V |
| $V_{CE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$ | | 0.20 | V |
| $V_{BE(SAT)}$ | $I_C=10\text{mA}, I_B=1.0\text{mA}$ | | 1.00 | V |
| $V_{BE(SAT)}$ | $I_C=50\text{mA}, I_B=5.0\text{mA}$ | | 1.00 | V |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$ | 80 | | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=10\text{mA}$ | 80 | 250 | |
| h_{FE} | $V_{CE}=5.0\text{V}, I_C=50\text{mA}$ | 30 | | |
| f_T | $V_{CE}=10\text{V}, I_C=10\text{mA}, f=100\text{MHz}$ | 100 | 300 | MHz |
| C_{ob} | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ | | 6.0 | pF |
| h_{fe} | $V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$ | 50 | 200 | |
| NF | $V_{CE}=5.0\text{V}, I_C=200\mu\text{A}, R_S=10\Omega,$ $f=10\text{Hz to } 15.7\text{kHz}$ | | 8.0 | dB |

R1 (9-February 2010)

CMUT5551
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SOT-523 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING CODE: 55C

| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.023 | 0.031 | 0.58 | 0.78 |
| B | 0.002 | 0.008 | 0.04 | 0.20 |
| C | 0.013 | 0.021 | 0.34 | 0.54 |
| D | 0.059 | 0.067 | 1.50 | 1.70 |
| E | 0.059 | 0.067 | 1.50 | 1.70 |
| F | 0.035 | 0.043 | 0.90 | 1.10 |
| G | 0.020 | | 0.50 | |
| H | 0.031 | 0.039 | 0.78 | 0.98 |
| J | 0.010 | 0.014 | 0.25 | 0.35 |

SOT-523 (REV: R2)

R1 (9-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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