

**1.2A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER**

**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                | 1.2                | 1.1                | 5                   |

**Description and Applications**

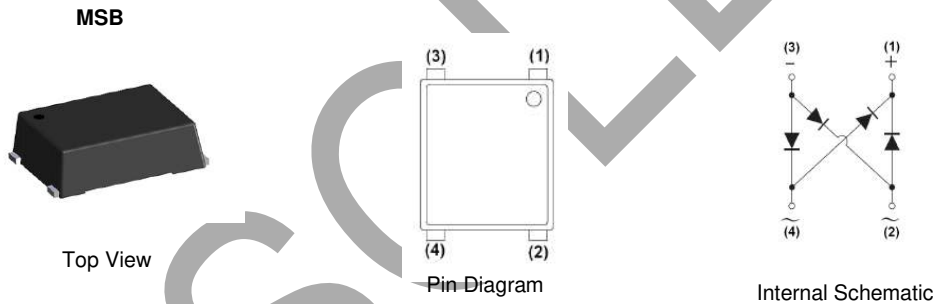
Suitable for AC to DC bridge full-wave rectification for SMPS; LED lighting, adapters, battery chargers, home appliances, office equipment, and telecommunications applications.

**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)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative. <https://www.diodes.com/quality/product-definitions/>**

**Mechanical Data**

- Package: MSB
- Package 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: 0.09 grams (Approximate)

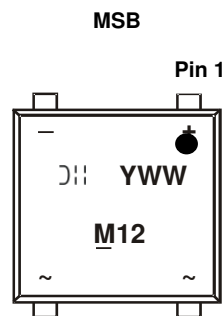


**Ordering Information** (Note 4)

| Part Number | Package | Packing |             |
|-------------|---------|---------|-------------|
|             |         | Qty.    | Carrier     |
| MSB12M-13   | MSB     | 3,000   | Tape & Reel |

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> 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 <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information**



- MXX = Product Type Marking Code (XX = 12)
- YWW = Manufacturers' Code Marking
- Y = Last Digit of Year (ex: 6 = 2016)
- WW = Week Code (01 to 53)

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**Maximum Ratings** (@T<sub>A</sub> = +25°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 <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 1,000 | V    |
| RMS Reverse Voltage  | V <sub>R(RMS)</sub>                                    | 700   | V    |
| Average Rectified Output Current @T <sub>C</sub> = +120°C  | I <sub>O</sub>   | 1.2   | A    |
| Non-Repetitive Peak Forward Surge Current, 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                       | 45    | A    |

**Thermal Characteristics**

| Characteristic   | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 5) | R <sub>θJA</sub>                  | 70          | °C/W |
| Typical Thermal Resistance, Junction to Case             | R <sub>θJC</sub>                  | 10          | °C/W |
| Typical Thermal Resistance, Junction to Lead             | R <sub>θJL</sub>                  | 30          | °C/W |
| Operating and Storage Temperature Range                  | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                     | Symbol             | Min   | Typ        | Max        | Unit | Test Condition  |
|------------------------------------|--------------------|-------|------------|------------|------|---|
| Reverse Breakdown Voltage (Note 6) | V <sub>(BR)R</sub> | 1,000 | —          | —          | V    | I <sub>R</sub> = 5μA  |
| Forward Voltage                    | V <sub>F</sub>     | —     | 0.9<br>1.0 | 1.1<br>1.2 | V    | I <sub>F</sub> = 0.6A<br>I <sub>F</sub> = 1.2A  |
| Leakage Current (Note 6)           | I <sub>R</sub>     | —     | —          | 5<br>500   | μA   | V <sub>R</sub> = 1,000V, T <sub>A</sub> = +25°C<br>V <sub>R</sub> = 1,000V, T <sub>A</sub> = +125°C |
| Typical Total Capacitance          | C <sub>T</sub>     | —     | 30         | —          | pF   | V <sub>R</sub> = 4V, f = 1.0MHz   |

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

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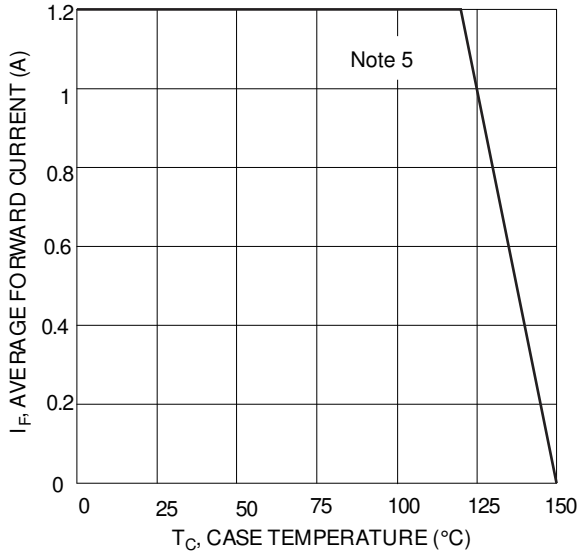


