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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: [info@chipsmall.com](mailto:info@chipsmall.com) Web: [www.chipsmall.com](http://www.chipsmall.com)

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## Product Summary @T<sub>A</sub> = +25°C

| V <sub>RRM</sub> (V) | I <sub>O</sub> (A) | V <sub>F</sub> (V) | I <sub>R</sub> (μA) |
|----------------------|--------------------|--------------------|---------------------|
| 1,000                | 0.8                | 1.05               | 5                   |

## Description and Applications

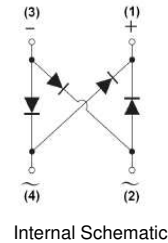
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment and telecommunication applications.

## Features and Benefits

- Glass Passivated Die Construction
- Compact, Thin Profile Package Design
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- **Lead-Free Finish/RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

## Mechanical Data

- Case: MSB
- Case Material: Molded Plastic; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: As Marked on Body
- Weight: 0.07 grams (Approximate)

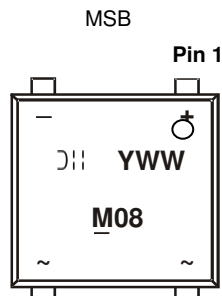


## Ordering Information (Note 4)

| Part Number | Case | Packaging         |
|-------------|------|-------------------|
| MSB08M-13   | MSB  | 3,000/Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



M08 = Product Type Marking Code  
 ⬤ = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 6 = 2016)  
 WW = Week Code (01 to 53)

**Maximum Ratings** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

| Characteristic                                                                                       | Symbol                          | Value | Unit |
|------------------------------------------------------------------------------------------------------|---------------------------------|-------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage               | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 1,000 | V    |
| RMS Reverse Voltage                                                                                  | $V_{R(RMS)}$                    | 700   | V    |
| Average Rectified Output Current @ $T_C = +120^\circ\text{C}$                                        | $I_O$                           | 0.8   | A    |
| Non-Repetitive Peak Forward Surge Current, 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | $I_{FSM}$                       | 30    | A    |

**Thermal Characteristics**

| Characteristic                                           | Symbol          | Value       | Unit               |
|----------------------------------------------------------|-----------------|-------------|--------------------|
| Typical Thermal Resistance, Junction to Ambient (Note 5) | $R_{\theta JA}$ | 80          | $^\circ\text{C/W}$ |
| Typical Thermal Resistance, Junction to Case             | $R_{\theta JC}$ | 12          | $^\circ\text{C/W}$ |
| Typical Thermal Resistance, Junction to Lead             | $R_{\theta JL}$ | 40          | $^\circ\text{C/W}$ |
| Operating and Storage Temperature Range                  | $T_J, T_{STG}$  | -55 to +150 | $^\circ\text{C}$   |

**Electrical Characteristics** (@ $T_A = +25^\circ\text{C}$ , unless otherwise specified.)

| Characteristic                     | Symbol      | Min   | Typ          | Max          | Unit          | Test Condition                                                                                    |
|------------------------------------|-------------|-------|--------------|--------------|---------------|---------------------------------------------------------------------------------------------------|
| Reverse Breakdown Voltage (Note 6) | $V_{(BR)R}$ | 1,000 | —            | —            | V             | $I_R = 5\mu\text{A}$                                                                              |
| Forward Voltage                    | $V_F$       | —     | 0.90<br>0.95 | 1.02<br>1.05 | V             | $I_F = 0.4\text{A}$<br>$I_F = 0.8\text{A}$                                                        |
| Leakage Current (Note 6)           | $I_R$       | —     | —            | 5<br>500     | $\mu\text{A}$ | $V_R = 1,000\text{V}, T_A = +25^\circ\text{C}$<br>$V_R = 1,000\text{V}, T_A = +125^\circ\text{C}$ |
| Typical Total Capacitance          | $C_T$       | —     | 10           | —            | pF            | $V_R = 4\text{V}, f = 1.0\text{MHz}$                                                              |

Note: 5. Device mounted on glass-epoxy substrate with 1oz 20mm x 20mm Cu pad per pin.  
 6. Short duration pulse test used to minimize self-heating effect.

