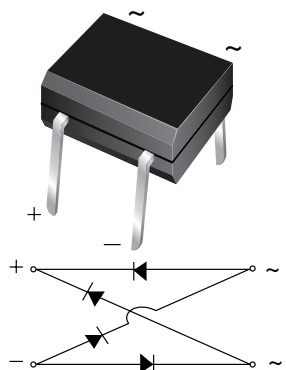


# Miniature Glass Passivated Single-Phase Bridge Rectifiers



Case Style MBM

## FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Applicable for automotive insertion
- High surge current capability
- Recommended for non-automotive applications
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



**RoHS**  
COMPLIANT

## TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for power supply, lighting ballaster, battery charger, home appliances, office equipment, and telecommunication applications.

## MECHANICAL DATA

**Case:** MBM

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test

**Polarity:** As marked on body

## PRIMARY CHARACTERISTICS

$I_{F(AV)}$	0.5 A
$V_{RRM}$	200 V, 400 V, 600 V
$I_{FSM}$	35 A
$I_R$	5 $\mu$ A
$V_F$	1.0 V
$T_J$ max.	150 °C

## MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	MB2M	MB4M	MB6M	UNIT
Device marking code		2	4	6	
Maximum repetitive peak reverse voltage	$V_{RRM}$	200	400	600	V
Maximum RMS voltage	$V_{RMS}$	140	280	420	V
Maximum DC blocking voltage	$V_{DC}$	200	400	600	V
Maximum average forward output current (Fig. 1) on glass-epoxy P.C.B. on aluminum substrate	$I_{F(AV)}$	0.5 <sup>(1)</sup> 0.8 <sup>(2)</sup>			A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	$I_{FSM}$	35			A
Rating for fusing ( $t < 8.3$ ms)	$I^2t$	5.0			A <sup>2</sup> s
Operating junction and storage temperature range	$T_J, T_{STG}$	- 55 to + 150			°C

### Notes:

(1) On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3 mm) pads

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

ELECTRICAL CHARACTERISTICS ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	MB2M	MB4M	MB6M	UNIT
Maximum instantaneous forward voltage drop per diode	0.4 A	$V_F$	1.0			V
Maximum DC reverse current at rated DC blocking voltage per diode	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 125\text{ }^{\circ}\text{C}$	$I_R$	5.0 100			$\mu\text{A}$
Typical junction capacitance per diode <sup>(1)</sup>		$C_J$	13			pF

**Note:**

(1) Measured at 1.0 MHz and applied reverse voltage of 4.0 V

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

**Notes:**

(1) On glass epoxy P.C.B. mounted on 0.05 x 0.05" (1.3 x 1.3 mm) pads

(2) On aluminum substrate P.C.B. with an area of 0.8" x 0.8" (20 x 20 mm) mounted on 0.05 x 0.05" (1.3 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

