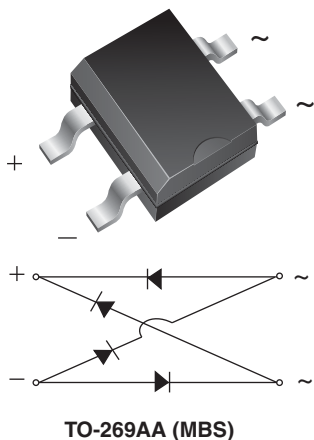


## Miniature Glass Passivated Fast Recovery Surface Mount Bridge Rectifier



### FEATURES

- UL recognition, file number E54214
- Saves space on printed circuit boards
- Ideal for automated placement
- Fast recovery, low switching loss
- 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)


**RoHS**  
COMPLIANT

### 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:** TO-269AA (MBS)

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 JESD22-B102

E3 suffix 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
$I_{FSM}$	30 A
$t_{rr}$	150 ns
$V_F$ at $I_F = 0.4$ A	1.25 V
$T_J$ max.	150 °C
Package	TO-269AA (MBS)
Diode variations	Quad

MAXIMUM RATINGS (T <sub>A</sub> = 25 °C unless otherwise noted)				
PARAMETER	SYMBOL	RMB2S	RMB4S	UNIT
Device marking code		2R	4R	
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	200	400	V
Maximum RMS voltage	V <sub>RMS</sub>	140	280	V
Maximum DC blocking voltage	V <sub>DC</sub>	200	400	V
Maximum average forward output rectified current at T <sub>A</sub> = 30 °C	on glass-epoxy PCB <sup>(1)</sup>	0.5		A
	on aluminum substrate <sup>(2)</sup>	0.8		
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	30		A
Rating for fusing (t < 8.3 ms)	I <sup>2</sup> t	5.0		A <sup>2</sup> s
Operating junction and storage temperature range	T <sub>J</sub> , 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

<sup>(2)</sup> 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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)					
PARAMETER	TEST CONDITIONS	SYMBOL	RMB2S	RMB4S	UNIT
Maximum instantaneous forward voltage per diode	$I_F = 0.4\text{ A}$	$V_F$	1.25		V
Maximum DC reverse current at rated DC blocking voltage per diode	$T_A = 25\text{ }^{\circ}\text{C}$	$I_R$	5.0		$\mu\text{A}$
	$T_A = 125\text{ }^{\circ}\text{C}$		100		
Maximum reverse recovery time per diode	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $t_{rr} = 0.25\text{ A}$	$t_{rr}$	150		ns
Typical junction capacitance per diode	4.0 V, 1 MHz	$C_J$	13		pF

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	RMB2S	RMB4S	UNIT
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ <sup>(1)</sup>	85		$^{\circ}\text{C/W}$
	$R_{\theta JA}$ <sup>(2)</sup>	70		
	$R_{\theta JL}$ <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

<sup>(2)</sup> 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

<b>ORDERING INFORMATION</b> (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
RMB4S-E3/45	0.22	45	100	Tube
RMB4S-E3/80	0.22	80	3000	13" diameter paper tape and reel

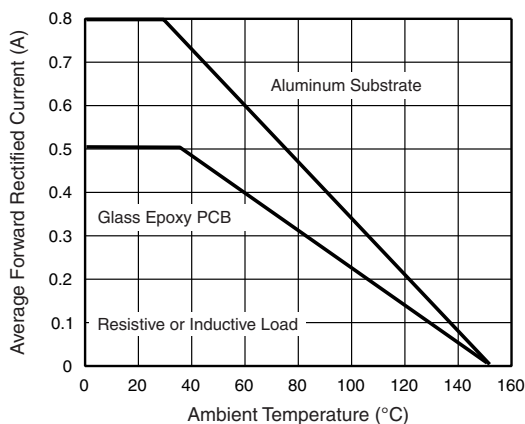
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)


