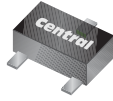


CMUT2222A
SURFACE MOUNT
NPN SILICON TRANSISTOR

ULTRAmiTM



SOT-523 CASE

CentralTM
Semiconductor Corp.

www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMUT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in an ULTRAmiTM surface mount package, designed for small signal general purpose and switching applications.

MARKING CODE: PC1

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	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	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60\text{V}$		10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$		10	μA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$		10	nA
I_{EBO}	$V_{EB}=3.0\text{V}$		10	nA
BV_{CBO}	$I_C=10\mu\text{A}$	75		V
BV_{CEO}	$I_C=10\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.3	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.0	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$	0.6	1.2	V
$V_{BE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$		2.0	V
h_{FE}	$V_{CE}=10\text{V}, I_C=0.1\text{mA}$	35		
h_{FE}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=10\text{mA}$	75		
h_{FE}	$V_{CE}=10\text{V}, I_C=150\text{mA}$	100	300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	50		
h_{FE}	$V_{CE}=10\text{V}, I_C=500\text{mA}$	40		

R3 (9-February 2010)

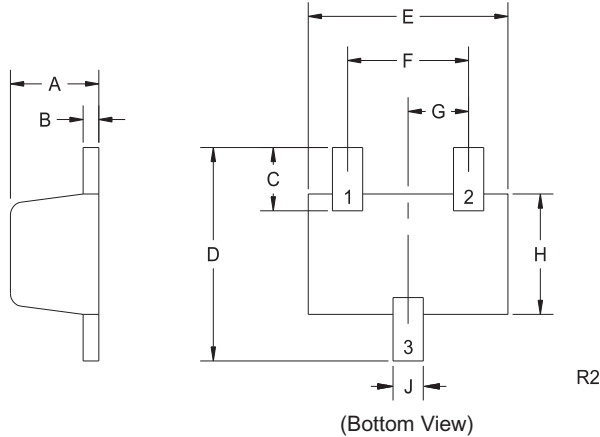
CMUT2222A
SURFACE MOUNT
NPN SILICON TRANSISTOR



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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
f_T	$V_{CE}=20\text{V}$, $I_C=20\text{mA}$, $f=100\text{MHz}$	300		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		8.0	pF
C_{ib}	$V_{EB}=0.5\text{V}$, $I_C=0$, $f=1.0\text{MHz}$		25	pF
h_{ie}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	2.0	8.0	$k\Omega$
h_{ie}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	0.25	1.25	$k\Omega$
h_{re}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$		8.0	$\times 10^{-4}$
h_{re}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$		4.0	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	50	300	
h_{fe}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	75	375	
h_{oe}	$V_{CE}=10\text{V}$, $I_C=1.0\text{mA}$, $f=1.0\text{kHz}$	5.0	35	μS
h_{oe}	$V_{CE}=10\text{V}$, $I_C=10\text{mA}$, $f=1.0\text{kHz}$	25	200	μS
$rb'C_c$	$V_{CB}=10\text{V}$, $I_E=20\text{mA}$, $f=31.8\text{MHz}$		150	ps
NF	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$, $R_S=1.0k\Omega$, $f=1.0\text{kHz}$		4.0	dB
t_d	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$		10	ns
t_r	$V_{CC}=30\text{V}$, $V_{BE}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$		25	ns
t_s	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$		225	ns
t_f	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=I_{B2}=15\text{mA}$		60	ns

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: PC1

R3 (9-February 2010)