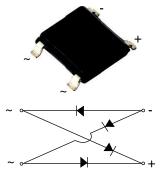


# MBL104S, MBL106S, MBL108S, MBL110S

Vishay General Semiconductor

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



Case Style (MBLS)

PRIMARY CHARACTERISTICS					
Package	MBLS				
I <sub>F(AV)</sub>	1.0 A				
V <sub>RRM</sub>	400 V, 600 V, 800 V, 1000 V				
I <sub>FSM</sub>	30 A				
I <sub>R</sub>	5 μΑ				
$V_F$ at $I_F = 0.4$ A	0.95 V				
T <sub>J</sub> max.	150 °C				
Diode variations	Quad				

### 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 <u>www.vishay.com/doc?99912</u>

## **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

<b>MAXIMUM RATINGS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)							
PARAMETER	SYMBOL	MBL104S	MBL106S	MBL108S	MBL110S	UNIT	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	400	600	800	1000	V	
Maximum RMS voltage	V <sub>RMS</sub>	280	420	560	700	V	
Maximum DC blocking voltage	V <sub>DC</sub>	400	600	800	1000	V	
Maximum average forward output rectified current (fig. 1, fig. 2)	I <sub>F(AV)</sub> <sup>(1)</sup>	1.0				А	
Peak forward surge current single sine-wave superimposed on rated load	I <sub>FSM</sub>	30			А		
Rating for fusing (t < 8.3 ms)	l <sup>2</sup> t	3.0			A <sup>2</sup> s		
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 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



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ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)								
PARAMETER	TEST CO	ONDITIONS	SYMBOL	DL MBL104S MBL106S MBL1		MBL108S	MBL110S	UNIT
Maximum instantaneous forward voltage drop per diode	I <sub>F</sub> = 0.4 A	T <sub>A</sub> = 25 °C	V <sub>F</sub> <sup>(1)</sup>	0.95		V		
Maximum DC reverse current	Rated V <sub>R</sub>	T <sub>A</sub> = 25 °C	I <sub>R</sub> <sup>(2)</sup>	5				μA
per diode		T <sub>A</sub> = 125 °C	'R (=/	500				μΑ

#### Notes

<sup>(1)</sup> Pulse test: 300 µs pulse width, 1 % duty cycle

<sup>(2)</sup> Pulse test: Pulse width  $\leq$  40 ms

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25$ °c unless otherwise noted)						
PARAMETER	SYMBOL	OL MBL104S MBL106S MBL108S MBL110S				UNIT
Typical thermal resistance <sup>(1)</sup>	R <sub>θJA</sub>		°C/W			
	R <sub>θJL</sub>	25				0/10

#### Note

<sup>(1)</sup> 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	l	4000	13" diameter plastic tape and reel				

### RATINGS AND CHARACTERISTICS CURVES (T<sub>A</sub> = 25 °C unless otherwise noted)

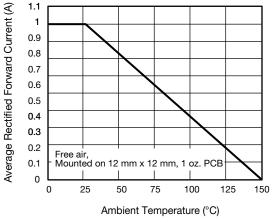
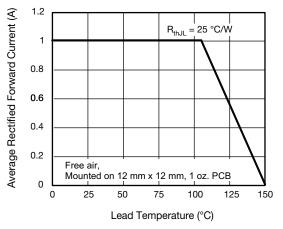
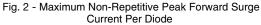


Fig. 1 - Derating Curve for Output Rectified Current

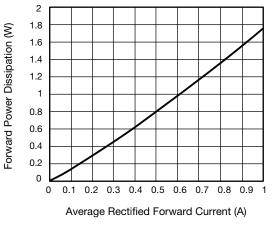






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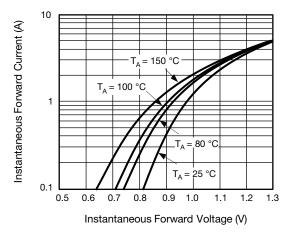
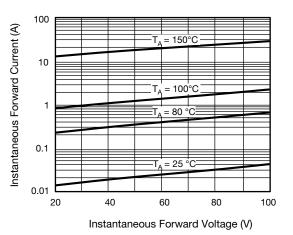
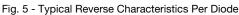
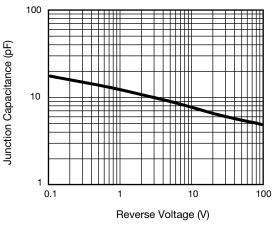


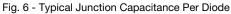
Fig. 4 - Typical Instantaneous Forward Characteristics Per Diode

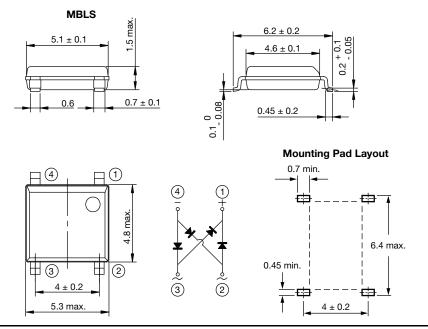
### **PACKAGE OUTLINE DIMENSIONS** in millimeters











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3

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