

Product Summary (@T_A = +25°C)

| V _{RRM} (V) | I _O (A) | V _F (V) | I _R (μA) |
|----------------------|--------------------|--------------------|---------------------|
| 1000 | 2.5 | 1.1 | 5 |

Description and Applications

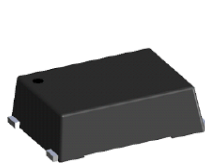
Suitable for AC to DC bridge full wave rectification for SMPS, LED lighting, adapter, battery charger, home appliances, office equipment and telecommunication applications.

Features and Benefits

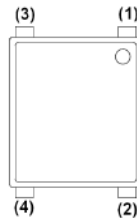
- Glass Passivated Die Construction
- Compact, Thin Profile Package Design
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- Rated at 1000V PRV
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

Mechanical Data

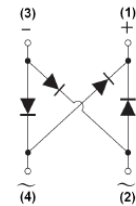
- Case: MSBL
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 **(e3)**
- Polarity: As marked on Body
- Weight: 0.216 grams (Approximate)



Top View



Pin Diagram

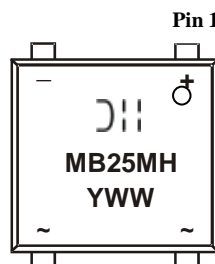


Internal Schematic

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 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
 DII = 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°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 Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 1000 | V |
| RMS Reverse Voltage | V _{R(RMS)} | 700 | V |
| Average Rectified Output Current @ T _C = +110°C | I _O | 2.5 | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 80 | A |
| Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load | I _{FSM} | 160 | A |
| I ² t Rating for Fusing (1ms < t < 8.3ms) | I ² t | 26.5 | A ² S |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|-----------------------------------|-------------|------|
| Typical Thermal Resistance, Junction to Ambient (Note 5) (Per Element) | R _{θJA} | 35 | °C/W |
| Typical Thermal Resistance, Junction to Case | R _{θJC} | 7.8 | °C/W |
| Typical Thermal Resistance, Junction to Lead | R _{θJL} | 16 | °C/W |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to +150 | °C |

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

| Characteristic | Symbol | Min | Typ | Max | Unit | Test Condition |
|--|--------------------|------|------|----------|------|--|
| Reverse Breakdown Voltage (Note 6) | V _{(BR)R} | 1000 | — | — | V | I _R = 5μA |
| Forward Voltage (Per Element) | V _F | — | 0.78 | 1.02 | V | I _F = 1.25A, T _A = +25°C I _F = 1.25A, T _A = +125°C I _F = 2.5A, T _A = +25°C I _F = 2.5A, T _A = +125°C |
| Leakage Current (Note 6) (Per Element) | I _R | — | 0.31 | 5 500 | μA | V _R = 1000V, T _A = +25°C V _R = 1000V, T _A = +125°C |
| Total Capacitance (Note 7) | C _T | — | 30 | — | pF | V _R = 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

