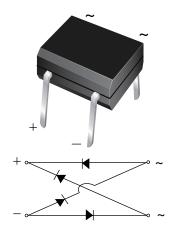
Vishay General Semiconductor

# **Miniature Glass Passivated Single-Phase Bridge Rectifiers**



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**Case Style MBM** 

PRIMARY CHARACTERISTICS					
Package MBM					
I <sub>F(AV)</sub>	0.5 A				
V <sub>RRM</sub>	200 V, 400 V, 600 V				
I <sub>FSM</sub>	35 A				
I <sub>R</sub>	5 µA				
$V_F$ at $I_F = 0.4$ A	1.0 V				
T <sub>J</sub> max.	150 °C				
Diode variations	Quad				

### FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automative insertion
- High surge current capability
- Solder dip 275 °C max. 10 s, per JESD 22-B106
  CompLiant
- 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: MBM

Molding compound meets UL 94 V-0 flammability rating Base P/N-E3 - RoHS-compliant, commercial grade

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test

Polarity: As marked on body

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER		SYMBOL	MB2M	MB4M	MB6M	UNIT
Device marking code			2	4	6	
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	200	400	600	V
Maximum RMS voltage		V <sub>RMS</sub>	140	280	420	V
Maximum DC blocking voltage		V <sub>DC</sub>	200	400	600	V
Maximum average forward output rectified current (fig. 1)	on glass-epoxy PCB <sup>(1)</sup>	1	0.5		A	
	on aluminum substrate <sup>(2)</sup>	I <sub>F(AV)</sub>	0.8			
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load		I <sub>FSM</sub>	35			A
Rating for fusing (t < 8.3 ms)		l <sup>2</sup> t	5.0		A <sup>2</sup> s	
Operating junction and storage temperature range		TJ, T <sub>STG</sub>	- 55 to + 150			°C

Notes

<sup>(1)</sup> On glass epoxy PCB mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) pads

(2) On aluminum substrate PCB with an area of 0.8" x 0.8" (20 mm x 20 mm) mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) solder pad





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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	MB2M	MB4M	MB6M	UNIT
Maximum instantaneous forward voltage per diode	I <sub>F</sub> = 0.4 A	V <sub>F</sub>		1.0		V
Maximum DC reverse current at rated DC blocking	T <sub>A</sub> = 25 °C	1-	5.0			μΑ
voltage per diode	T <sub>A</sub> = 125 °C	IR				
Typical junction capacitance per diode	4.0 V, 1 MHz	CJ	13		pF	

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	MB2M MB4M MB6M		MB6M	UNIT	
Typical thermal resistance	R <sub>0JA</sub> <sup>(1)</sup>	85				
	R <sub>0JA</sub> <sup>(2)</sup>	70			°C/W	
	R <sub>0JL</sub> <sup>(1)</sup>		20			

Notes

<sup>(1)</sup> On glass epoxy PCB mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) pads

(2) On aluminum substrate PCB with an area of 0.8" x 0.8" (20 mm x 20 mm) mounted on 0.05" x 0.05" (1.3 mm x 1.3 mm) solder pad

ORDERING INFORMATION (Example)						
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE		
MB2M-E3/45	0.22	45	100	Tube		

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

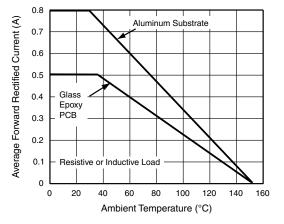
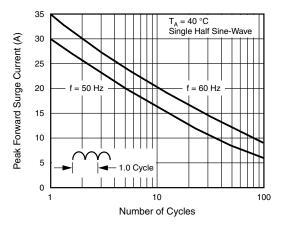


Fig. 1 - Derating Curve for Output Rectified Current







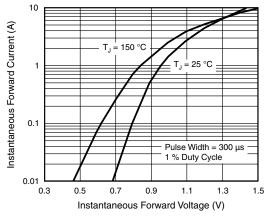


Fig. 3 - Typical Forward Voltage Characteristics Per Diode

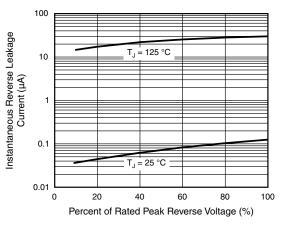
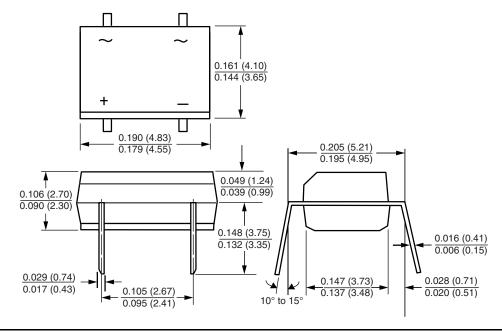


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

#### **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



**Case Style MBM** 

30 T<sub>J</sub> = 25 °C f = 1.0 MHz 25 Junction Capacitance (pF)  $V_{sig} = 50 \text{ mV}_{p-p}$ 20 15 10 5 0 10 100 0.1 1 1000

Reverse Voltage (V) Fig. 5 - Typical Junction Capacitance Per Diode

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MB2M, MB4M, MB6M

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