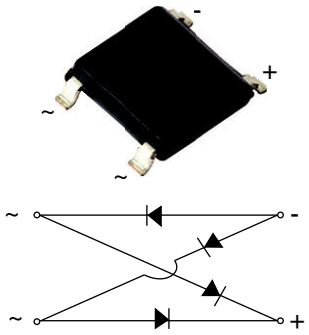
Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifier



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)

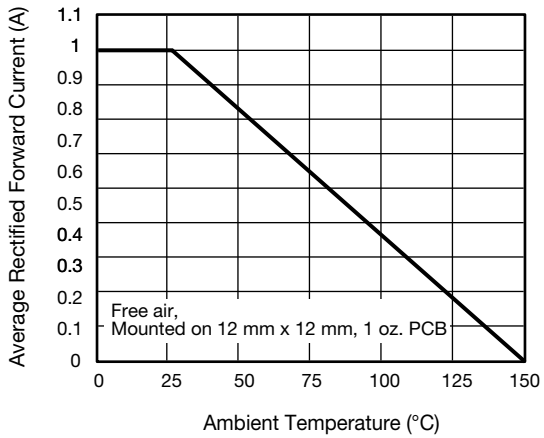


Fig. 1 - Derating Curve for Output Rectified Current

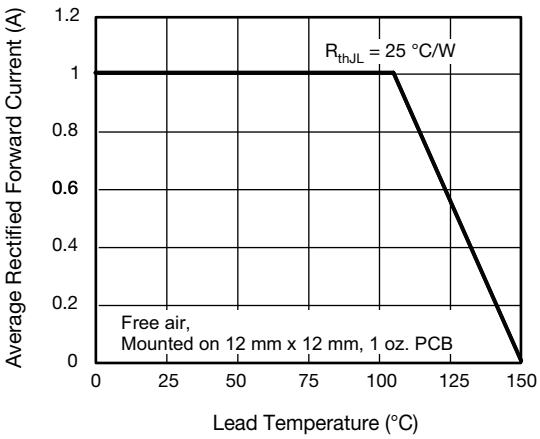


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

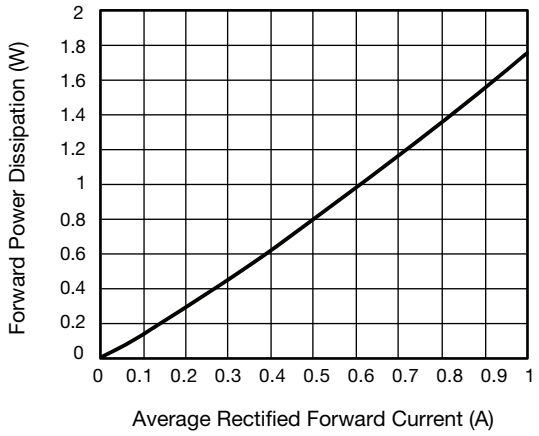


Fig. 3 - Forward Power Dissipation

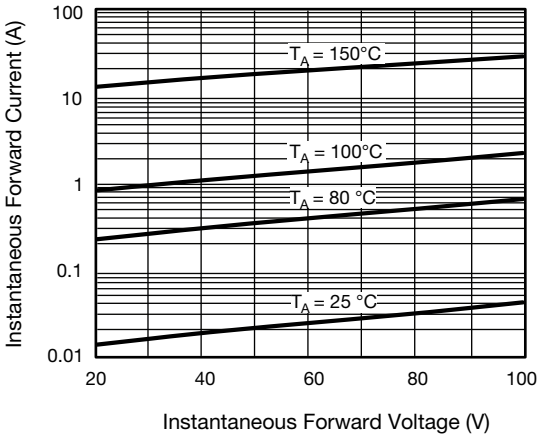


Fig. 5 - Typical Reverse Characteristics Per Diode

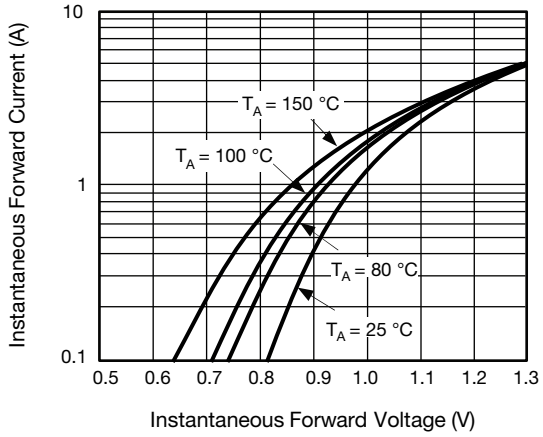


Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

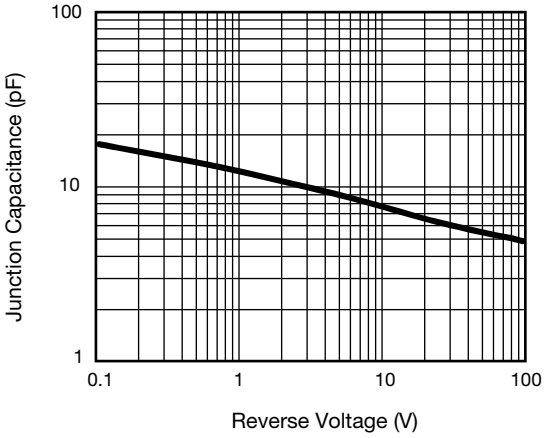
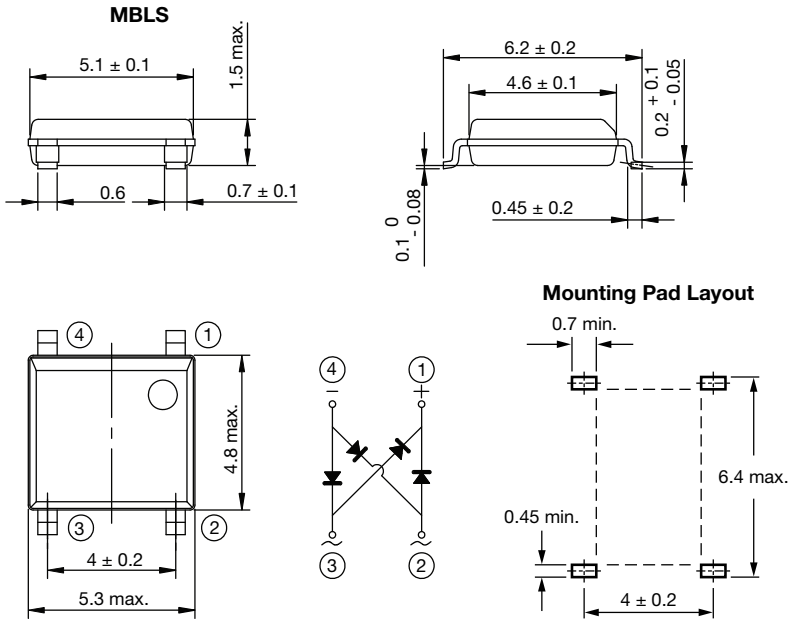


Fig. 6 - Typical Junction Capacitance Per Diode

PACKAGE OUTLINE DIMENSIONS in millimeters



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