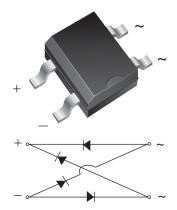
Vishay General Semiconductor

Miniature Glass Passivated Fast Recovery Surface Mount Bridge Rectifier



TO-269AA (MBS)

PRIMARY CHARACTERISTICS					
Package	TO-269AA (MBS)				
I _{F(AV)}	0.5 A				
V _{RRM}	200 V, 400 V, 600 V				
I _{FSM}	35 A				
I _R	5 μΑ				
V_F at $I_F = 0.4$ A	1.0 V				
T _J max.	150 °C				
Diode variations	Quad				

FEATURES

- UL recognition, file number E54214
- · Saves space on printed circuit boards
- Ideal for automated placement
- High surge current capability



- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
 KOHS 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: 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

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted) PARAMETER SYMBOL MB2S MB4S MB6S UNIT 2 4 6 Device marking code Maximum repetitive peak reverse voltage 200 400 600 V V_{RRM} Maximum RMS voltage 140 280 420 ٧ V_{RMS} Maximum DC blocking voltage 600 V_{DC} 200 400 V on glass-epoxy PCB (1) 0.5 Maximum average forward output I_{F(AV)} A rectified current (fig. 1) on aluminum substrate (2) 0.8 Peak forward surge current 8.3 ms single half sine-wave 35 A **I**ESM superimposed on rated load Rating for fusing (t < 8.3 ms) l²t 5.0 A²s Operating junction and storage temperature range T_J, T_{STG} - 55 to + 150 °C

Notes

 $^{(1)}\,$ 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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ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	MB2S	MB4S	MB6S	UNIT
Maximum instantaneous forward voltage per diode	I _F = 0.4 A	V _F		1.0		V
Maximum DC reverse current at rated DC blocking voltage per diode	T _A = 25 °C	I_	5.0		μA	
	T _A = 125 °C	IR				
Typical junction capacitance per diode	4.0 V, 1 MHz	CJ		13		pF

THERMAL CHARACTERISTICS ($T_A = 25 \text{ °C}$ unless otherwise noted)						
PARAMETER	SYMBOL	MB2S	MB4S	MB6S	UNIT	
	R _{0JA} ⁽¹⁾	85			°C/W	
Typical thermal resistance	R _{0JA} ⁽²⁾	70				
	R _{0JL} ⁽¹⁾	20				

Notes

⁽¹⁾ 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		
MB2S-E3/45	0.22	45	100	Tube		
MB2S-E3/80	0.22	80	3000	13" diameter paper tape and reel		

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25$ °C unless otherwise noted)

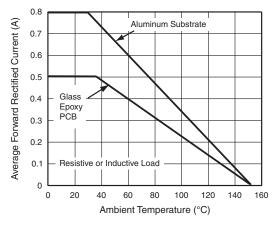


Fig. 1 - Derating Curve for Output Rectified Current

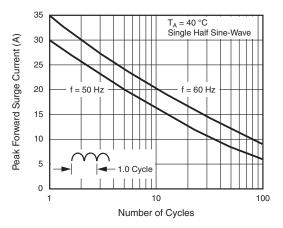
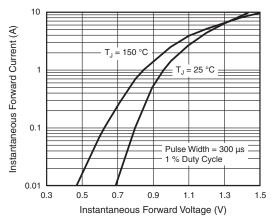


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

Document Number: 88661

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Fig. 3 - Typical Forward Voltage Characteristics Per Diode

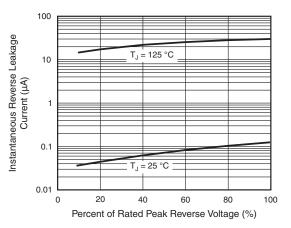
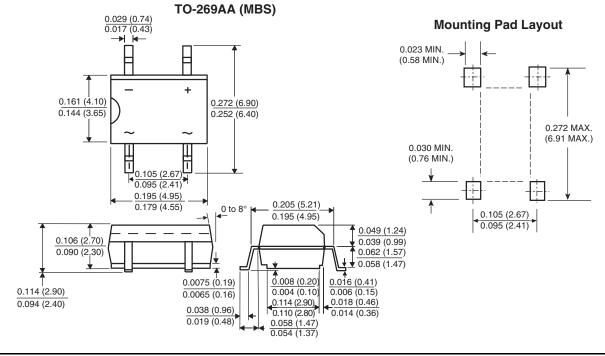


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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3

Document Number: 88661

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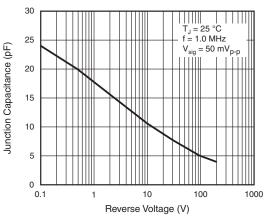


Fig. 5 - Typical Junction Capacitance Per Diode



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