1.2A SURFACE MOUNT GLASS PASSIVATED BRIDGE RECTIFIER

Product Summary (@T_A = +25°C)

V_{RRM} (V)	I_O (A)	V_F (V)	I_R (µA)
1,000	1.2	1.1	5

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)**

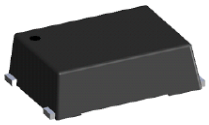
Description and Applications

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

Mechanical Data

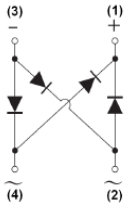
- Case: MSB
- Case Material: Molded Plastic; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish – Matte Tin Annealed over Copper Leadframe; Solderable per MIL-STD-202, Method 208 e3
- Polarity: As Marked on Body
- Weight: 0.09 grams (Approximate)

MSB



Top View

Pin Diagram



Internal Schematic

Ordering Information (Note 4)

Part Number	Case	Packaging
MSB12M-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 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

MSB

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

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitance 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	1,000	V
RMS Reverse Voltage	$V_{R(RMS)}$	700	V
Average Rectified Output Current @T_C = +120°C	I_O	1.2	A
Non-Repetitive Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I_{FSM}	45	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Ambient (Note 5)	$R_{\theta JA}$	70	°C/W
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	10	°C/W
Typical Thermal Resistance, Junction to Lead	$R_{\theta JL}$	30	°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)	$V_{(BR)R}$	1,000	—	—	V	I_R = 5μA
Forward Voltage	V_F	— —	0.9 1.0	1.1 1.2	V	I_F = 0.6A I_F = 1.2A
Leakage Current (Note 6)	I_R	— —	— —	5 500	μA	V_R = 1,000V, T_A = +25°C V_R = 1,000V, T_A = +125°C
Typical Total Capacitance	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.

