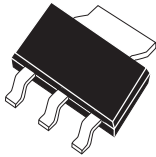


**CZT2222A**

**NPN SILICON TRANSISTOR**



**SOT-223 CASE**

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CZT2222A type is an NPN silicon transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for general purpose amplifier and switching applications.

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

	SYMBOL		UNITS
Collector-Base Voltage	V <sub>CBO</sub>	75	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	V
Collector Current	I <sub>C</sub>	600	mA
Power Dissipation	P <sub>D</sub>	2.0	W
Operating and Storage			
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +150	°C
Thermal Resistance	θ <sub>JA</sub>	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> =60V		10	nA
I <sub>CBO</sub>	V <sub>CB</sub> =60V, T <sub>A</sub> =125°C		10	μA
I <sub>EBO</sub>	V <sub>EB</sub> =3.0V		10	nA
I <sub>CEV</sub>	V <sub>CE</sub> =60V, V <sub>EB</sub> =3.0V		10	nA
BV <sub>CBO</sub>	I <sub>C</sub> =10μA	75		V
BV <sub>CEO</sub>	I <sub>C</sub> =10mA	40		V
BV <sub>EBO</sub>	I <sub>E</sub> =10μA	6.0		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA		0.3	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		1.0	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA	0.6	1.2	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA		2.0	V
h <sub>FE</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1mA	35		
h <sub>FE</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =1.0mA	50		
h <sub>FE</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA	75		

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$h_{FE}$	$V_{CE}=10V, I_C=150mA$	100	300	
$h_{FE}$	$V_{CE}=1.0V, I_C=150mA$	50		
$h_{FE}$	$V_{CE}=10V, I_C=500mA$	40		
$f_T$	$V_{CE}=20V, I_C=20mA, f=100MHz$	300		MHz
$C_{ob}$	$V_{CB}=10V, I_E=0, f=1.0MHz$		8.0	pF
$C_{ib}$	$V_{EB}=0.5V, I_C=0, f=1.0MHz$		25	pF
$h_{ie}$	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	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

All dimensions in inches (mm).

