

CZT5551E

**ENHANCED SPECIFICATION
SURFACE MOUNT
NPN SILICON TRANSISTOR**



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT5551E is an NPN Silicon Transistor, packaged in an SOT-223 case, designed for general purpose amplifier applications requiring high breakdown voltage.

MARKING: FULL PART NUMBER

FEATURES:

- High Collector Breakdown Voltage 250V
- Low Leakage Current 50nA MAX
- Low Saturation Voltage 100mV MAX @ 50mA
- Complementary Device: CZT5401E
- SOT-223 Surface Mount Package



SOT-223 CASE



APPLICATIONS:

- General purpose switching and amplification
- Telephone applications

MAXIMUM RATINGS: (T_A=25°C)

| |
|--|
| ◆ Collector-Base Voltage |
| ◆ Collector-Emitter Voltage |
| Emitter-Base Voltage |
| Continuous Collector Current |
| Power Dissipation |
| Operating and Storage Junction Temperature |
| Thermal Resistance |

SYMBOL

| | | |
|---------------------------------------|-------------|----------|
| V_{CBO} | 250 | V |
| V_{CEO} | 220 | V |
| V_{EBO} | 6.0 | V |
| I_C | 600 | mA |
| P_D | 2.0 | W |
| T_J, T_{stg} | -65 to +150 | °C |
| θ_{JA} | 62.5 | °C/W |

UNITS

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

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|------------------------------|--|------------|------------|--------------|
| I _{CBO} | V _{CB} =120V | | 50 | nA |
| I _{CBO} | V _{CB} =120V, T _A =100°C | | 50 | μA |
| I _{EBO} | V _{EB} =4.0V | | 50 | nA |
| ◆ BV_{CBO} | I_C=100μA | 250 | | V |
| ◆ BV_{CEO} | I_C=1.0mA | 220 | | V |
| BV _{EBO} | I _E =10μA | 6.0 | | V |
| ◆ V_{CE(SAT)} | I_C=10mA, I_B=1.0mA | | 75 | mV |
| ◆ V_{CE(SAT)} | I_C=50mA, I_B=5.0mA | | 100 | mV |
| V _{BE(SAT)} | I _C =10mA, I _B =1.0mA | | 1.00 | V |
| V _{BE(SAT)} | I _C =50mA, I _B =5.0mA | | 1.00 | V |

◆ Enhanced specification

R1 (1-March 2010)

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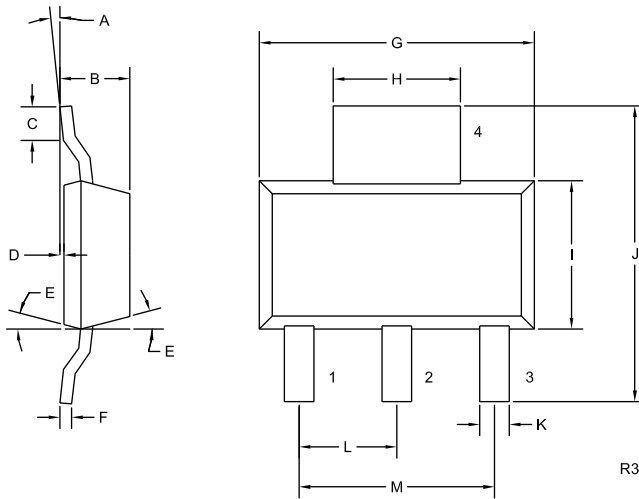


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|------------|---|-----|-----|-------|
| ◆ h_{FE} | $V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$ | 120 | | |
| ◆ h_{FE} | $V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$ | 120 | 300 | |
| ◆ h_{FE} | $V_{CE}=5.0\text{V}$, $I_C=50\text{mA}$ | 75 | | |
| ◆ h_{FE} | $V_{CE}=10\text{V}$, $I_C=150\text{mA}$ | 25 | | |
| 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 |
| C_{ib} | $V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$ | | 20 | 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 15.7kHz | | 8.0 | dB |

◆ Enhanced specification

SOT-223 CASE - MECHANICAL OUTLINE



| SYMBOL | INCHES | | MILLIMETERS | |
|--------|--------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0° | 10° | 0° | 10° |
| B | 0.059 | 0.071 | 1.50 | 1.80 |
| C | 0.018 | --- | 0.45 | --- |
| D | 0.000 | 0.004 | 0.00 | 0.10 |
| E | 15° | | 15° | |
| F | 0.009 | 0.014 | 0.23 | 0.35 |
| G | 0.248 | 0.264 | 6.30 | 6.70 |
| H | 0.114 | 0.122 | 2.90 | 3.10 |
| I | 0.130 | 0.146 | 3.30 | 3.70 |
| J | 0.264 | 0.287 | 6.70 | 7.30 |
| K | 0.024 | 0.033 | 0.60 | 0.85 |
| L | 0.091 | | 2.30 | |
| M | 0.181 | | 4.60 | |

SOT-223 (REV: R3)

LEAD CODE:

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

MARKING:

FULL PART NUMBER

R1 (1-March 2010)