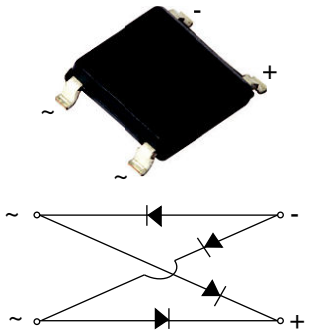
Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifier



Case Style (MBLS)

FEATURES

- UL recognition file number E54214
- Low profile - typical height of 1.4 mm
- Ideal for automated placement
- High surge current capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for power supply, lighting ballaster, battery charger, home appliances, office equipment, and telecommunication applications.

MECHANICAL DATA

Case: MBLS

Epoxy meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
M3 suffix, meets JESD 201 class 1A whisker test

Polarity: As marked on body

PRIMARY CHARACTERISTICS	
Package	MBLS
$I_{F(AV)}$	1.0 A
V_{RRM}	400 V, 600 V, 800 V, 1000 V
I_{FSM}	30 A
I_R	5 µA
V_F at I_F = 0.4 A	0.95 V
T_J max.	150 °C
Diode variations	Quad

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**SYMBOL**	**MBL104S**	**MBL106S**	**MBL108S**	**MBL110S**	**UNIT**
Maximum repetitive peak reverse voltage	V_{RRM}	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	400	600	800	1000	V
Maximum average forward output rectified current (fig. 1, fig. 2)	$I_{F(AV)}$ (1)	1.0				A
Peak forward surge current single sine-wave superimposed on rated load	I_{FSM}	30				A
Rating for fusing (t < 8.3 ms)	I^2t	3.0				A^2s
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150				°C

Note

(1) Device mounted on 0.47" x 0.47" (12 mm x 12 mm) copper pad areas, 1 oz. PCB

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)								
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**MBL104S**	**MBL106S**	**MBL108S**	**MBL110S**	**UNIT**
Maximum instantaneous forward voltage drop per diode	I_F = 0.4 A	T_A = 25 °C	V_F (1)	0.95				V
Maximum DC reverse current per diode	Rated V_R	T_A = 25 °C	I_R (2)	5				µA
		T_A = 125 °C		500				

Notes

(1) Pulse test: 300 µs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °c unless otherwise noted)						
PARAMETER	**SYMBOL**	**MBL104S**	**MBL106S**	**MBL108S**	**MBL110S**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$	72				°C/W
	$R_{\theta JL}$	25				

Note

(1) Device mounted on 0.47" x 0.47" (12 mm x 12 mm) copper pad areas, 1 oz. PCB

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
MBL106S-M3/I	0.136	I	4000	13" diameter plastic tape and reel

