

**CTLSH1-40M563****SURFACE MOUNT  
HIGH CURRENT, LOW  $V_F$   
SILICON SCHOTTKY RECTIFIER**

• Device is **Halogen Free** by design

**APPLICATIONS:**

- DC/DC Converters
- Reverse Battery Protection
- Battery powered devices including Cell Phones, PDAs, Digital Cameras, MP3 Players, etc.

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

|                                                          |  |
|----------------------------------------------------------|--|
| Peak Repetitive Reverse Voltage                          |  |
| Continuous Forward Current                               |  |
| Peak Repetitive Forward Current, $t_p \leq 1.0\text{ms}$ |  |
| Peak Forward Surge Current, $t_p = 8.3\text{ms}$         |  |
| Power Dissipation (Note 1)                               |  |
| Operating and Storage Junction Temperature               |  |
| Thermal Resistance (Note 1)                              |  |



[www.centra-semi.com](http://www.centra-semi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLSH1-40M563 is a high quality, low  $V_F$  Schottky Rectifier packaged in a space saving 1.6 x 1.6mm TLM™ surface mount package. This device is a TLM™ equivalent of the popular CMLSH1-40, 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: CJB****FEATURES:**

- High Current ( $I_F=1.0\text{A}$ )
- Low Forward Voltage Drop ( $V_F=0.55\text{V MAX @ } 1.0\text{A}$ )
- High Thermal Efficiency
- TLM563 with a package profile of 0.4mm, compatible with SOT-563 mounting geometries

| SYMBOL         |             | UNITS              |
|----------------|-------------|--------------------|
| $V_{RRM}$      | 40          | V                  |
| $I_F$          | 1.0         | A                  |
| $I_{FRM}$      | 3.5         | A                  |
| $I_{FSM}$      | 10          | A                  |
| $P_D$          | 500         | mW                 |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ\text{C}$   |
| $\Theta_{JA}$  | 250         | $^\circ\text{C/W}$ |

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

| SYMBOL   | TEST CONDITIONS                                          | MIN | TYP | MAX  | UNITS         |
|----------|----------------------------------------------------------|-----|-----|------|---------------|
| $I_R$    | $V_R=5.0\text{V}$                                        |     |     | 10   | $\mu\text{A}$ |
| $I_R$    | $V_R=8.0\text{V}$                                        |     |     | 20   | $\mu\text{A}$ |
| $I_R$    | $V_R=15\text{V}$                                         |     |     | 50   | $\mu\text{A}$ |
| $I_R$    | $V_R=40\text{V}$                                         |     |     | 200  | $\mu\text{A}$ |
| $I_R$    | $V_R=40\text{V}, T_A=100^\circ\text{C}$                  |     |     | 20   | mA            |
| $BV_R$   | $I_R=100\mu\text{A}$                                     | 40  |     |      | V             |
| $V_F$    | $I_F=10\text{mA}$                                        |     |     | 0.29 | V             |
| $V_F$    | $I_F=100\text{mA}$                                       |     |     | 0.36 | V             |
| $V_F$    | $I_F=500\text{mA}$                                       |     |     | 0.45 | V             |
| $V_F$    | $I_F=1.0\text{A}$                                        |     |     | 0.55 | V             |
| $C_J$    | $V_R=4.0\text{V}, f=1.0\text{MHz}$                       |     | 50  |      | pF            |
| $t_{rr}$ | $I_F=I_R=500\text{mA}, I_{rr}=50\text{mA}, R_L=50\Omega$ |     | 15  |      | ns            |

Notes: (1) Mounted on 2 inch square FR4 PCB with copper mounting pad area of 2.4mm<sup>2</sup>.

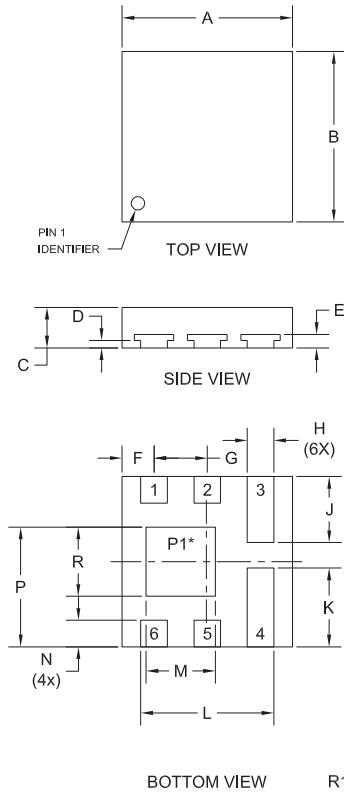
R1 (19-February 2010)

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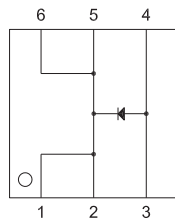


### TLM563 CASE - MECHANICAL OUTLINE



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

### PIN CONFIGURATION

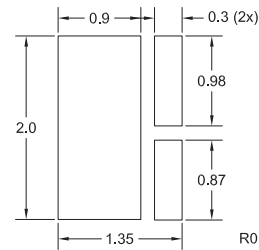


| SYMBOL | DIMENSIONS |       |             |      |
|--------|------------|-------|-------------|------|
|        | INCHES     |       | MILLIMETERS |      |
|        | MIN        | MAX   | MIN         | MAX  |
| A      | 0.062      | 0.064 | 1.57        | 1.63 |
| B      | 0.062      | 0.064 | 1.57        | 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)



### LEAD CODE:

- 1) Cathode
- 2) Cathode
- 3) Anode
- 4) Anode
- 5) Cathode
- 6) Cathode

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