

CMAD4448

**SURFACE MOUNT  
ULTRA HIGH SPEED SILICON  
SWITCHING DIODE**



www.centrasemi.com

**FEMTOmini™**



**SOD-923 CASE**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CMAD4448 is an ultra high speed switching diode ideal for applications where very small size and operational efficiency are prime requirements.

**MARKING CODE: M**

**APPLICATIONS:**

- DC / DC Converters
- Voltage Clamping
- Protection Circuits
- Battery powered applications including Cell Phones, Digital Cameras, Pagers, PDAs, Laptop Computers, etc.

**FEATURES:**

- Current ( $I_O=250mA$ )
- Forward Voltage Drop ( $V_F=0.91V$  TYP @ 100mA)
- Extremely Fast Switching Speed (4ns Max)
- Miniature, 0.8 x 0.6 x 0.4mm, ultra low height profile **FEMTOmini™** Surface Mount Package.

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

Peak Repetitive Reverse Voltage  
 Continuous Forward Current  
 Peak Repetitive Forward Current  
 Peak Forward Surge Current,  $t_p=1.0\mu s$   
 Peak Forward Surge Current,  $t_p=1.0s$   
 Power Dissipation  
 Operating and Storage Junction Temperature  
 Thermal Resistance

**SYMBOL**

| SYMBOL         |             | UNITS        |
|----------------|-------------|--------------|
| $V_{RRM}$      | 120         | V            |
| $I_F$          | 250         | mA           |
| $I_{FRM}$      | 500         | mA           |
| $I_{FSM}$      | 4.0         | A            |
| $I_{FSM}$      | 1.0         | A            |
| $P_D$          | 100         | mW           |
| $T_J, T_{stg}$ | -65 to +150 | $^\circ C$   |
| $\theta_{JA}$  | 1250        | $^\circ C/W$ |

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

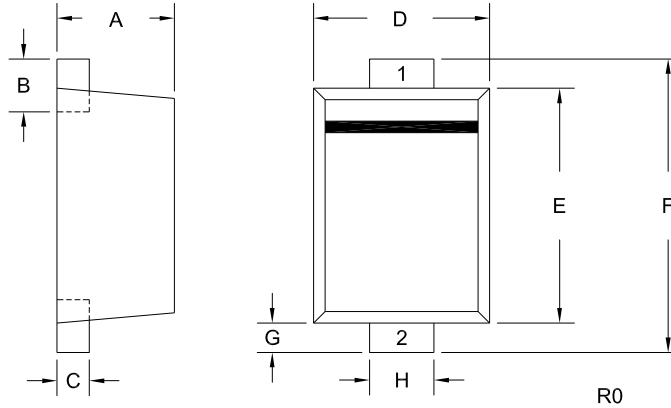
| SYMBOL   | TEST CONDITIONS                              | MIN  | TYP  | MAX  | UNITS   |
|----------|--|------|------|------|---------|
| $I_R$    | $V_R=50V$                                    |      |      | 300  | nA      |
| $I_R$    | $V_R=50V, T_A=125^\circ C$                   |      |      | 100  | $\mu A$ |
| $I_R$    | $V_R=100V$                                   |      |      | 500  | nA      |
| $BV_R$   | $I_R=100\mu A$                               | 120  | 150  |      | V       |
| $V_F$    | $I_F=1.0mA$                                  | 0.55 | 0.59 | 0.65 | V       |
| $V_F$    | $I_F=10mA$                                   | 0.67 | 0.72 | 0.77 | V       |
| $V_F$    | $I_F=100mA$                                  | 0.85 | 0.91 | 1.0  | V       |
| $C_T$    | $V_R=0, f=1.0MHz$                            |      |      | 2.0  | pF      |
| $t_{rr}$ | $I_R=I_F=10mA, R_L=100\Omega, Rec. to 1.0mA$ |      | 2.0  | 4.0  | ns      |

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SOD-923 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) CATHODE
- 2) ANODE

MARKING CODE: M

| DIMENSIONS |        |       |             |      |
|------------|--------|-------|-------------|------|
| SYMBOL     | INCHES |       | MILLIMETERS |      |
|            | MIN    | MAX   | MIN         | MAX  |
| A          | 0.015  | 0.016 | 0.39        | 0.41 |
| B          | 0.004  | 0.010 | 0.10        | 0.26 |
| C          | 0.003  | 0.006 | 0.08        | 0.14 |
| D          | 0.022  | 0.026 | 0.55        | 0.65 |
| E          | 0.030  | 0.033 | 0.75        | 0.85 |
| F          | 0.035  | 0.043 | 0.90        | 1.10 |
| G          | 0.002  | 0.006 | 0.05        | 0.15 |
| H          | 0.007  | 0.011 | 0.17        | 0.27 |

SOD-923 (REV: R0)

R1 (8-January 2010)