



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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**CMPT3820**

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

**SOT-23 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMPT3820 is a very low  $V_{CE(SAT)}$  NPN Transistor, designed for applications where size and efficiency are prime requirements. Packaged in an industry standard SOT-23, this device brings updated electrical specifications and characteristics suitable for the most demanding designs.

**MARKING CODE: 38C****APPLICATIONS:**

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

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

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

**FEATURES:**

- Device is **Halogen Free** by design
- High Current ( $I_C=1.0\text{A}$ )
- $V_{CE(SAT)}=0.28\text{V MAX @ } I_C=1.0\text{A}$
- SOT-23 surface mount package
- Complementary PNP device **CMPT7820**

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
$P_D$	350	mW
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	357	$^\circ\text{C/W}$

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

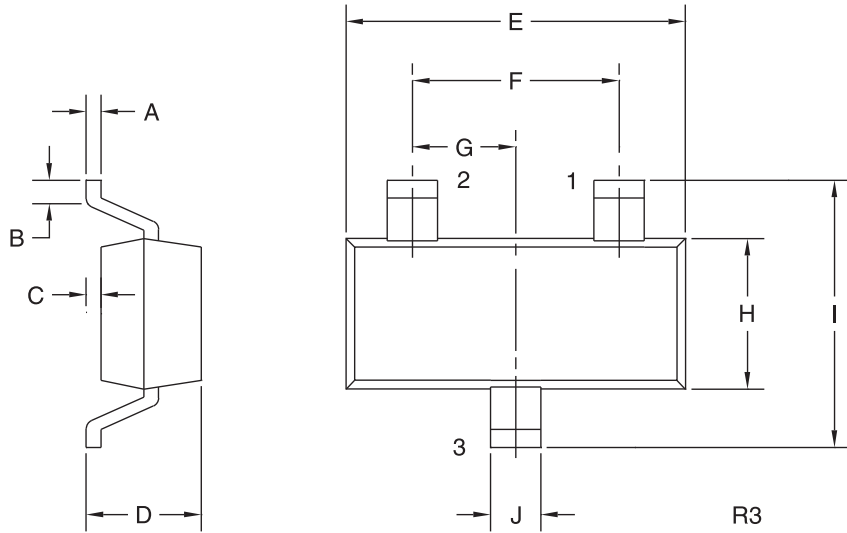
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=60\text{V}$		100	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		100	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	80		V
$BV_{CEO}$	$I_C=10\text{mA}$	60		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	5.0		V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=1.0\text{mA}$		0.115	V
$V_{CE(SAT)}$	$I_C=500\text{mA},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

R1 (1-February 2010)

**CMPT3820**  
**SURFACE MOUNT**  
**VERY LOW  $V_{CE(SAT)}$**   
**NPN SILICON TRANSISTOR**



**SOT-23 CASE - MECHANICAL OUTLINE**



**LEAD CODE:**

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

**MARKING CODE: 38C**

<b>DIMENSIONS</b>				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.003	0.007	0.08	0.18
B	0.006	-	0.15	-
C	-	0.005	-	0.13
D	0.035	0.043	0.89	1.09
E	0.110	0.120	2.80	3.05
F	0.075		1.90	
G	0.037		0.95	
H	0.047	0.055	1.19	1.40
I	0.083	0.098	2.10	2.49
J	0.014	0.020	0.35	0.50

SOT-23 (REV: R3)

R1 (1-February 2010)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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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### CONTACT US

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