Figure 1 Forward Current Derating Curve

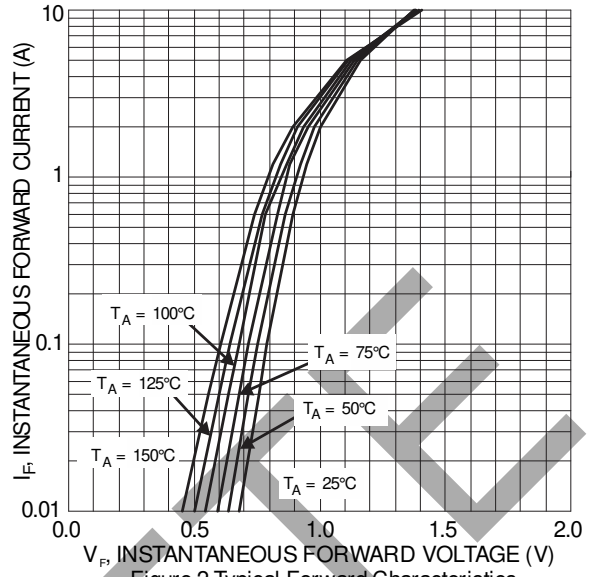


Figure 2 Typical Forward Characteristics

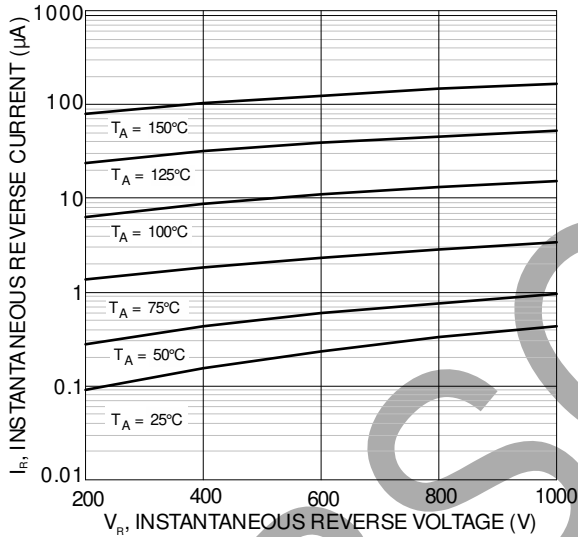


Figure 3 Typical Reverse Characteristics

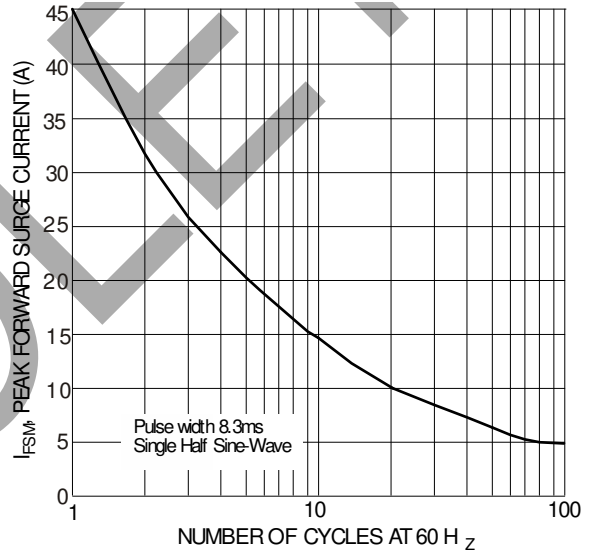


Figure 4 Forward Surge Current Derating Curve

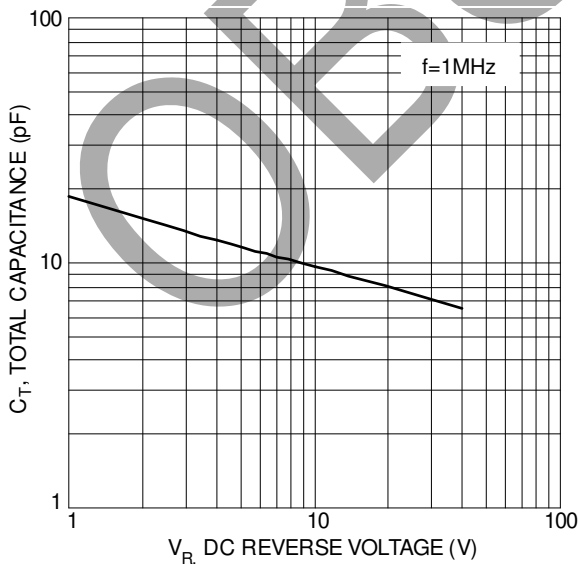
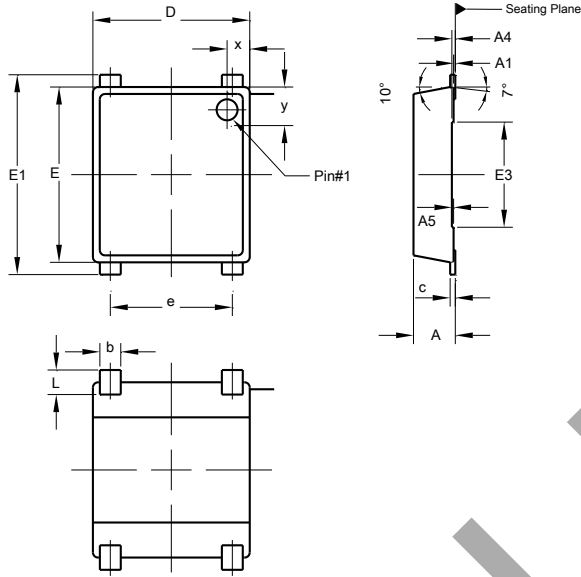


Figure 5 Total Capacitance vs. Reverse Voltage

**Package Outline Dimensions**

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

**MSB**

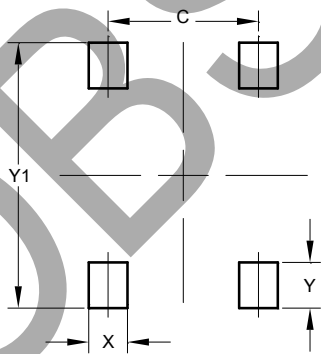


| MSB                  |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.10 | 1.30 | 1.20 |
| A1                   | 0.00 | 0.05 | 0.02 |
| A4                   | 0.05 | 0.08 | -    |
| A5                   | 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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