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

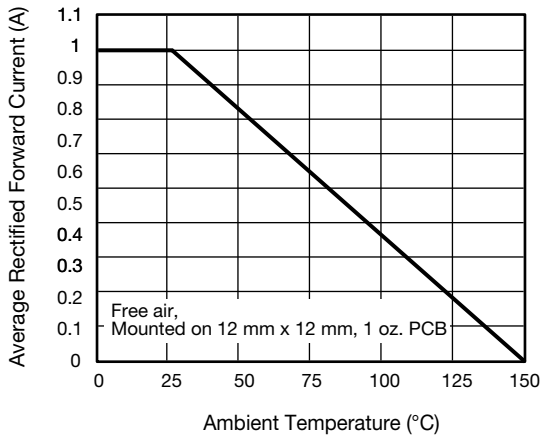


Fig. 1 - Derating Curve for Output Rectified Current

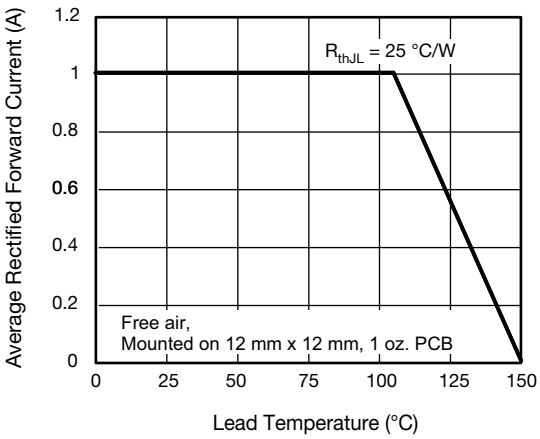


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

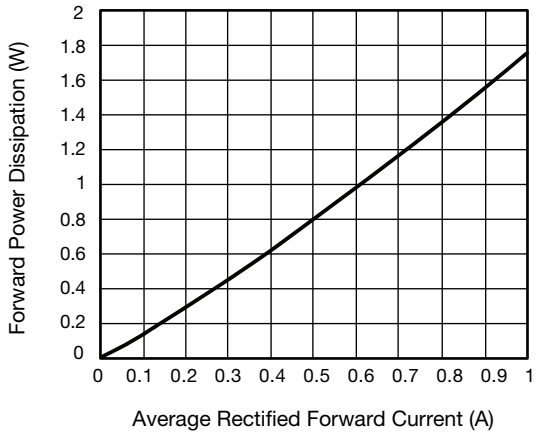


Fig. 3 - Forward Power Dissipation

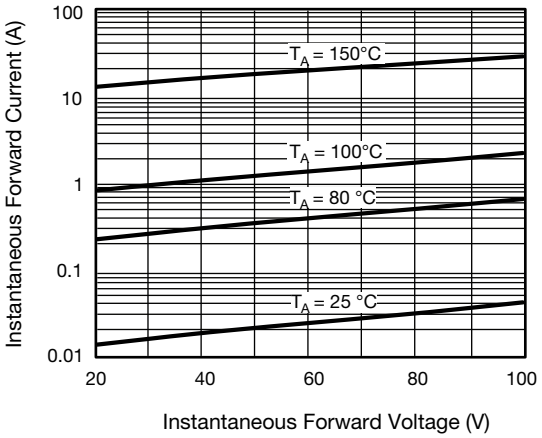


Fig. 5 - Typical Reverse Characteristics Per Diode

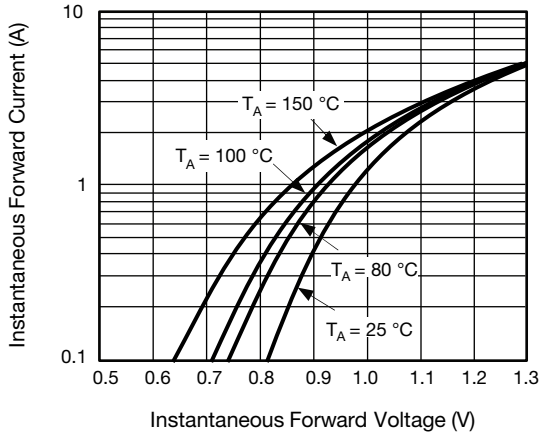


Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

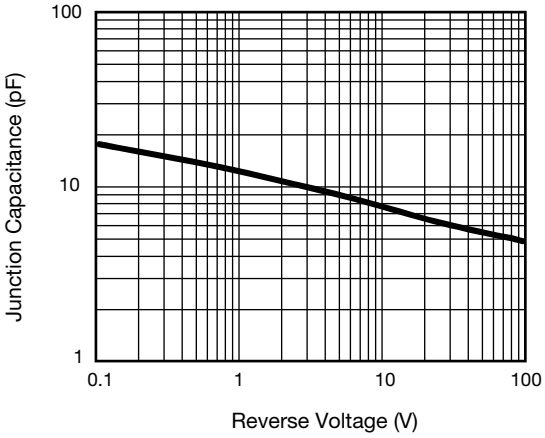
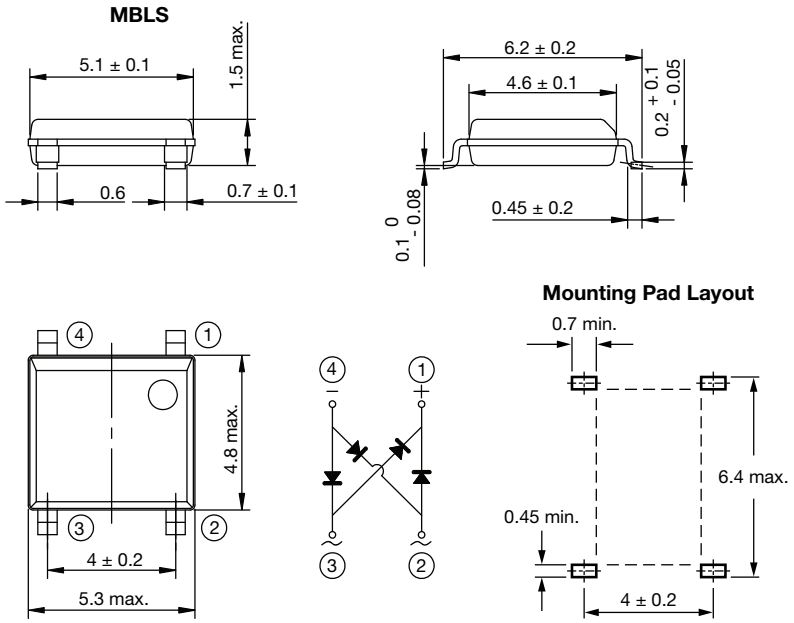


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in millimeters



Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.