

CMLT3820G
SURFACE MOUNT SILICON
VERY LOW $V_{CE(SAT)}$
NPN TRANSISTOR



SOT-563 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CMLT3820G is a very low $V_{CE(SAT)}$ NPN Transistor, designed for applications where small size and efficiency are the prime requirements. Packaged in a space saving SOT-563 surface mount package, this component provides performance characteristics suitable for the most demanding size constrained applications.

MARKING CODE: 38G

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 ($I_C=1.0\text{A}$)
- $V_{CE(SAT)}=0.28\text{V MAX @ } I_C=1.0\text{A}$
- SOT563 surface mount package
- Complementary PNP device **CMLT7820G**

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	250	mW
T_J, T_{stg}	-65 to +150	$^{\circ}\text{C}$
Θ_{JA}	500	$^{\circ}\text{C/W}$

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

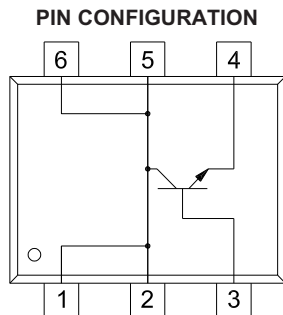
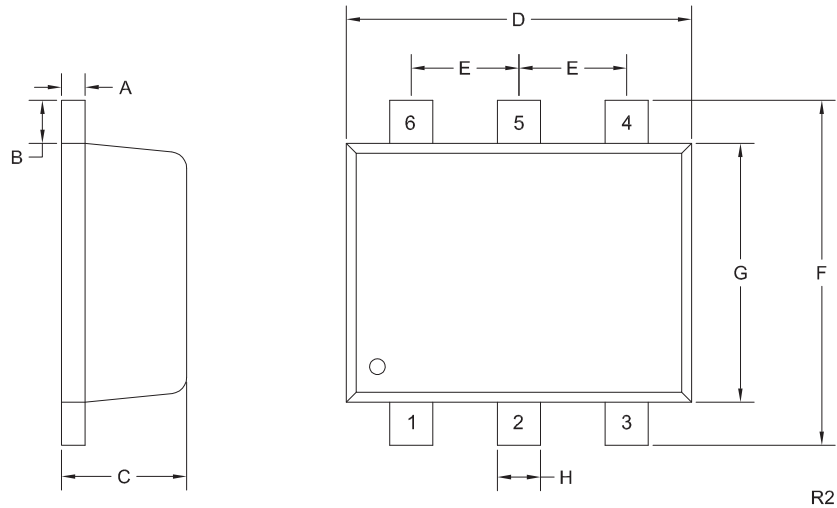
R4 (29-June 2015)

CMLT3820G

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



SOT-563 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.0027	0.007	0.07	0.18
B	0.008		0.20	
C	0.017	0.024	0.45	0.60
D	0.059	0.067	1.50	1.70
E	0.020		0.50	
F	0.059	0.067	1.50	1.70
G	0.043	0.051	1.10	1.30
H	0.006	0.012	0.15	0.30

SOT-563 (REV: R2)

LEAD CODE:

- 1) Collector
 - 2) Collector
 - 3) Base
 - 4) Emitter
 - 5) Collector
 - 6) Collector
- Pins 1, 2, 5 and 6 are common.

MARKING CODE: 38G

R4 (29-June 2015)

CMLT3820G

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



SERVICES

- Bonded Inventory
- Custom Electrical Screening
- Custom Electrical Characteristic Curves
- SPICE Models
- Custom Packaging
- Package Base Options
- Custom Device Development/ Multi Discrete Modules (MDM™)
- Bare Die Available for Hybrid Applications

LIMITATIONS AND DAMAGES DISCLAIMER: In no event shall Central be liable for any collateral, indirect, punitive, incidental, consequential, or exemplary damages in connection with or arising out of a purchase order or contract or the use of products provided hereunder, regardless of whether Central has been advised of the possibility of such damages. Excluded damages shall include, but not be restricted to: cost of removal or reinstallation, rework, ancillary costs to the procurement of substitute products, loss of profits, loss of savings, loss of use, loss of data, or business interruption. No claim, suit, or action shall be brought against Central more than two (2) years after the related cause of action has occurred.

In no event shall Central's aggregate liability from any warranty, indemnity, or other obligation arising out of or in connection with a purchase order or contract, or any use of any Central product provided hereunder, exceed the total amount paid to Central for the specific products sold under a purchase order or contract with respect to which losses or damages are claimed. The existence of more than one (1) claim against the specific products sold to Buyer under a purchase order or contract shall not enlarge or extend this limit.

Buyer understands and agrees that the foregoing liability limitations are essential elements of a purchase order or contract and that in the absence of such limitations, the material and economic terms of the purchase order or contract would be substantially different.

R4 (29-June 2015)