

CZT3090LE

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
LOW $V_{CE(SAT)}$
NPN POWER TRANSISTOR**



www.centrasemi.com



SOT-223 CASE

APPLICATIONS:

- Power Management / DC-DC Converters
- Portable and Battery Powered Products
- LAN Equipment / Motor Controllers

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

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

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
♦ I_{CBO}	$V_{CB}=50\text{V}$			50	nA
♦ I_{EBO}	$V_{EB}=5.0\text{V}$			50	nA
♦ BV_{CBO}	$I_C=100\mu\text{A}$	60			V
♦ BV_{CEO}	$I_C=10\text{mA}$	50			V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0			V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=1.0\text{mA}$		37	50	mV
♦ $V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=20\text{mA}$		66	100	mV
♦ $V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		77	150	mV
♦ $V_{CE(SAT)}$	$I_C=3.0\text{A}, I_B=60\text{mA}$		155	250	mV
♦ h_{FE}	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$	300			
♦ h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	300			
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.0\text{A}$	150	174		
♦ C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$			25	pF
f_T	$V_{CE}=10\text{V}, I_C=500\text{mA}$	100			MHz

♦ Enhanced Specification

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CZT3090LE is an Enhanced Specification low $V_{CE(SAT)}$ NPN silicon power transistor packaged in an industry standard SOT-223 case. High Collector Current, coupled with a Low Saturation Voltage, make this an excellent choice for industrial and consumer applications where electrical and thermal operational efficiency are top priorities.

MARKING: FULL PART NUMBER

FEATURES:

- Low $V_{CE(SAT)}$ NPN Transistor
- High Current ($I_C=3.0\text{A MAX}$)
- $V_{CE(SAT)}=0.155\text{V TYP @ } I_C=3.0\text{A}$
- SOT-223 Surface Mount Package
- Complementary PNP device: CZT7090LE

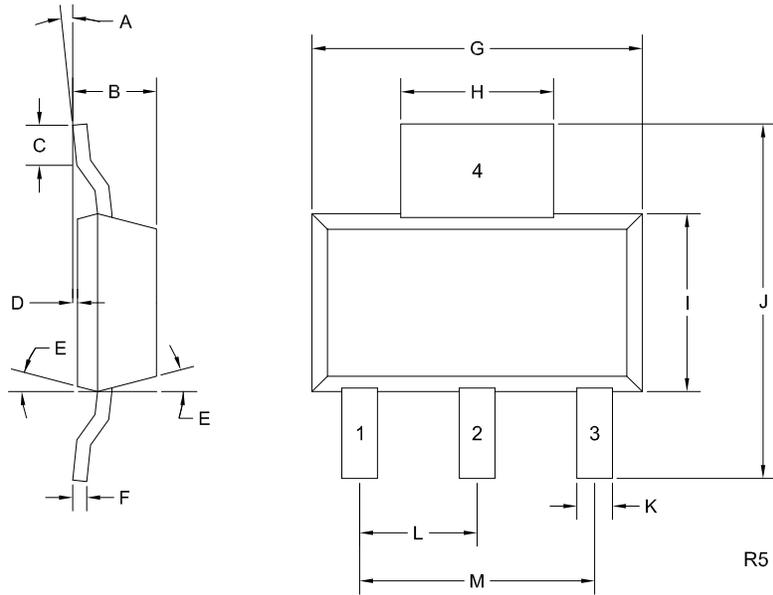
SYMBOL		UNITS
V_{CBO}	60	V
V_{CEO}	50	V
V_{EBO}	6.0	V
I_C	3.0	A
I_{CM}	5.0	A
P_D	2.0	W
T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Θ_{JA}	62.5	$^\circ\text{C/W}$

CZT3090LE

**ENHANCED SPECIFICATION
SURFACE MOUNT SILICON
LOW $V_{CE(SAT)}$
NPN POWER TRANSISTOR**



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)

R3 (9-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).

CONTACT US

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centrasemi.com

Worldwide Field Representatives:
www.centrasemi.com/wwreps

Worldwide Distributors:
www.centrasemi.com/wwdistributors

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms