



**THE DATASHEET OF  
CMLT3820G TR PBFREE**



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**

**FEATURES:**

- Device is **Halogen Free** by design
- High Current ( $I_C=1.0A$ )
- $V_{CE(SAT)}=0.28V$  MAX @  $I_C=1.0A$
- SOT563 surface mount package
- Complementary PNP device **CMLT7820G**

**APPLICATIONS:**

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

**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

**SYMBOL**

$V_{CBO}$	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	$^\circ C$
$\theta_{JA}$	500	$^\circ C/W$

**UNITS**

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

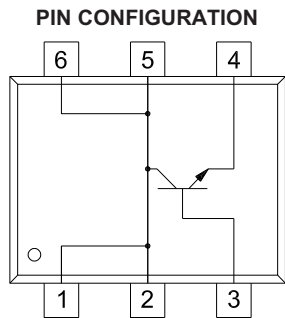
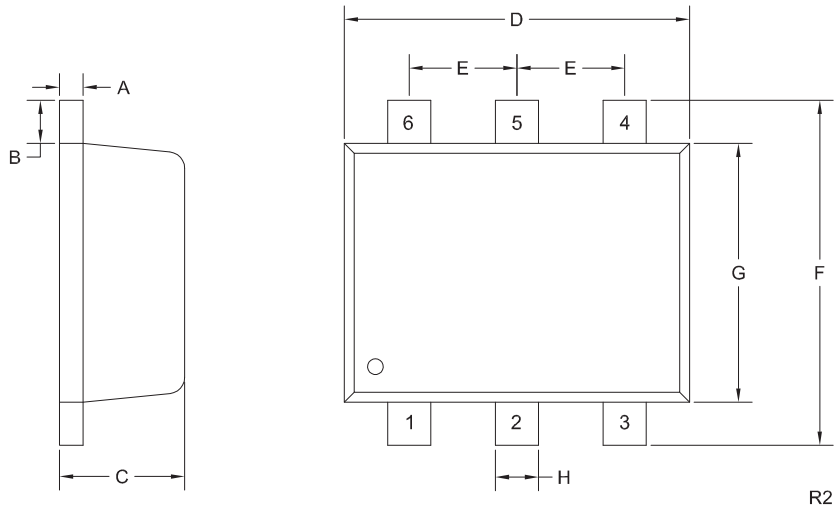
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=60V$		100	nA
$I_{EBO}$	$V_{EB}=5.0V$		100	nA
$BV_{CBO}$	$I_C=100\mu A$	80		V
$BV_{CEO}$	$I_C=10mA$	60		V
$BV_{EBO}$	$I_E=100\mu A$	5.0		V
$V_{CE(SAT)}$	$I_C=100mA, I_B=1.0mA$		0.115	V
$V_{CE(SAT)}$	$I_C=500mA, I_B=50mA$		0.15	V
$V_{CE(SAT)}$	$I_C=1.0A, I_B=100mA$		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

R4 (29-June 2015)

**CMLT3820G**  
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**VERY LOW  $V_{CE(SAT)}$**   
**NPN TRANSISTOR**



**SOT-563 CASE - MECHANICAL OUTLINE**



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)

## 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.

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- 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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