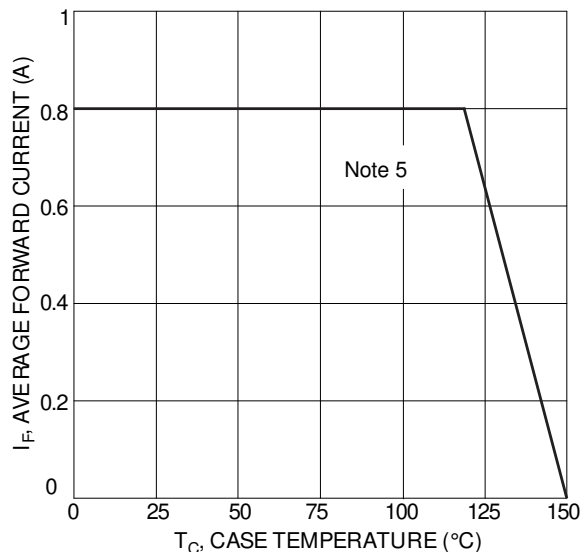


Figure 1 Forward Current Derating Curve

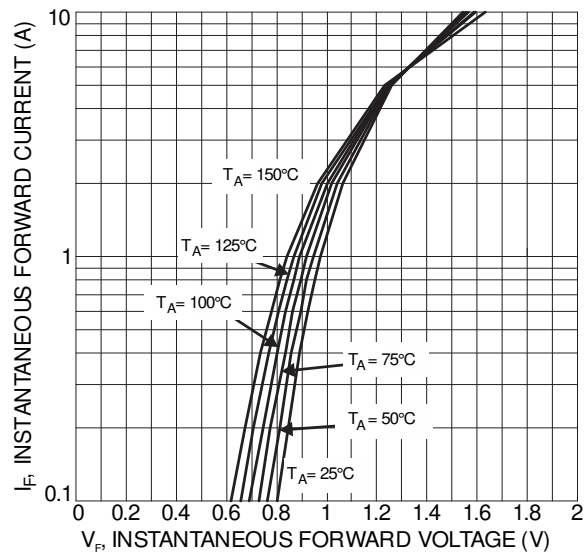
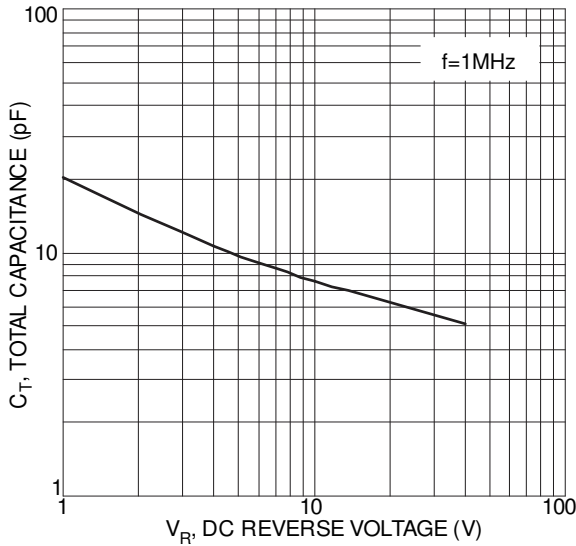
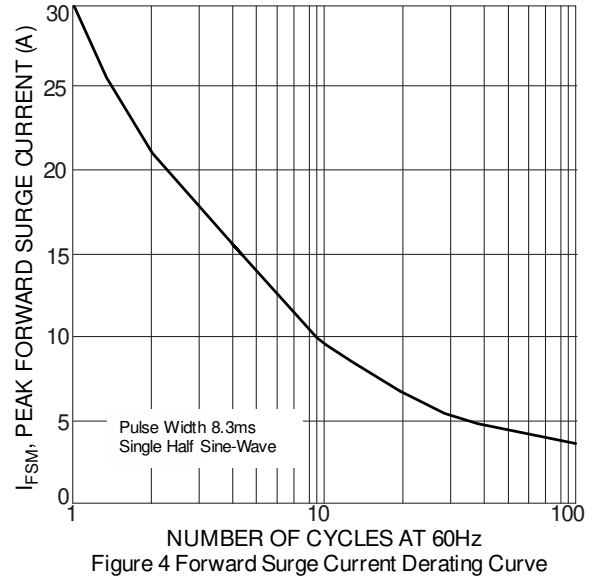
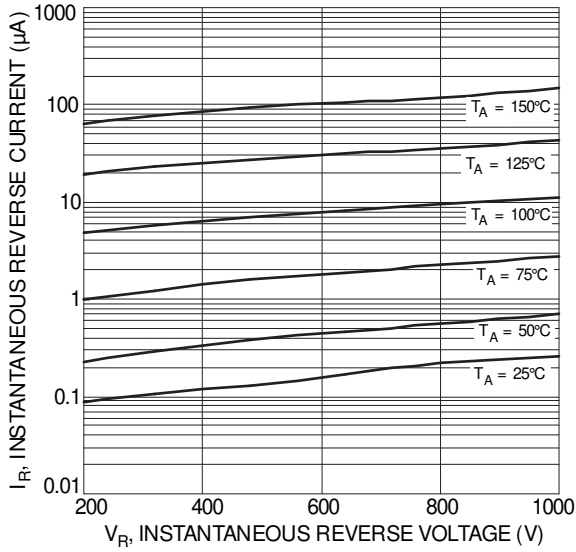