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

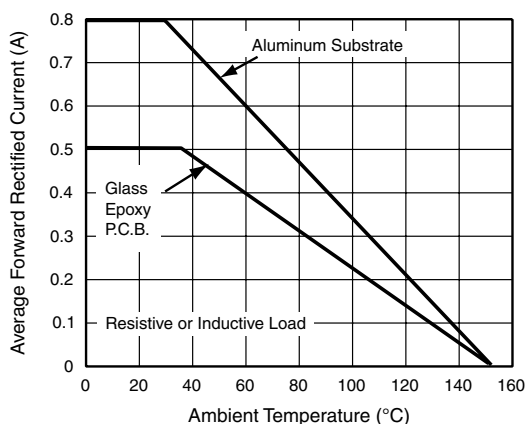


Figure 1. Derating Curve for Output Rectified Current

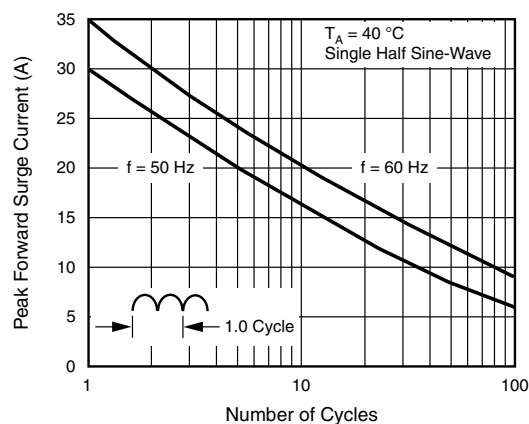


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

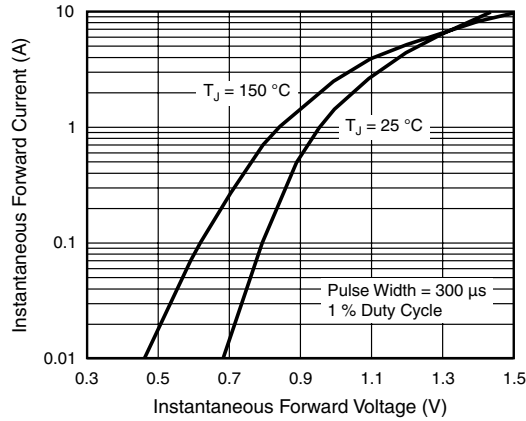


Figure 3. Typical Forward Voltage Characteristics Per Diode

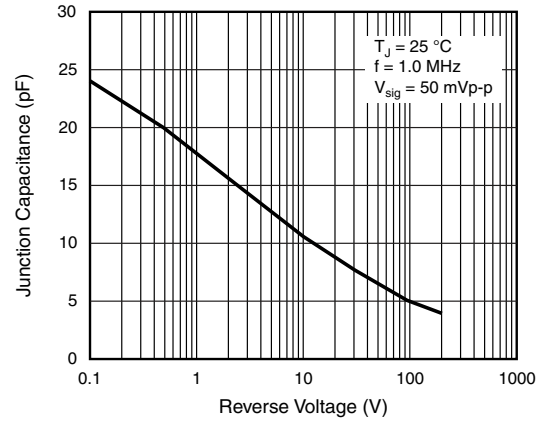


Figure 5. Typical Junction Capacitance Per Diode

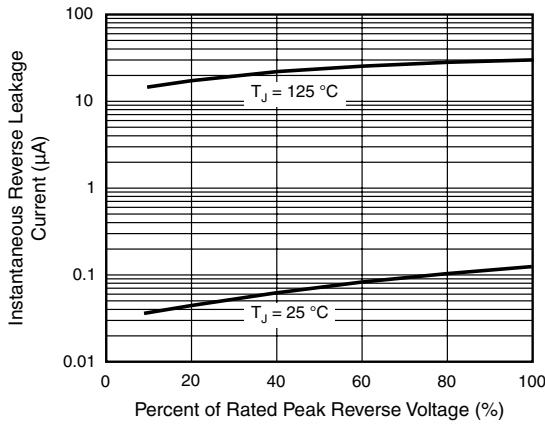
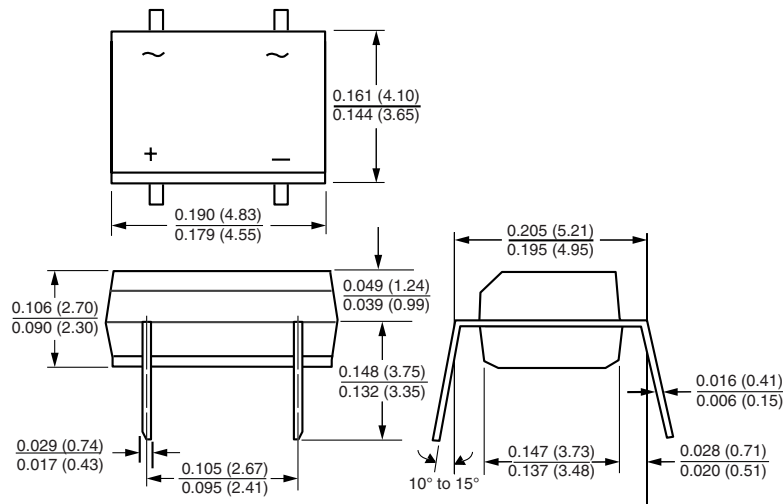


Figure 4. Typical Reverse Leakage Characteristics Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

#### Case Style MBM





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