

**Product Summary** (@ $T_A = +25^\circ\text{C}$ )

| $V_{RRM}$ (V) | $I_o$ (A) | $V_F$ (V) | $I_R$ ( $\mu\text{A}$ ) |
|---------------|-----------|-----------|-------------------------|
| 1000          | 2.5       | 1.1       | 5                       |

**Description and Applications**

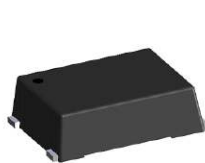
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment and telecommunication applications.

**Features and Benefits**

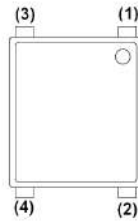
- Glass Passivated Die Construction
- Compact, Thin Profile Package Design
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- Rated at 1000V PRV
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

**Mechanical Data**

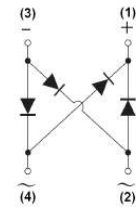
- Case: MSBL
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: As marked on Body
- Weight: 0.216 grams (Approximate)



Top View



Pin Diagram

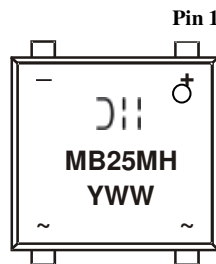


Internal Schematic

**Ordering Information** (Note 4)

| Part Number | Compliance | Case | Packaging        |
|-------------|------------|------|------------------|
| MSB25MH-13  | Commercial | MSBL | 2500/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**


MB25MH= Product Type Marking Code  
 311 = Manufacturers' Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 6 = 2016)  
 WW = Week Code (01 to 53)

**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> | 1000  | V                |
| RMS Reverse Voltage  | V <sub>R(RMS)</sub>                                    | 700   | V                |
| Average Rectified Output Current @ T <sub>C</sub> = +110°C   | I <sub>O</sub>   | 2.5   | A                |
| Non-Repetitive Peak Forward Surge Current, 8.3ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                       | 80    | A                |
| Non-Repetitive Peak Forward Surge Current, 1.0ms<br>Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>                                       | 160   | A                |
| I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)   | I <sup>2</sup> t                                       | 26.5  | A <sup>2</sup> S |

**Thermal Characteristics**

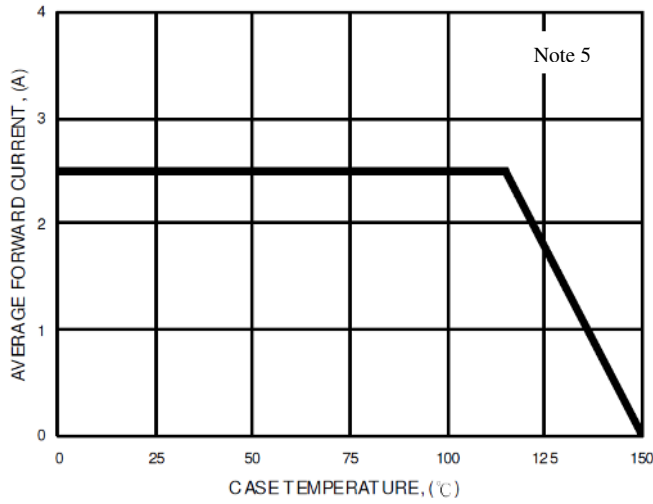
| Characteristic  | Symbol                            | Value       | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 5)<br>(Per Element) | R <sub>θJA</sub>                  | 35          | °C/W |
| Typical Thermal Resistance, Junction to Case                              | R <sub>θJC</sub>                  | 7.8         | °C/W |
| Typical Thermal Resistance, Junction to Lead                              | R <sub>θJL</sub>                  | 16          | °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.)

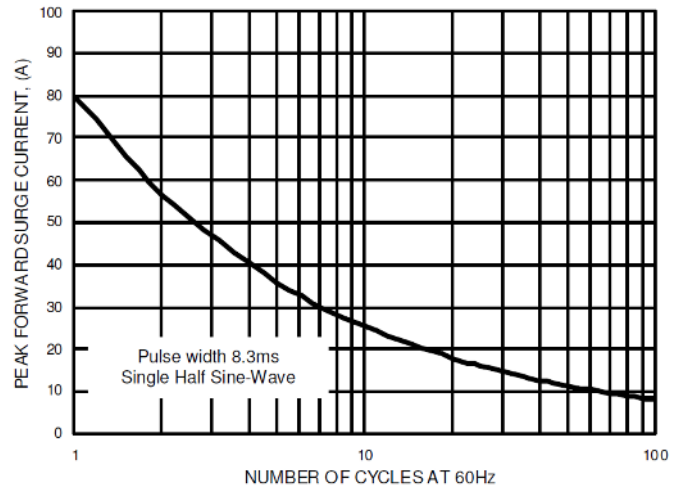
| Characteristic                         | Symbol             | Min  | Typ  | Max  | Unit | Test Condition   |
|--|--------------------|------|------|------|------|--|
| Reverse Breakdown Voltage (Note 6)     | V <sub>(BR)R</sub> | 1000 | —    | —    | V    | I <sub>R</sub> = 5μA   |
| Forward Voltage (Per Element)          | V <sub>F</sub>     | —    | 0.78 | 1.02 | V    | I <sub>F</sub> = 1.25A, T <sub>A</sub> = +25°C<br>I <sub>F</sub> = 1.25A, T <sub>A</sub> = +125°C<br>I <sub>F</sub> = 2.5A, T <sub>A</sub> = +25°C<br>I <sub>F</sub> = 2.5A, T <sub>A</sub> = +125°C |
| Leakage Current (Note 6) (Per Element) | I <sub>R</sub>     | —    | 0.31 | 5    | μA   | V <sub>R</sub> = 1000V, T <sub>A</sub> = +25°C<br>V <sub>R</sub> = 1000V, T <sub>A</sub> = +125°C  |
| Total Capacitance (Note 7)             | 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.
  7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