Fig. 1 - Maximum Forward Current Derating Curve

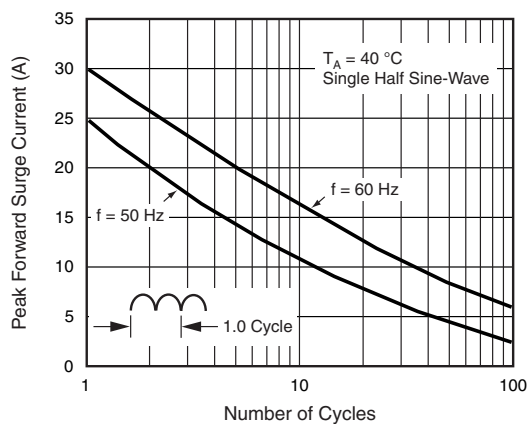


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

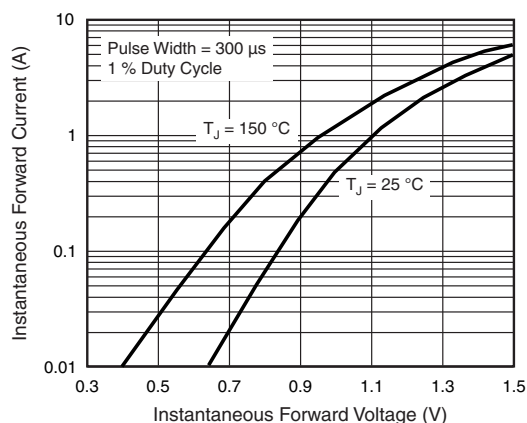


Fig. 3 - Typical Instantaneous Forward Characteristics Per Diode

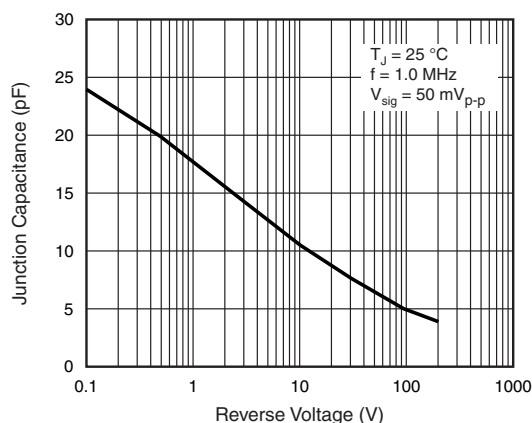


Fig. 5 - Typical Junction Capacitance Per Diode

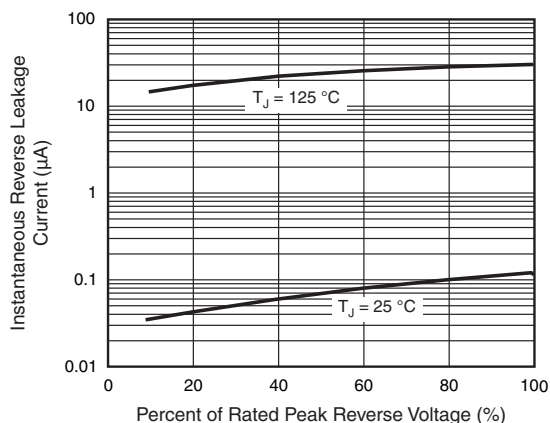
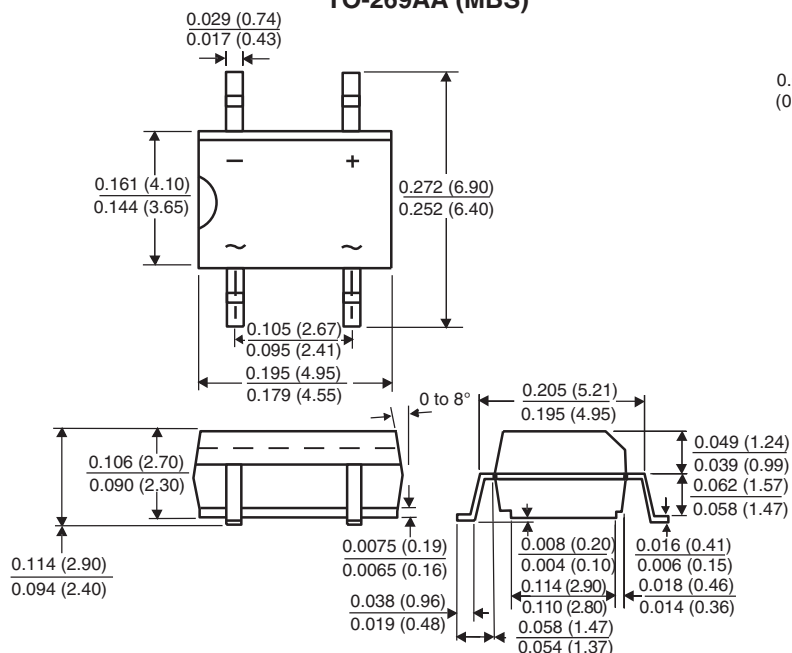


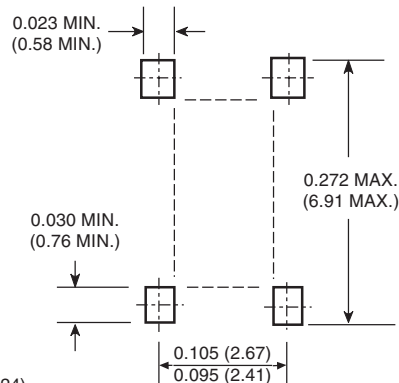
Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

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

## **TO-269AA (MBS)**



## **Mounting Pad Layout**





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