

CZT5551E

**ENHANCED SPECIFICATION  
SURFACE MOUNT  
NPN SILICON TRANSISTOR**



www.centrasemi.com



**SOT-223 CASE**

**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

**APPLICATIONS:**

- General purpose switching and amplification
- Telephone applications

**MAXIMUM RATINGS: (T<sub>A</sub>=25°C)**

◆ <b>Collector-Base Voltage</b>	
◆ <b>Collector-Emitter Voltage</b>	
Emitter-Base Voltage	
Continuous Collector Current	
Power Dissipation	
Operating and Storage Junction Temperature	
Thermal Resistance	

**SYMBOL**

<b>V<sub>CBO</sub></b>	<b>250</b>	<b>V</b>
<b>V<sub>CEO</sub></b>	<b>220</b>	<b>V</b>
<b>V<sub>EBO</sub></b>	6.0	V
<b>I<sub>C</sub></b>	600	mA
<b>P<sub>D</sub></b>	2.0	W
<b>T<sub>J</sub>, T<sub>stg</sub></b>	-65 to +150	°C
<b>θ<sub>JA</sub></b>	62.5	°C/W

**ELECTRICAL CHARACTERISTICS: (T<sub>A</sub>=25°C unless otherwise noted)**

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>CBO</sub>	V <sub>CB</sub> =120V		50	nA
I <sub>CBO</sub>	V <sub>CB</sub> =120V, T <sub>A</sub> =100°C		50	μA
I <sub>EBO</sub>	V <sub>EB</sub> =4.0V		50	nA
◆ <b>BV<sub>CBO</sub></b>	<b>I<sub>C</sub>=100μA</b>	<b>250</b>		<b>V</b>
◆ <b>BV<sub>CEO</sub></b>	<b>I<sub>C</sub>=1.0mA</b>	<b>220</b>		<b>V</b>
BV <sub>EBO</sub>	I <sub>E</sub> =10μA	6.0		V
◆ <b>V<sub>CE(SAT)</sub></b>	<b>I<sub>C</sub>=10mA, I<sub>B</sub>=1.0mA</b>		<b>75</b>	<b>mV</b>
◆ <b>V<sub>CE(SAT)</sub></b>	<b>I<sub>C</sub>=50mA, I<sub>B</sub>=5.0mA</b>		<b>100</b>	<b>mV</b>
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		1.00	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA		1.00	V

◆ Enhanced specification

R1 (1-March 2010)

CZT5551E

**ENHANCED SPECIFICATION  
SURFACE MOUNT  
NPN SILICON TRANSISTOR**

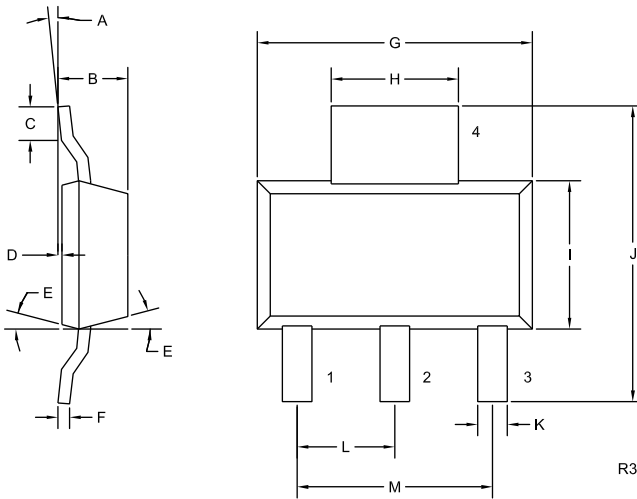


**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

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 $15.7\text{kHz}$		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)

## 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 (2<sup>nd</sup> 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

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centalsemi.com](http://www.centalsemi.com)

**Worldwide Field Representatives:**  
[www.centalsemi.com/wwreps](http://www.centalsemi.com/wwreps)

**Worldwide Distributors:**  
[www.centalsemi.com/wwdistributors](http://www.centalsemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centalsemi.com/terms](http://www.centalsemi.com/terms)