

CXT2222A
SURFACE MOUNT
NPN SILICON TRANSISTOR



SOT-89 CASE

CentralTM

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for small signal general purpose and switching applications.

MARKING CODE: FULL PART NUMBER

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

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

SYMBOL

V_{CB0} 75
 V_{CEO} 40
 V_{EBO} 6.0
 I_C 600
 P_D 1.2
 T_J, T_{stg} -65 to +150
 θ_{JA} 104

UNITS

V
V
V
mA
W
°C
°C/W

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

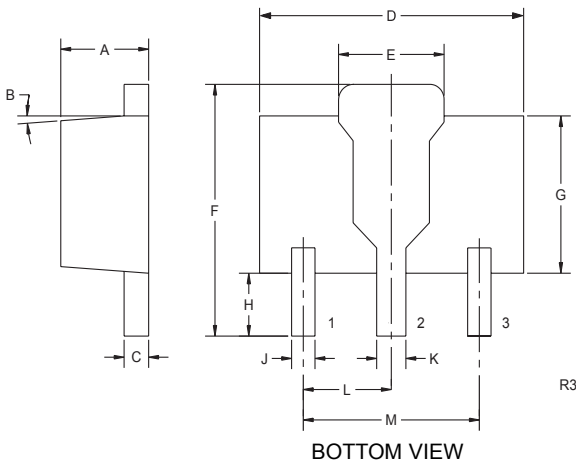
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60\text{V}$		10	nA
I_{CBO}	$V_{CB}=60\text{V}, T_A=125^\circ\text{C}$		10	μA
I_{EBO}	$V_{EB}=3.0\text{V}$		10	nA
I_{CEV}	$V_{CE}=60\text{V}, V_{EB}=3.0\text{V}$		10	nA
BV_{CBO}	$I_C=10\mu\text{A}$	75		V
BV_{CEO}	$I_C=10\text{mA}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	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		
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

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ELECTRICAL CHARACTERISTICS (Continued)

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

SOT-89 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.067	1.40	1.70
B	4°		4°	
C	0.016	0.018	0.40	0.46
D	0.173	0.185	4.40	4.70
E	0.070	0.074	1.79	1.87
F	0.146	0.177	3.70	4.50
G	0.094	0.106	2.40	2.70
H	0.028	0.051	0.70	1.30
J	0.015	0.019	0.38	0.48
K	0.019	0.023	0.48	0.58
L	0.059		1.50	
M	0.118		3.00	

SOT-89 (REV: R3)

LEAD CODE:

- 1) EMITTER
- 2) COLLECTOR
- 3) BASE

MARKING CODE:

FULL PART NUMBER