

CMPT7820

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



SOT-23 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMPT7820 is a very low $V_{CE(SAT)}$ PNP 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: 78C

APPLICATIONS:

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

FEATURES:

- Device is **Halogen Free** by design
- High Current ($I_C=1.0A$)
- $V_{CE(SAT)}=0.34V$ MAX @ $I_C=1.0A$
- SOT-23 surface mount package
- Complementary NPN device **CMPT3820**

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

Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	1.0	A
Peak Collector Current	I_{CM}	2.0	A
Continuous Base Current	I_B	300	mA
Power Dissipation	P_D	350	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ C$
Thermal Resistance	θ_{JA}	357	$^\circ C/W$

SYMBOL

SYMBOL	MIN	MAX	UNITS
V_{CBO}	80	100	V
V_{CEO}	60	100	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		$^\circ C$
θ_{JA}	357		$^\circ C/W$

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
$V_{CE(SAT)}$	$I_C=100mA, I_B=1.0mA$		0.175	V
$V_{CE(SAT)}$	$I_C=500mA, I_B=50mA$		0.18	V
$V_{CE(SAT)}$	$I_C=1.0A, I_B=100mA$		0.34	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}	$V_{CE}=5.0V, I_C=500mA$	150		
h_{FE}	$V_{CE}=5.0V, I_C=1.0A$	100		
f_T	$V_{CE}=10V, I_C=50mA$	150		MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=1.0MHz$		15	pF

R1 (1-February 2010)

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SOT-23 CASE - MECHANICAL OUTLINE



LEAD CODE:

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

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DIMENSIONS				
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



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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