

**CMLT7820G**

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

**SOT-563 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMLT7820G is a very low  $V_{CE(SAT)}$  PNP 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: 78G****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 ( $I_C=1.0\text{A}$ )
- $V_{CE(SAT)}=0.34\text{V MAX @ } I_C=1.0\text{A}$
- SOT563 surface mount package
- Complementary NPN device **CMLT3820G**

| 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 | $^{\circ}\text{C}$   |
| $\theta_{JA}$  | 500         | $^{\circ}\text{C/W}$ |

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

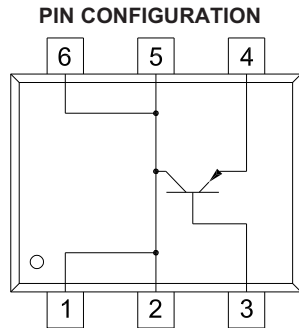
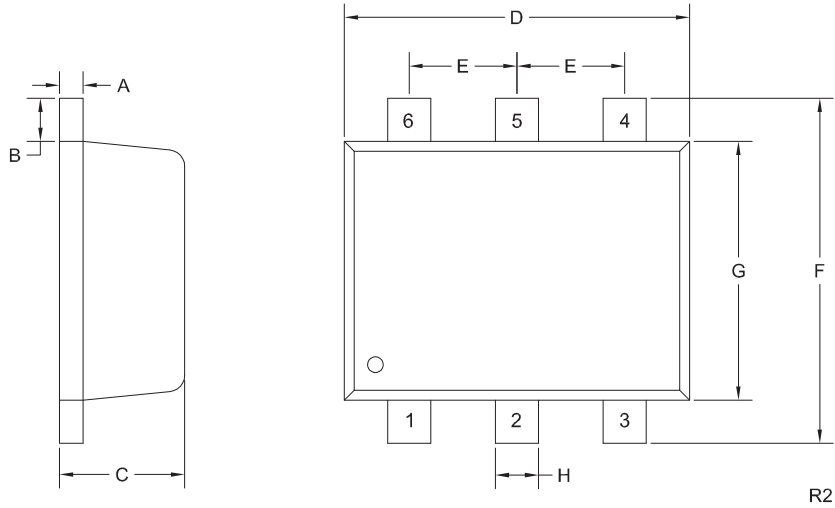
| SYMBOL        | TEST CONDITIONS                             | MIN | MAX   | UNITS |
|---------------|---------------------------------------------|-----|-------|-------|
| $I_{CBO}$     | $V_{CB}=60\text{V}$                         |     | 100   | nA    |
| $I_{EBO}$     | $V_{EB}=5.0\text{V}$                        |     | 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     |
| $V_{CE(SAT)}$ | $I_C=100\text{mA}, I_B=1.0\text{mA}$        |     | 0.175 | V     |
| $V_{CE(SAT)}$ | $I_C=500\text{mA}, I_B=50\text{mA}$         |     | 0.18  | V     |
| $V_{CE(SAT)}$ | $I_C=1.0\text{A}, I_B=100\text{mA}$         |     | 0.34  | 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 |       |       |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=500\text{mA}$      | 150 |       |       |
| $h_{FE}$      | $V_{CE}=5.0\text{V}, I_C=1.0\text{A}$       | 100 |       |       |
| $f_T$         | $V_{CE}=10\text{V}, I_C=50\text{mA}$        | 150 |       | MHz   |
| $C_{ob}$      | $V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$ |     | 15    | pF    |

R4 (29-June 2015)

**CMLT7820G**  
**SURFACE MOUNT SILICON**  
**VERY LOW  $V_{CE(SAT)}$**   
**PNP 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:78G**

R4 (29-June 2015)

## 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 (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

---

### 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).

---

### CONTACT US

#### Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.  
145 Adams Avenue  
Hauppauge, NY 11788 USA  
Main Tel: (631) 435-1110  
Main Fax: (631) 435-1824  
Support Team Fax: (631) 435-3388  
[www.centrasemi.com](http://www.centrasemi.com)

**Worldwide Field Representatives:**  
[www.centrasemi.com/wwreps](http://www.centrasemi.com/wwreps)

**Worldwide Distributors:**  
[www.centrasemi.com/wwdistributors](http://www.centrasemi.com/wwdistributors)

---

For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: [www.centrasemi.com/terms](http://www.centrasemi.com/terms)