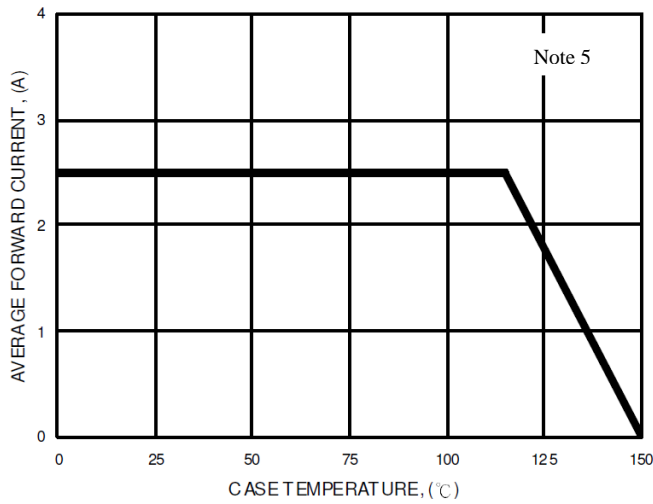


FIG.2- MAXIMUM NON-REPETITIVE SURGE CURRENT

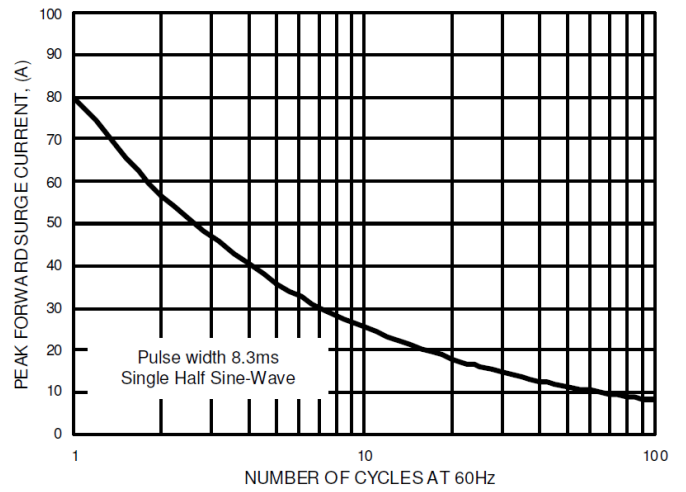


FIG.3 TYPICAL FORWARD CHARACTERISTICS

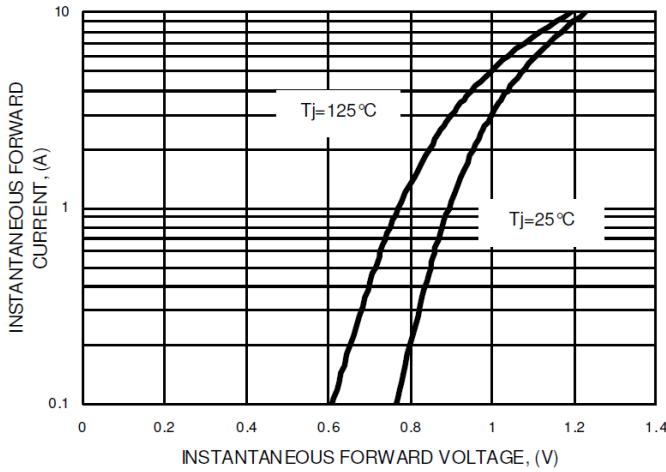


FIG.4- TYPICAL JUNCTION CAPACITANCE

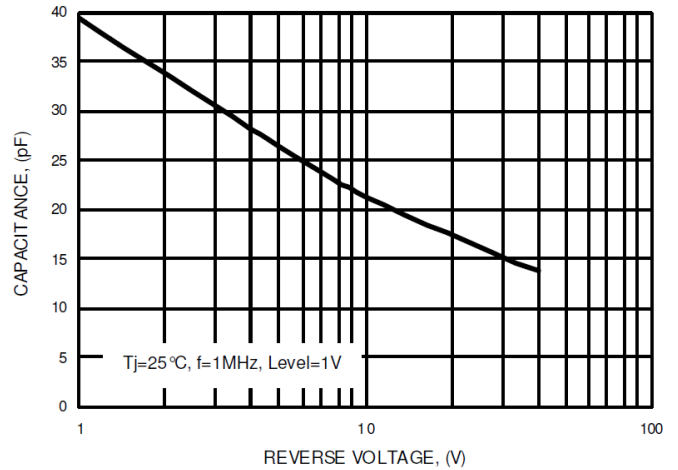


FIG.5- TYPICAL REVERSE CHARACTERISTICS

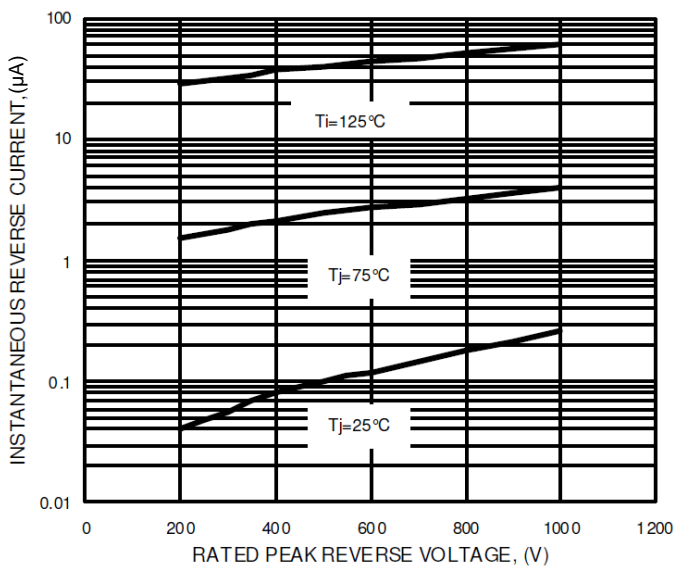
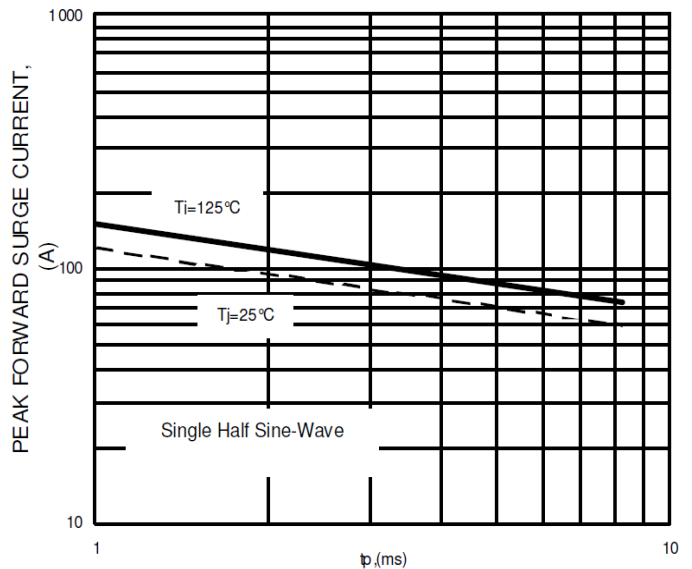
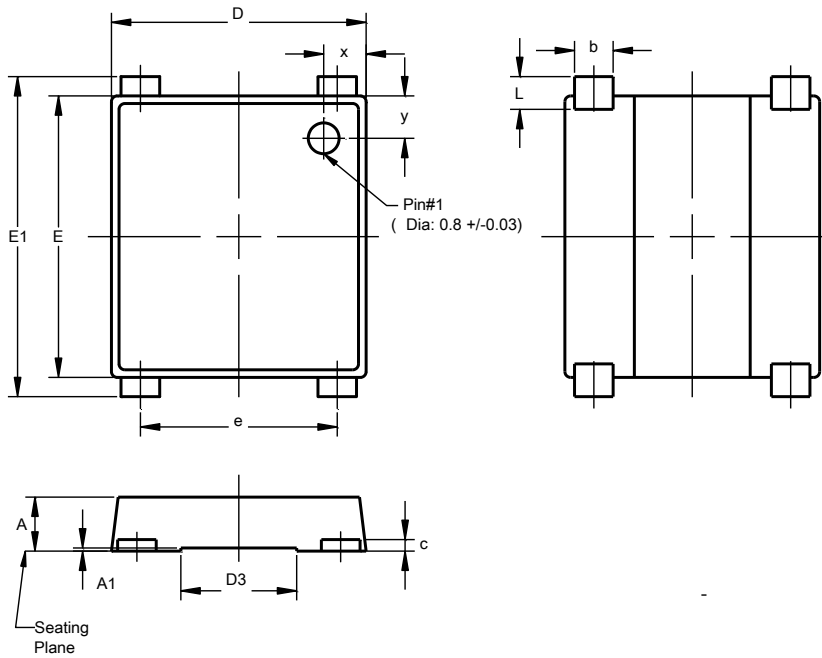


FIG.6- NON-REPETITIVE SURGE CURRENT



Package Outline Dimensions

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

