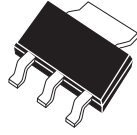


CZT3904 NPN
CZT3906 PNP

COMPLEMENTARY
SILICON TRANSISTORS



SOT-223 CASE

CentralTM
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3904, CZT3906 types are complementary silicon transistors 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: ($T_A=25^\circ\text{C}$)

	SYMBOL	CZT3904	CZT3906	UNITS
Collector-Base Voltage	V_{CBO}	60	40	V
Collector-Emitter Voltage	V_{CEO}	40	40	V
Emitter-Base Voltage	V_{EBO}	6.0	5.0	V
Collector Current	I_C		200	mA
Power Dissipation	P_D		2.0	W
Operating and Storage				
Junction Temperature	T_J, T_{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)

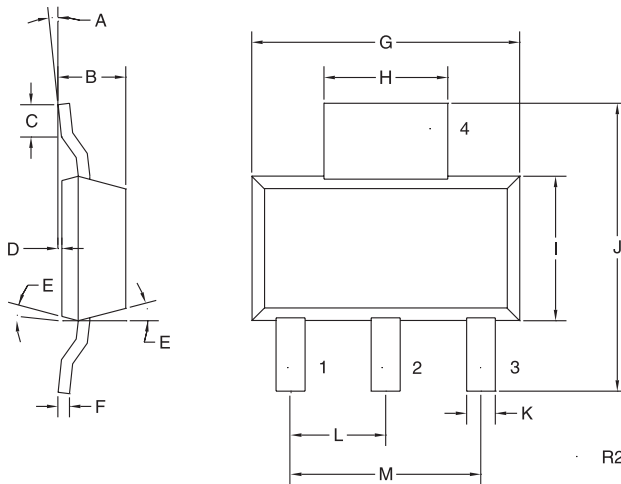
SYMBOL	TEST CONDITIONS	CZT3904		CZT3906		UNITS
		MIN	MAX	MIN	MAX	
I_{CEV}	$V_{CE}=30V, V_{EB}=3.0V$		50		50	nA
BV_{CBO}	$I_C=10\mu A$	60		40		V
BV_{CEO}	$I_C=1.0mA$	40		40		V
BV_{EBO}	$I_E=10\mu A$	6.0		5.0		V
$V_{CE(SAT)}$	$I_C=10mA, I_B=1.0mA$		0.20		0.25	V
$V_{CE(SAT)}$	$I_C=50mA, I_B=5.0mA$		0.30		0.40	V
$V_{BE(SAT)}$	$I_C=10mA, I_B=1.0mA$	0.65	0.85	0.65	0.85	V
$V_{BE(SAT)}$	$I_C=50mA, I_B=5.0mA$		0.95		0.95	V
h_{FE}	$V_{CE}=1.0V, I_C=0.1mA$	40		60		
h_{FE}	$V_{CE}=1.0V, I_C=1.0mA$	70		80		
h_{FE}	$V_{CE}=1.0V, I_C=10mA$	100	300	100	300	
h_{FE}	$V_{CE}=1.0V, I_C=50mA$	60		60		
h_{FE}	$V_{CE}=1.0V, I_C=100mA$	30		30		
f_T	$V_{CE}=20V, I_C=10mA, f=100MHz$	300		250		MHz
C_{ob}	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		4.0		4.5	pF
C_{ib}	$V_{BE}=0.5V, I_C=0, f=1.0MHz$		8.0		10	pF
h_{ie}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	10	2.0	12	k Ω

R3 (26-September 2002)

COMPLEMENTARY
SILICON TRANSISTORS

SYMBOL	TEST CONDITIONS	CZT3904		CZT3906		UNITS
		MIN	MAX	MIN	MAX	
h_{re}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	0.5	8.0	0.1	10	$\times 10^{-4}$
h_{fe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	100	400	100	400	
h_{oe}	$V_{CE}=10V, I_C=1.0mA, f=1.0kHz$	1.0	40	3.0	60	$\mu mhos$
NF	$V_{CE}=5.0V, I_C=100\mu A, R_S=1.0k\Omega$ $f=10Hz$ to $15.7kHz$		5.0		4.0	dB
t_d	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35		35	ns
t_r	$V_{CC}=3.0V, V_{BE}=0.5V, I_C=10mA, I_{B1}=1.0mA$		35		35	ns
t_s	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		200		225	ns
t_f	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		50		75	ns

SOT-223 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0°	7°	0°	7°
B	0.063	0.067	1.60	1.70
C	0.022		0.55	
D	0.001	0.004	0.03	0.10
E	15°		15°	
F	0.009	0.013	0.23	0.33
G	0.248	0.264	6.30	6.71
H	0.114	0.122	2.90	3.10
I	0.130	0.146	3.30	3.71
J	0.264	0.287	6.71	7.29
K	0.024	0.031	0.61	0.79
L	0.091		2.31	
M	0.181		4.60	

SOT-223 (REV: R2)

LEAD CODE:

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

MARKING CODE:

FULL PART NUMBER

R3 (26-September 2002)