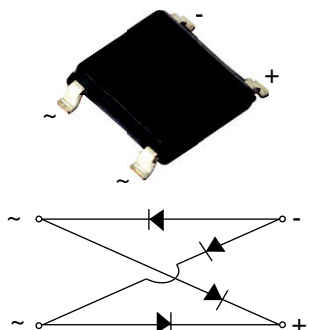


## Miniature Glass Passivated Single-Phase Surface Mount Bridge Rectifier



Case Style (MBLS)



**RoHS**  
COMPLIANT  
HALOGEN  
FREE

### 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](http://www.vishay.com/doc?99912)

### 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 $\mu$ A
$V_F$ 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 <sup>2</sup> s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150				°C

#### Note

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

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	MBL104S	MBL106S	MBL108S	MBL110S	UNIT
Maximum instantaneous forward voltage drop per diode	$I_F = 0.4\text{ A}$	$T_A = 25\text{ }^{\circ}\text{C}$	$V_F^{(1)}$	0.95				V
Maximum DC reverse current per diode	Rated $V_R$	$T_A = 25\text{ }^{\circ}\text{C}$	$I_R^{(2)}$	5				$\mu\text{A}$
		$T_A = 125\text{ }^{\circ}\text{C}$		500				

**Notes**

- (1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle  
(2) Pulse test: Pulse width  $\leq 40\text{ ms}$

**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

PARAMETER	SYMBOL	MBL104S	MBL106S	MBL108S	MBL110S	UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>	72				°C/W
	R <sub>θJL</sub>	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

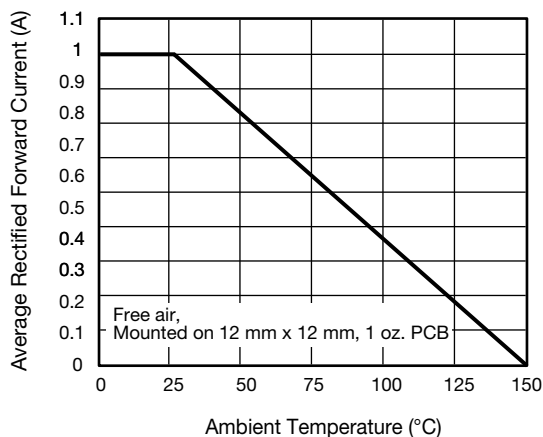
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Derating Curve for Output Rectified Current