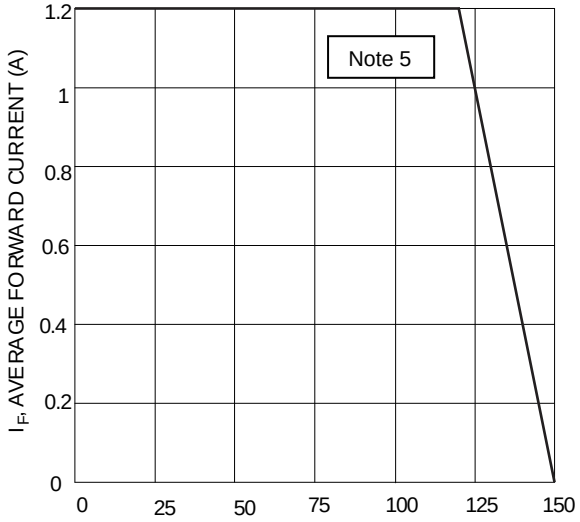


Figure 1 Forward Current Derating Curve

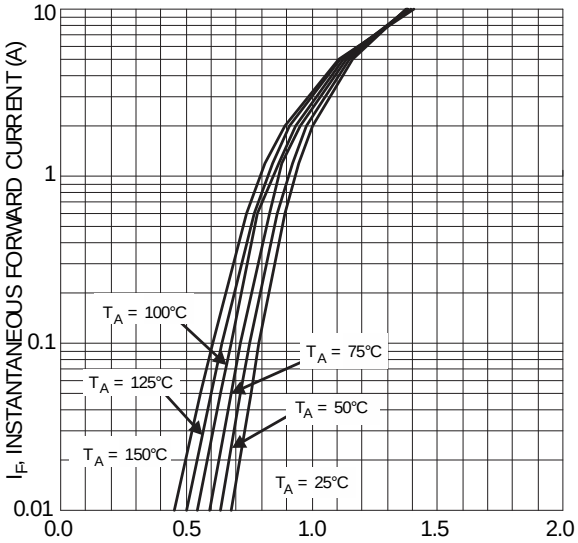


Figure 2 Typical Forward Characteristics

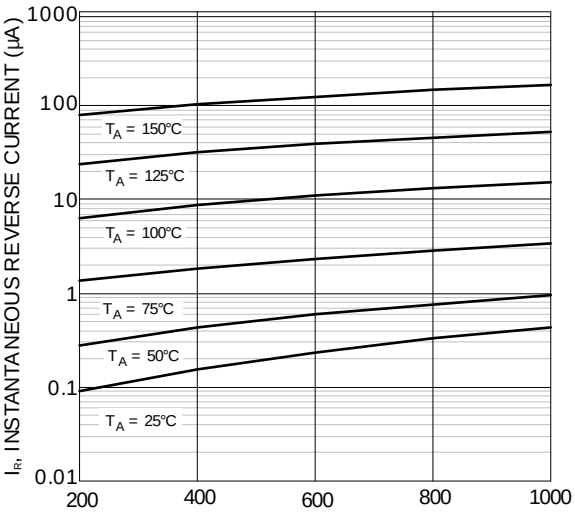


Figure 3 Typical Reverse Characteristics

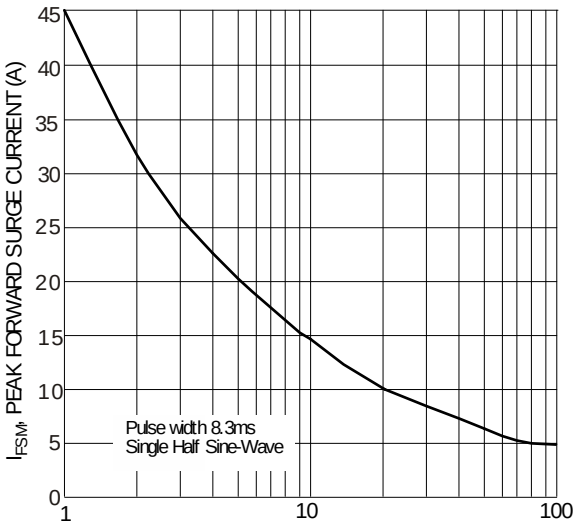


Figure 4 Forward Surge Current Derating Curve

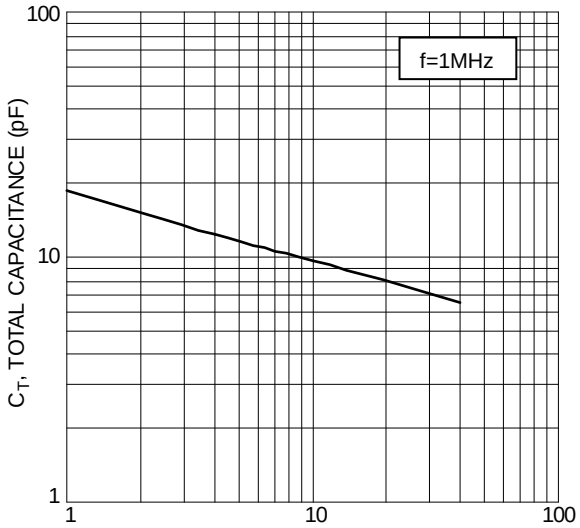
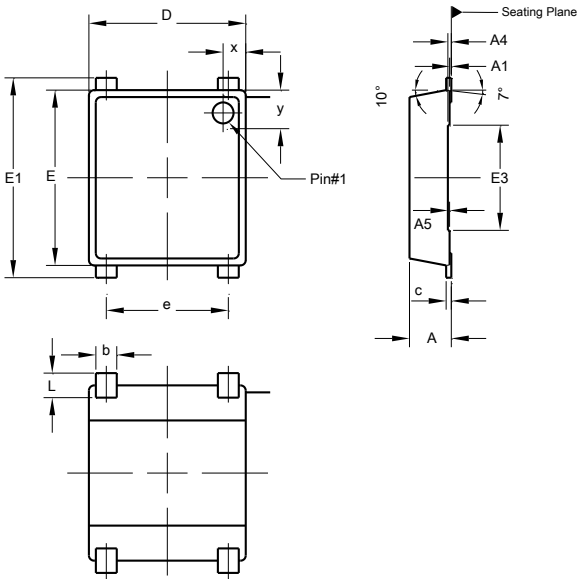


Figure 5 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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



MSB			
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

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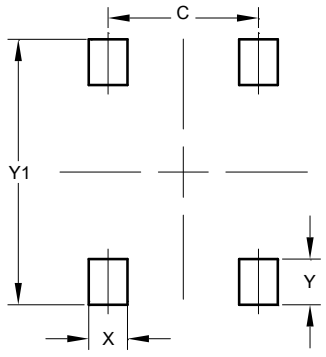
MSB



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

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