



CTLT3820-M563

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



Top View Bottom View

TLM563 CASE

• Device is **Halogen Free** by design

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 |

SYMBOL

| | |
|----------------|-------------|
| V_{CBO} | 80 |
| V_{CEO} | 60 |
| V_{EBO} | 5.0 |
| I_C | 1.0 |
| I_{CM} | 2.0 |
| I_B | 300 |
| P_D | 500 |
| T_J, T_{stg} | -65 to +150 |
| θ_{JA} | 250 |

UNITS

| |
|--------------------|
| V |
| V |
| V |
| A |
| A |
| mA |
| mW |
| $^\circ\text{C}$ |
| $^\circ\text{C/W}$ |

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 |

CentralTM
Semiconductor Corp.

DESCRIPTION:

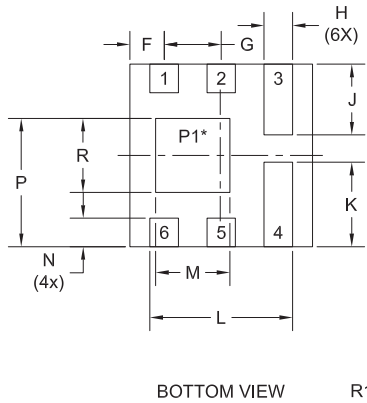
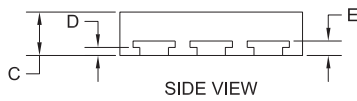
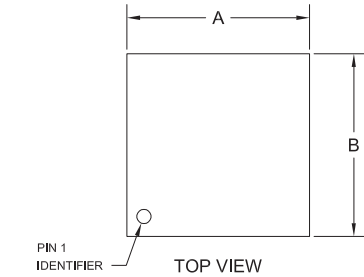
The CENTRAL SEMICONDUCTOR CTLT3820-M563 is a very low $V_{CE(SAT)}$ NPN Transistor packaged in a space saving 1.6 x 1.6mm TLMTM surface mount package. This device is a TLMTM equivalent of the popular CMLT3820G, SOT-563 device, featuring enhanced thermal characteristics, a package footprint compatible with standard SOT-563 mounting pad geometries, and a height profile of only 0.4mm.

MARKING CODE: CKT

FEATURES:

- High Current ($I_C=1.0\text{A}$)
- $V_{CE(SAT)}=0.28\text{V MAX @ } I_C=1.0\text{A}$
- Low Profile 0.4mm Package compatible with SOT-563 mounting pad geometries.
- Complementary PNP device **CTLT7820-M563**

TLM563 CASE - MECHANICAL OUTLINE

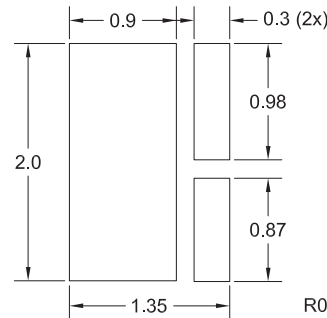


* Exposed pad P1 common to pins 1, 2, 5, and 6.

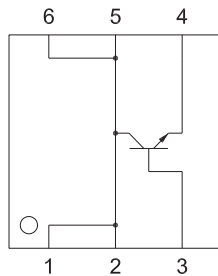
| SYMBOL | DIMENSIONS | | DIMENSIONS | |
|--------|------------|-------|-------------|------|
| | INCHES | | MILLIMETERS | |
| | MIN | MAX | MIN | MAX |
| A | 0.062 | 0.064 | 1.57 | 1.63 |
| B | 0.062 | 0.064 | 1.57 | 1.63 |
| C | 0.014 | 0.017 | 0.36 | 0.43 |
| D | 0.002 | 0.004 | 0.04 | 0.10 |
| E | 0.004 | 0.006 | 0.10 | 0.16 |
| F | 0.011 | 0.013 | 0.27 | 0.33 |
| G | 0.019 | 0.021 | 0.47 | 0.53 |
| H | 0.009 | 0.011 | 0.22 | 0.28 |
| J | 0.023 | 0.026 | 0.59 | 0.65 |
| K | 0.028 | 0.030 | 0.71 | 0.77 |
| L | 0.048 | 0.050 | 1.22 | 1.28 |
| M | 0.024 | 0.027 | 0.62 | 0.68 |
| N | 0.009 | 0.011 | 0.22 | 0.28 |
| P | 0.043 | 0.045 | 1.09 | 1.16 |
| R | 0.024 | 0.027 | 0.62 | 0.68 |

TLM563 (REV:R1)

SUGGESTED MOUNTING PADS
(Dimensions in mm)



PIN CONFIGURATION



- LEAD CODE:**
- 1) COLLECTOR
 - 2) COLLECTOR
 - 3) BASE
 - 4) EMITTER
 - 5) COLLECTOR
 - 6) COLLECTOR

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R0 (24-September 2009)