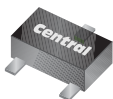


CMUT5551E

**ENHANCED SPECIFICATION
SURFACE MOUNT
NPN SILICON TRANSISTOR**

ULTRAmini™



SOT-523 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT5551E is an NPN Silicon Transistor, packaged in an SOT-523 case, designed for general purpose amplifier applications requiring high breakdown voltage and small space saving packaging.

MARKING CODE: 5C1

FEATURES:

- High Collector Breakdown Voltage 250V
- Low Leakage Current 50nA Max
- Low Saturation Voltage 100mV Max @ 50mA
- Complementary Device CMUT5401E
- SOT-523 Surface Mount Package

APPLICATIONS:

- General purpose switching and amplification
- Telephone applications

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

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

SYMBOL		UNITS
V_{CBO}	250	V
V_{CEO}	220	V
V_{EBO}	6.0	V
I_C	600	mA
P_D	250	mW
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
θ_{JA}	500	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=120\text{V}$		50	nA
I_{CBO}	$V_{CB}=120\text{V}, T_A=100^\circ\text{C}$		50	μA
I_{EBO}	$V_{EB}=4.0\text{V}$		50	nA
◆ BV_{CBO}	$I_C=100\mu\text{A}$	250		V
◆ BV_{CEO}	$I_C=1.0\text{mA}$	220		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
◆ $V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		75	mV
◆ $V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		100	mV
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		1.00	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.00	V

◆ Enhanced Specification

R1 (9-February 2010)

CMUT5551E

**ENHANCED SPECIFICATION
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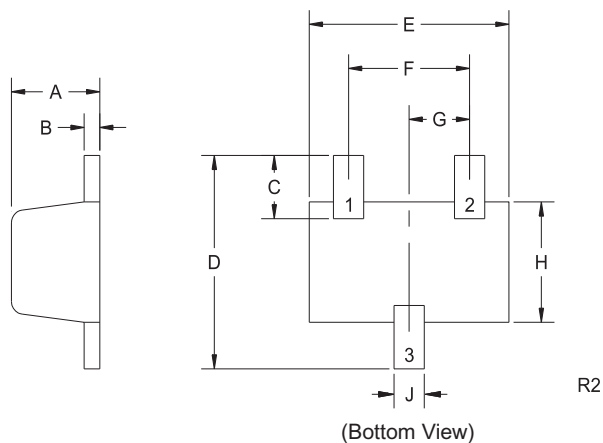


ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

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-523 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	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)

LEAD CODE:

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

MARKING CODE: 5C1

R1 (9-February 2010)