



### 1.5A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

## Product Summary (@TA = +25°C)

V <sub>RRM</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> (V)	I <sub>R</sub> (μ <b>A</b> )
1,000	1.5	1.1	5

## **Description and Applications**

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

## **Features and Benefits**

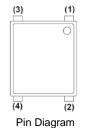
- Glass Passivated Die Construction
- Compact, Thin Profile Package Design
- Reliable Robust Construction
- Ideal for SMT Manufacturing
- Rated at 1000V PRV
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)

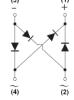
### **Mechanical Data**

- 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 (63)
- Polarity: As Marked on Body
- Weight: 0.216 grams (Approximate)









Internal Schematic

## **Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
MSB15MH-13	Commercial	MSBL	2,500/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**

MSBL



MB15MH= Product Type Marking Code

Oii = 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		Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		1,000	V
RMS Reverse Voltage		700	V
Average Rectified Output Current @ T <sub>C</sub> = +110°C	Io	1.5	Α
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load		70	Α
Non-Repetitive Peak Forward Surge Current, 1.0ms Single Half Sine-Wave Superimposed on Rated Load		140	Α
I <sup>2</sup> t Rating for Fusing (1ms < t < 8.3ms)		20.33	A <sup>2</sup> S

# **Thermal Characteristics**

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	50	°C/W
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	10	°C/W
Typical Thermal Resistance, Junction to Lead	R <sub>0</sub> JL	15	°C/W
Operating and Storage Temperature Range	T <sub>J,</sub> T <sub>STG</sub>	-55 to +150	°C

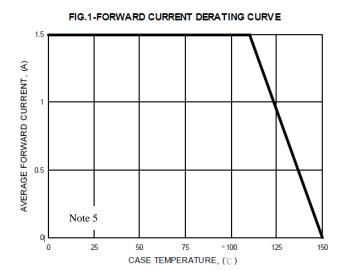
# **Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

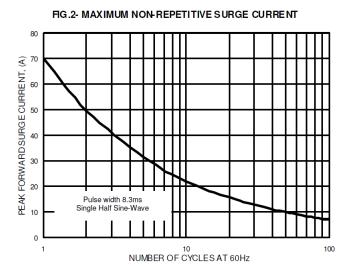
Characteristic	Symbol	Min	Тур	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 6)	$V_{(BR)R}$	1,000	-	_	V	$I_R = 5\mu A$
Forward Voltage	VF	1111	— 0.77 — 0.94	1.02 — 1.1 —	V	$\begin{split} I_F &= 0.75\text{A},  T_A = +25^{\circ}\text{C} \\ I_F &= 0.75\text{A},  T_A = +125^{\circ}\text{C} \\ I_F &= 1.5\text{A},  T_A = +25^{\circ}\text{C} \\ I_F &= 1.5\text{A},  T_A = +125^{\circ}\text{C} \end{split}$
Leakage Current (Note 6)	I <sub>R</sub>	_	_	5 500	μA	V <sub>R</sub> = 1000V, T <sub>A</sub> = +25°C V <sub>R</sub> = 1000V, T <sub>A</sub> = +125°C
Total Capacitance (Note 7)	Ст	_	25	_	pF	$V_R = 4V$ , $f = 1.0MHz$

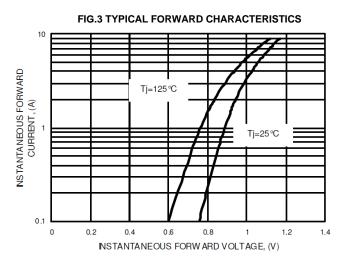
Notes:

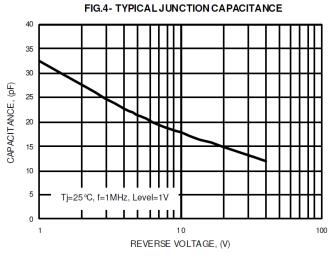
- 5. Device mounted on glass-epoxy substrate with 1oz 20mm x 20mm Cu pad per pin.6. Short duration pulse test used to minimize self-heating effect.7. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.

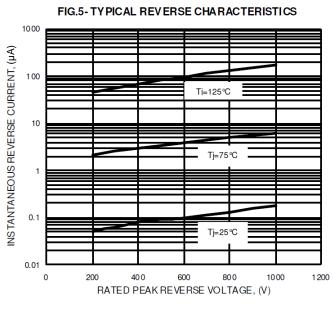


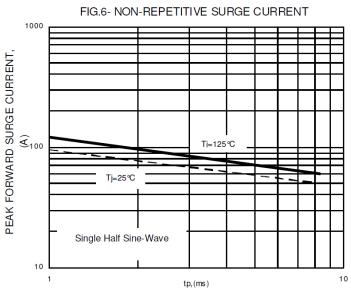








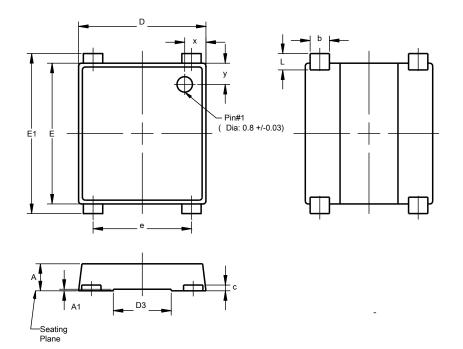






# **Package Outline Dimensions**

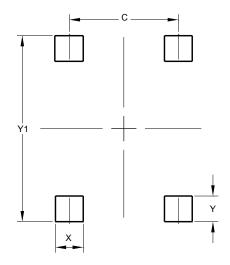
Please see http://www.diodes.com/package-outlines.html for the latest version.



MSBL					
Dim	Min	Max	Тур		
Α	1.30	1.50	1.40		
A1	0.04	0.08	0.06		
b	0.95	1.15	1.00		
С	0.27	0.40	0.30		
D	6.50	6.70	6.60		
D3	2.90	3.10	3.00		
Е	7.20	7.40	7.30		
E1	7.90	8.60	8.30		
е	5.00	5.20	5.10		
L	0.65	1.05	0.85		
х	0.95	1.25	1.10		
У	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)
С	5.10
Х	1.30
Y	1.20
Y1	8.70



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