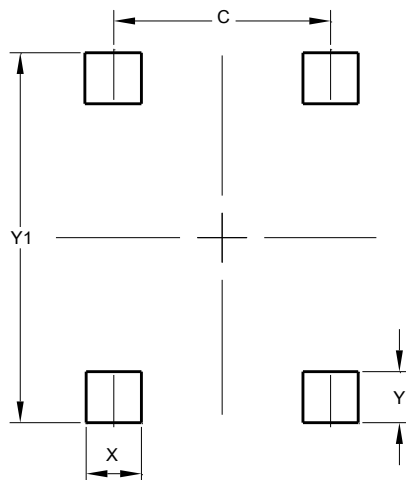


| MSBL | | | |
|----------------------|------|------|------|
| Dim | Min | Max | Typ |
| A | 1.30 | 1.50 | 1.40 |
| A1 | 0.04 | 0.08 | 0.06 |
| b | 0.95 | 1.15 | 1.00 |
| c | 0.27 | 0.40 | 0.30 |
| D | 6.50 | 6.70 | 6.60 |
| D3 | 2.90 | 3.10 | 3.00 |
| E | 7.20 | 7.40 | 7.30 |
| E1 | 7.90 | 8.60 | 8.30 |
| 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 | | | |

NEW PRODUCT

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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