

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: ($T_A=25^{\circ}C$)

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

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

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

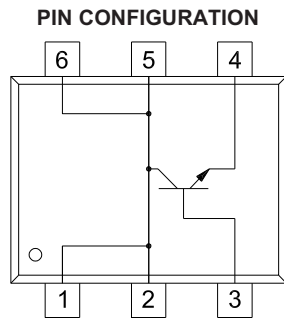
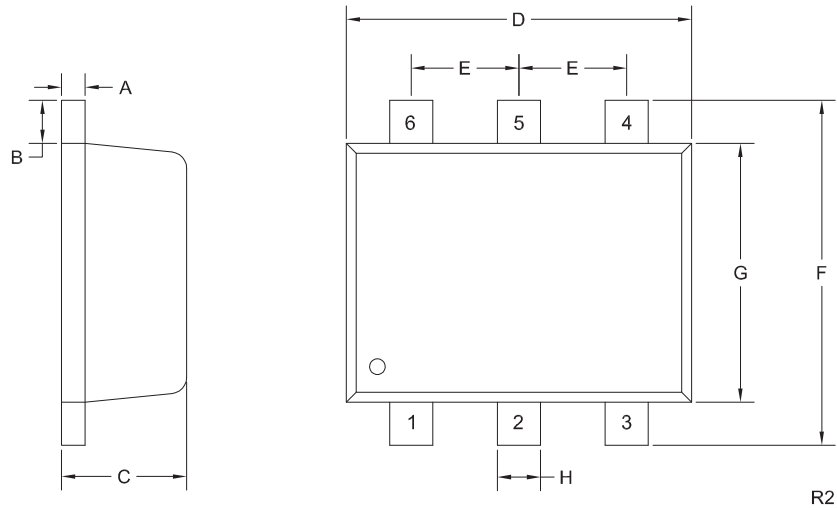
| SYMBOL | TEST CONDITIONS | MIN | MAX | UNITS |
|---------------|-------------------------------|-----|-------|-------|
| I_{CBO} | $V_{CB}=60V$ | | 100 | nA |
| I_{EBO} | $V_{EB}=5.0V$ | | 100 | nA |
| BV_{CBO} | $I_C=100\mu A$ | 80 | | V |
| BV_{CEO} | $I_C=10mA$ | 60 | | V |
| BV_{EBO} | $I_E=100\mu A$ | 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 |

R4 (29-June 2015)

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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.

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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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