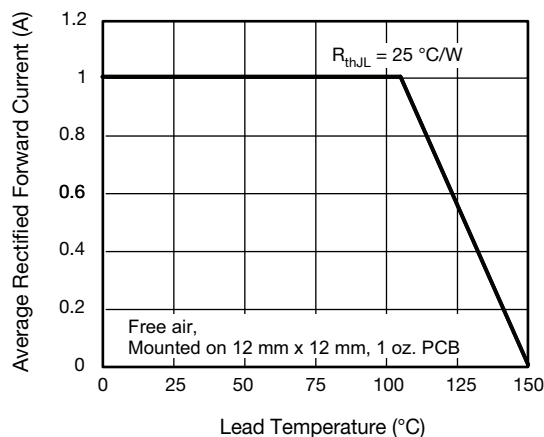


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

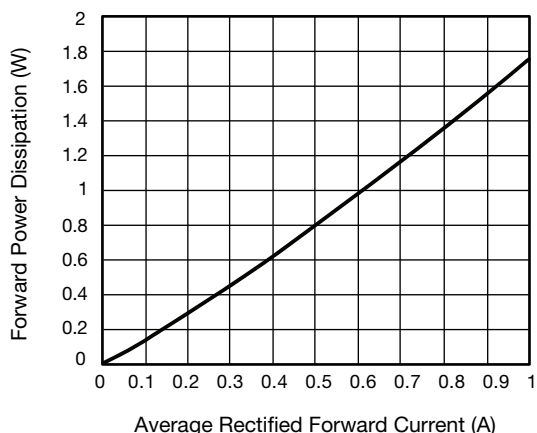


Fig. 3 - Forward Power Dissipation

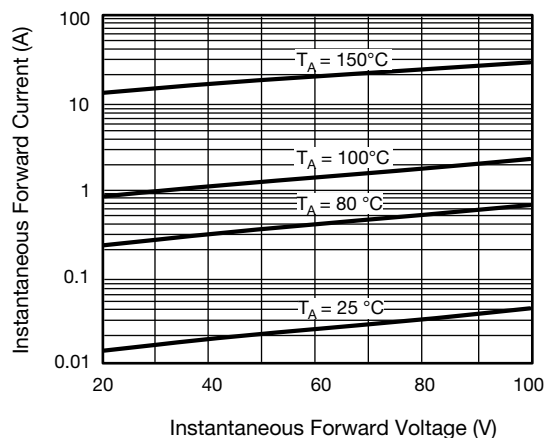


Fig. 5 - Typical Reverse Characteristics Per Diode

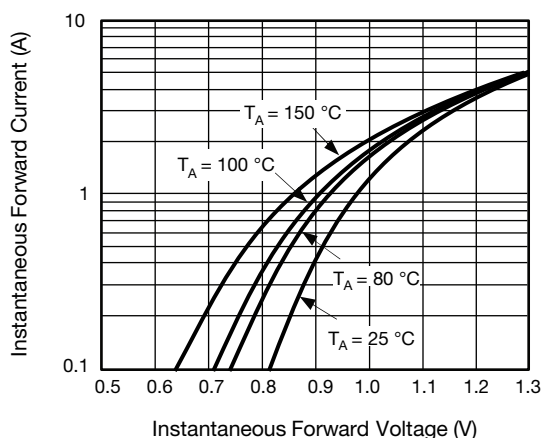


Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

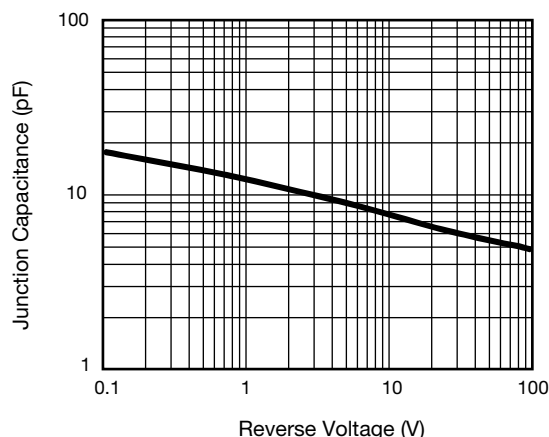
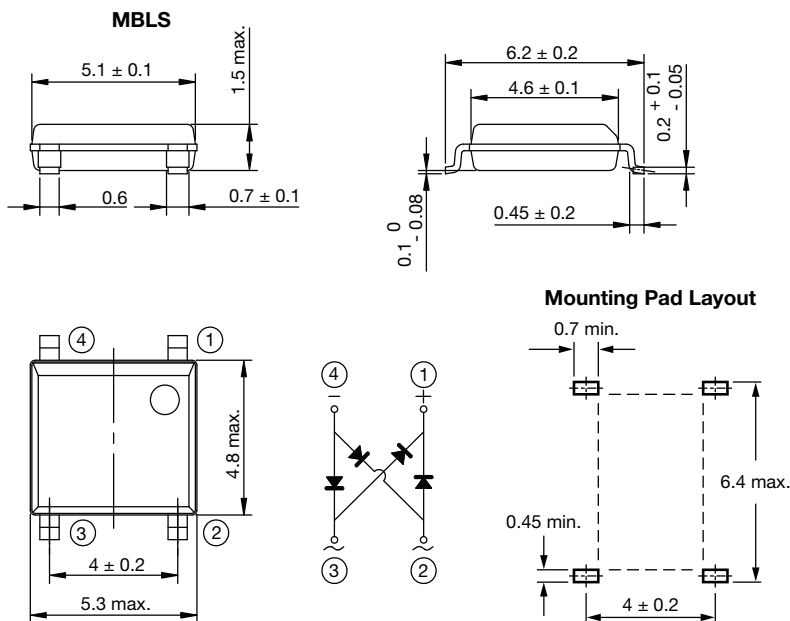


Fig. 6 - Typical Junction Capacitance Per Diode

## PACKAGE OUTLINE DIMENSIONS in millimeters





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