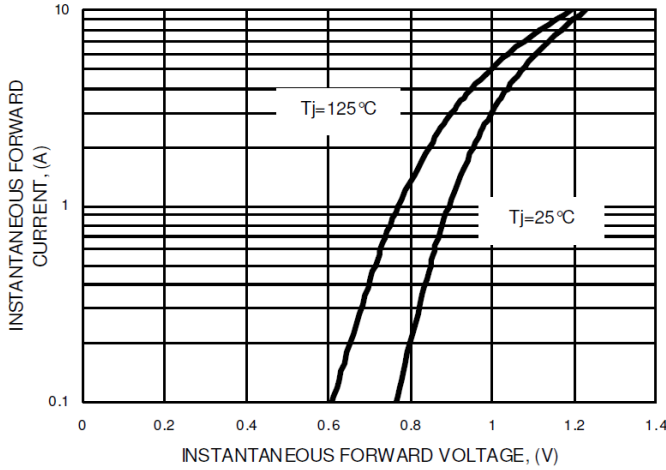
**FIG.1-FORWARD CURRENT DERATING CURVE**



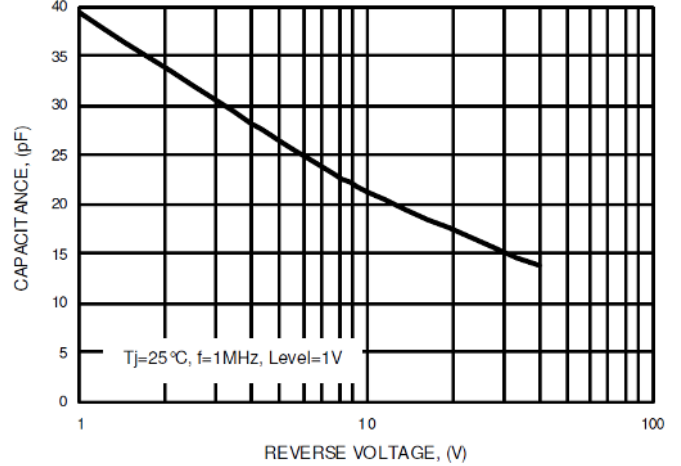
**FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT**



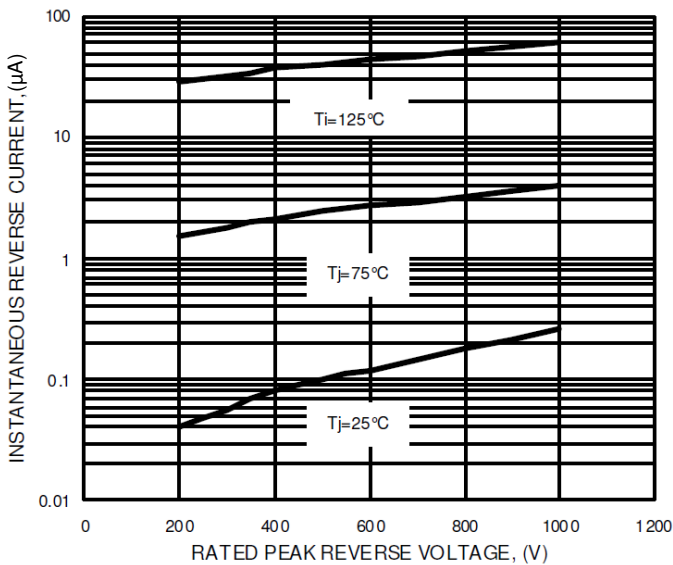
**FIG.3 TYPICAL FORWARD CHARACTERISTICS**