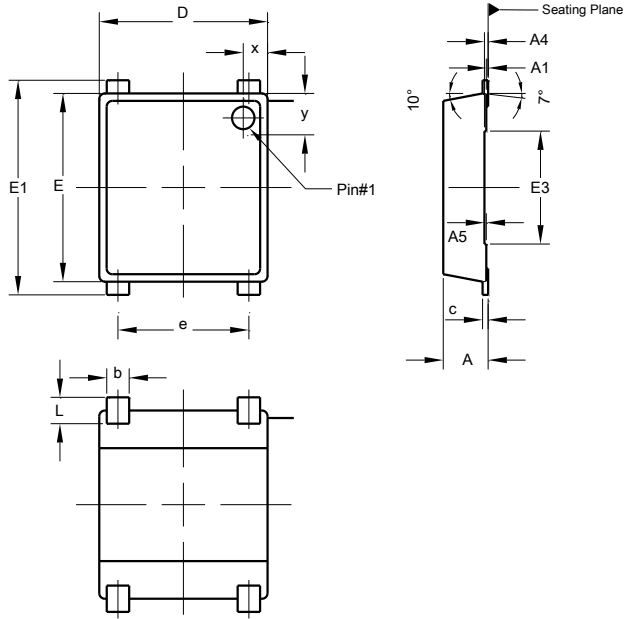
Figure 2 Typical Forward Characteristics



## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**MSB**

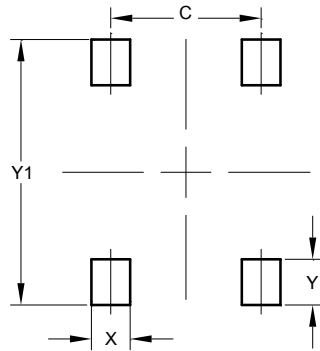


| MSB                  |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.10 | 1.30 | 1.20 |
| A1                   | 0.00 | 0.05 | 0.02 |
| A4                   | 0.05 | 0.08 | -    |
| A5                   | 0.03 | 0.08 | 0.05 |
| b                    | 0.55 | 0.70 | 0.60 |
| c                    | 0.12 | 0.18 | 0.15 |
| D                    | 4.40 | 4.60 | 4.50 |
| E                    | 4.90 | 5.10 | 5.00 |
| E1                   | 5.60 | 5.80 | 5.70 |
| E3                   | 2.95 | 3.05 | 3.00 |
| e                    | 3.45 | 3.55 | 3.50 |
| L                    | 0.65 | 0.75 | 0.70 |
| x                    | 0.60 | 0.70 | 0.65 |
| y                    | 0.60 | 0.70 | 0.65 |
| All Dimensions in mm |      |      |      |

## Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**MSB**



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 3.55          |
| X          | 0.90          |
| Y          | 1.05          |
| Y1         | 6.10          |

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