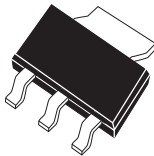


CZT2222A

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_{C}	600	mA
Power Dissipation	P_{D}	2.0	W
Operating and Storage			
Junction Temperature	$T_{\text{J}}, T_{\text{stg}}$	-65 to +150	$^{\circ}\text{C}$
Thermal Resistance	θ_{JA}	62.5	$^{\circ}\text{C/W}$

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

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

