

CXT3820

**SURFACE MOUNT
VERY LOW $V_{CE(SAT)}$
NPN SILICON TRANSISTOR**

**POWER[™]
89**



SOT-89 CASE

• Device is **Halogen Free** by design

FEATURES:

- High Current ($I_C=1.0A$)
- $V_{CE(SAT)}=0.28V$ MAX @ $I_C=1.0A$
- SOT-89 surface mount package
- Complementary PNP device: CXT7820

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

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



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CXT3820 is a very low $V_{CE(SAT)}$ NPN transistor designed for applications where electrical and thermal efficiency are prime requirements. Packaged in an industry standard SOT-89 case, this device brings updated electrical specifications and characteristics suitable for the most demanding designs.

MARKING: FULL PART NUMBER

APPLICATIONS:

- DC/DC Converters
- Voltage Clamping
- Protection Circuits
- Battery powered Cell Phones, Pagers, Digital Cameras, PDAs, Laptops, etc.

SYMBOL

SYMBOL		UNITS
V_{CBO}	80	V
V_{CEO}	60	V
V_{EBO}	5.0	V
I_C	1.0	A
I_{CM}	2.0	A
I_B	300	mA
P_D	1.2	W
T_J, T_{stg}	-65 to +150	$^\circ C$
Θ_{JA}	104	$^\circ C/W$

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

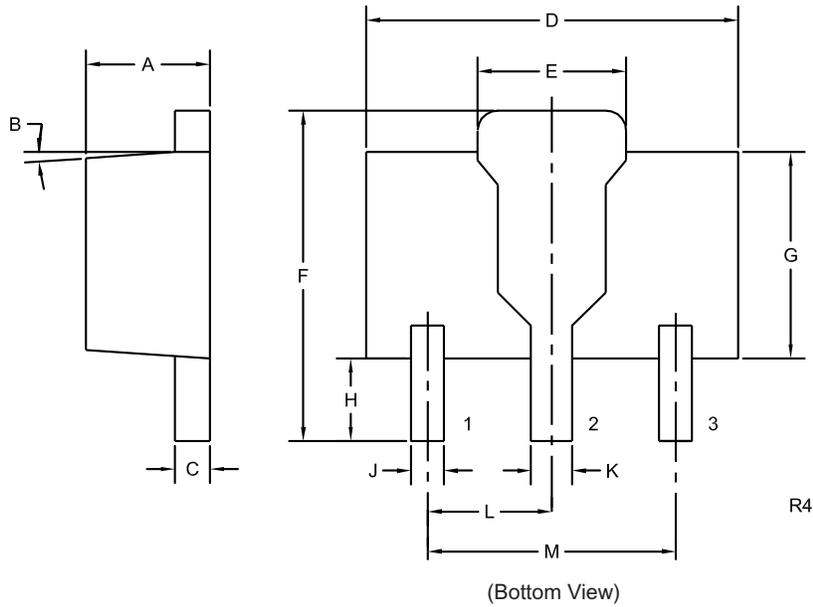
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=60V$		100	nA
I_{EBO}	$V_{EB}=5.0V$		100	nA
BV_{CBO}	$I_C=100\mu A$	80		V
BV_{CEO}	$I_C=10mA$	60		V
BV_{EBO}	$I_E=100\mu A$	5.0		V
$V_{CE(SAT)}$	$I_C=100mA, I_B=1.0mA$		0.115	V
$V_{CE(SAT)}$	$I_C=500mA, I_B=50mA$		0.15	V
$V_{CE(SAT)}$	$I_C=1.0A, I_B=100mA$		0.28	V
$V_{BE(SAT)}$	$I_C=1.0A, I_B=50mA$		1.1	V
$V_{BE(ON)}$	$V_{CE}=5.0V, I_C=1.0A$		0.9	V
h_{FE}	$V_{CE}=5.0V, I_C=1.0mA$	200		
h_{FE}	$V_{CE}=5.0V, I_C=500mA$	200		
h_{FE}	$V_{CE}=5.0V, I_C=1.0A$	100		
f_T	$V_{CE}=10V, I_C=50mA$	150		MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=1.0MHz$		10	pF

R1 (23-February 2010)

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SOT-89 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

MARKING:
FULL PART NUMBER

DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.067	1.40	1.70
B	4°		4°	
C	0.014	0.018	0.35	0.46
D	0.173	0.185	4.40	4.70
E	0.064	0.074	1.62	1.87
F	0.146	0.177	3.70	4.50
G	0.090	0.106	2.29	2.70
H	0.028	0.051	0.70	1.30
J	0.014	0.019	0.36	0.48
K	0.017	0.023	0.44	0.58
L	0.059		1.50	
M	0.118		3.00	

SOT-89 (REV: R4)

R1 (23-February 2010)

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

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