

CZT953

**SURFACE MOUNT SILICON
HIGH CURRENT
PNP TRANSISTOR**



SOT-223 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT953 is a silicon high current PNP transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for high voltage and high current amplifier applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage	V_{CBO}	140	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	5.0	A
Power Dissipation (Note 1)	P_D	3.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	Θ_{JA}	41.7	$^\circ\text{C/W}$

SYMBOL

V_{CBO}	140	V
V_{CEO}	100	V
V_{EBO}	6.0	V
I_C	5.0	A
P_D	3.0	W
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Θ_{JA}	41.7	$^\circ\text{C/W}$

UNITS

Note 1: FR-4 Epoxy PC Board with copper mounting pad area of 4in^2 (minimum).

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=100\text{V}$			50	nA
I_{CBO}	$V_{CB}=100\text{V}, T_A=100^\circ\text{C}$			1.0	μA
I_{CER}	$V_{CE}=100\text{V}, R_{BE}\leq 1.0\text{k}\Omega$			50	nA
I_{EBO}	$V_{EB}=6.0\text{V}$			10	nA
BV_{CBO}	$I_C=100\mu\text{A}$	140	170		V
BV_{CER}	$I_C=10\text{mA}, R_{BE}\leq 1.0\text{k}\Omega$	140	150		V
BV_{CEO}	$I_C=1.0\text{mA}$ (Note 2)	100	120	140	V
BV_{EBO}	$I_E=100\mu\text{A}$	6.0	9.0		V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		20	50	mV
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		90	120	mV
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		170	220	mV
$V_{CE(SAT)}$	$I_C=4.0\text{A}, I_B=400\text{mA}$		320	420	mV
$V_{BE(SAT)}$	$I_C=4.0\text{A}, I_B=400\text{mA}$		1.0	1.2	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100			
h_{FE}	$V_{CE}=1.0\text{V}, I_C=1.0\text{A}$	100	200	300	
h_{FE}	$V_{CE}=1.0\text{V}, I_C=3.0\text{A}$	50	70		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=4.0\text{A}$	30	45		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{A}$		15		
f_T	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=50\text{MHz}$		150		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		45		pF

Note 2: Pulse Test: Pulse Width = $100\mu\text{s}$

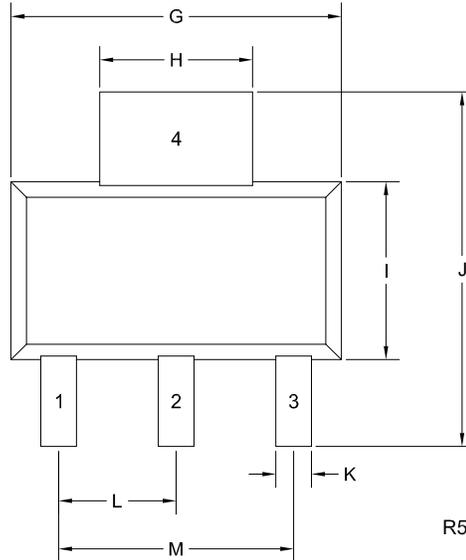
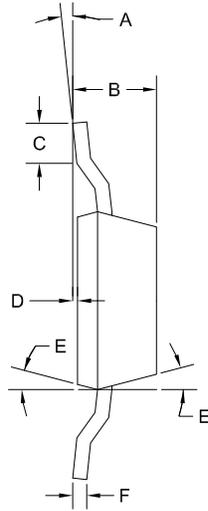
R7 (10-May 2019)

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SOT-223 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Base
- 2) Collector
- 3) Emitter
- 4) Collector

MARKING:

FULL PART NUMBER

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0°	10°	0°	10°
B	0.059	0.071	1.50	1.80
C	0.018	---	0.45	---
D	0.000	0.004	0.00	0.10
E	10°		10°	
F	0.009	0.014	0.23	0.35
G	0.248	0.270	6.30	6.85
H	0.114	0.122	2.90	3.10
I	0.130	0.146	3.30	3.70
J	0.264	0.287	6.70	7.30
K	0.024	0.033	0.60	0.85
L	0.091		2.30	
M	0.181		4.60	

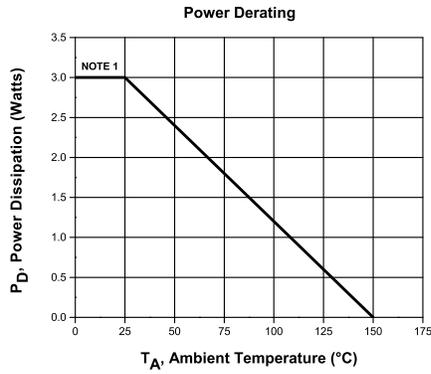
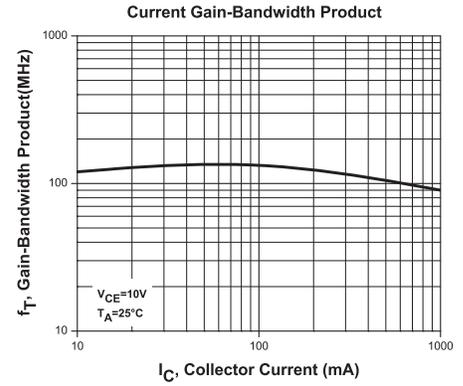
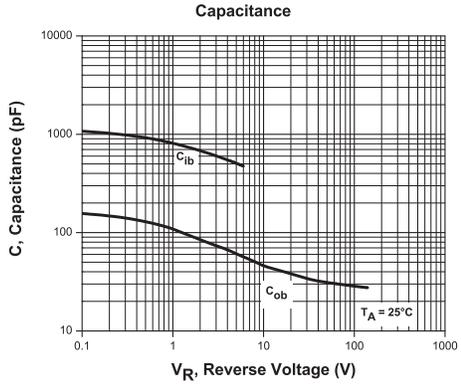
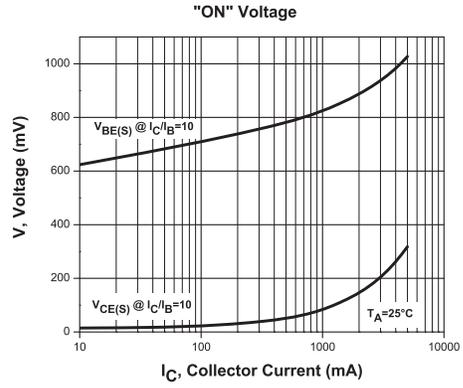
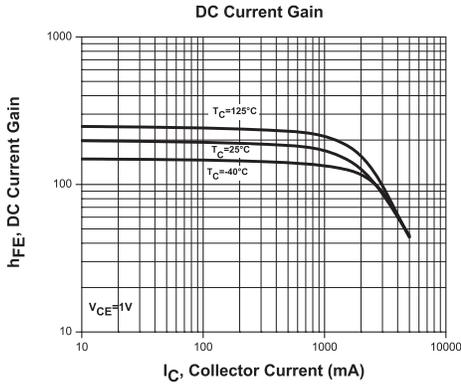
SOT-223 (REV: R5)

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TYPICAL ELECTRICAL CHARACTERISTICS



R7 (10-May 2019)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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