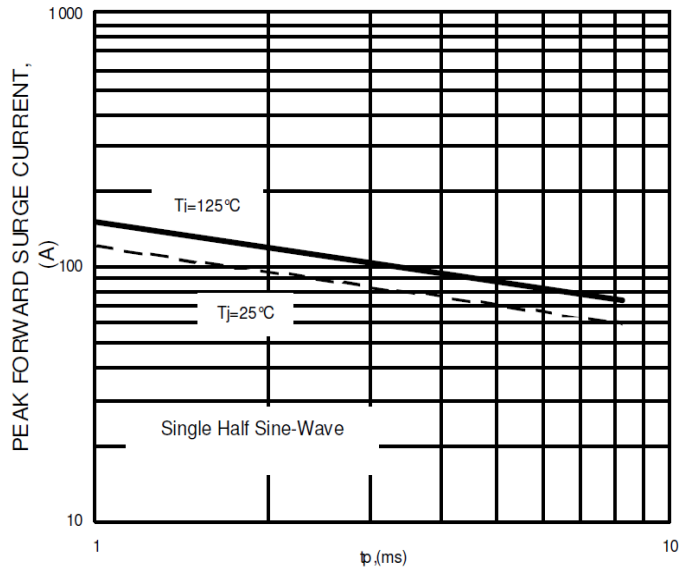
**FIG.4- TYPICAL JUNCTION CAPACITANCE**



**FIG.5- TYPICAL REVERSE CHARACTERISTICS**



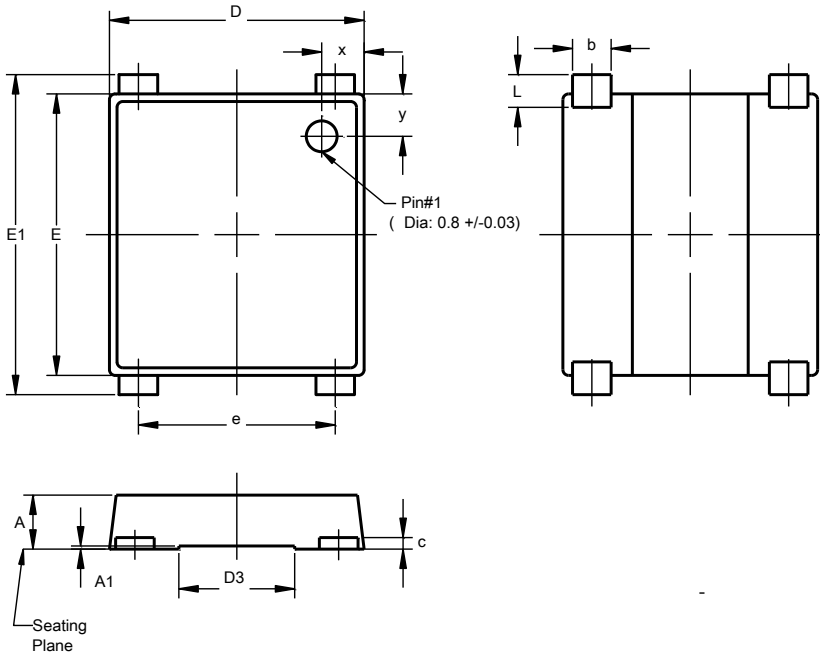
**FIG.6- NON-REPETITIVE SURGE CURRENT**



**Package Outline Dimensions**

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

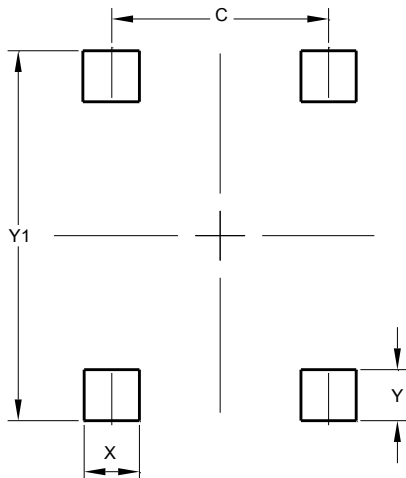
NEW PRODUCT



| MSBL                 |      |      |      |
|----------------------|------|------|------|
| Dim                  | Min  | Max  | Typ  |
| A                    | 1.30 | 1.50 | 1.40 |
| A1                   | 0.04 | 0.08 | 0.06 |
| b                    | 0.95 | 1.15 | 1.00 |
| c                    | 0.27 | 0.40 | 0.30 |
| D                    | 6.50 | 6.70 | 6.60 |
| D3                   | 2.90 | 3.10 | 3.00 |
| E                    | 7.20 | 7.40 | 7.30 |
| E1                   | 7.90 | 8.60 | 8.30 |
| e                    | 5.00 | 5.20 | 5.10 |
| L                    | 0.65 | 1.05 | 0.85 |
| x                    | 0.95 | 1.25 | 1.10 |
| y                    | 0.95 | 1.25 | 1.10 |
| All Dimensions in mm |      |      |      |

**Suggested Pad Layout**

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



| Dimensions | Value (in mm) |
|------------|---------------|
| C          | 5.10          |
| X          | 1.30          |
| Y          | 1.20          |
| Y1         | 8.70          |

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