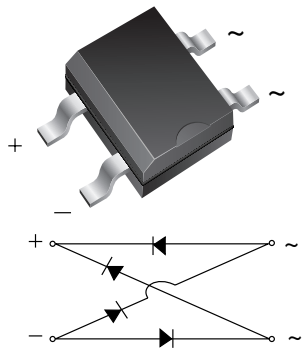
Miniature Glass Passivated Fast Recovery Surface Mount Bridge Rectifier



TO-269AA (MBS)

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 250 °C
- 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.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	0.5 A
V_{RRM}	200 V, 400 V
I_{FSM}	30 A
t_{rr}	150 ns
V_F	1.25 V
T_J max.	150 °C

MECHANICAL DATA

Case: TO-269AA (MBS)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102
E3 suffix for commercial grade, meets JESD 201 class 1A whisker test

Polarity: As marked on body

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

PARAMETER		SYMBOL	RMB2S	RMB4S	UNIT
Device marking code			2R	4R	
Maximum repetitive peak reverse voltage		V_{RRM}	200	400	V
Maximum RMS voltage		V_{RMS}	140	280	V
Maximum DC blocking voltage		V_{DC}	200	400	V
Maximum average forward output rectified current at T_A = 30 °C	on glass-epoxy P.C.B. on aluminum substrate	$I_{F(AV)}$	0.5 (1) 0.8 (2)		A
Peak forward surge current 8.3 msec single half sine-wave superimposed on rated load		I_{FSM}	30		A
Rating for fusing (t < 8.3 ms)		I^2t	5.0		A^2s
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 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**RMB2S**	**RMB4S**	**UNIT**
Maximum instantaneous forward voltage drop per diode	0.4 A		V_F	1.25		V
Maximum DC reverse current at rated DC blocking voltage per diode		T_A = 25 °C T_A = 125 °C	I_R	5.0 100		µA
Maximum reverse recovery time per diode	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	150		ns
Typical junction capacitance per diode	4.0 V, 1 MHz		C_J	13		pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**RMB2S**	**RMB4S**	**UNIT**
Typical thermal resistance	$R_{\theta JA}$ $R_{\theta JA}$ $R_{\theta JL}$	85 (1) 70 (2) 20 (1)		°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**
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 °C unless otherwise noted)

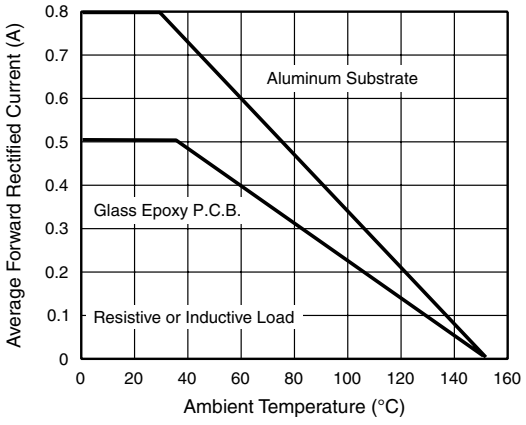


Figure 1. Maximum Forward Current Derating Curve

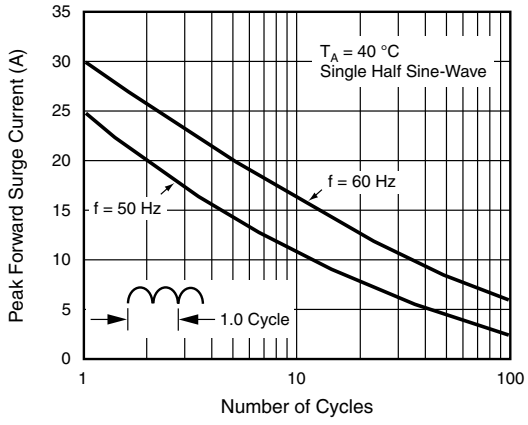


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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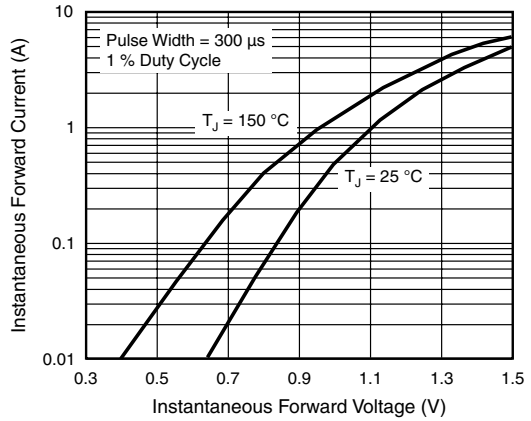


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

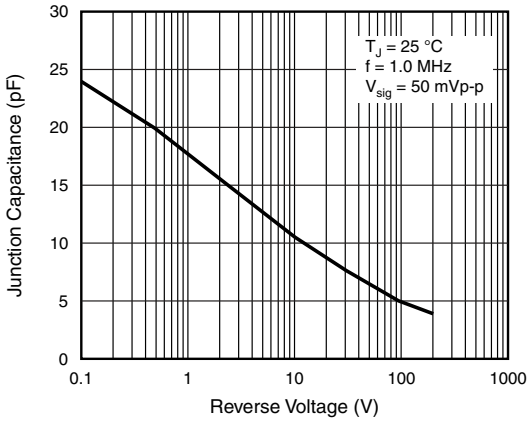


Figure 5. Typical Junction Capacitance Per Diode

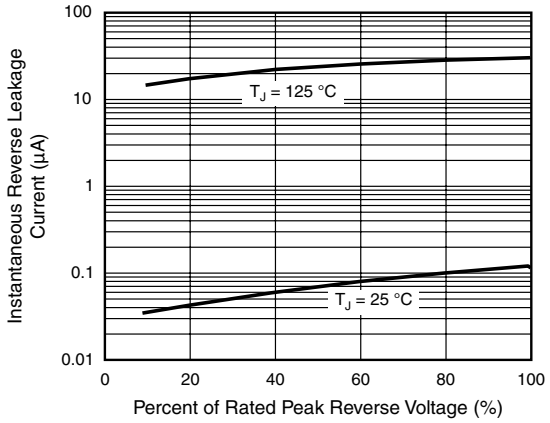
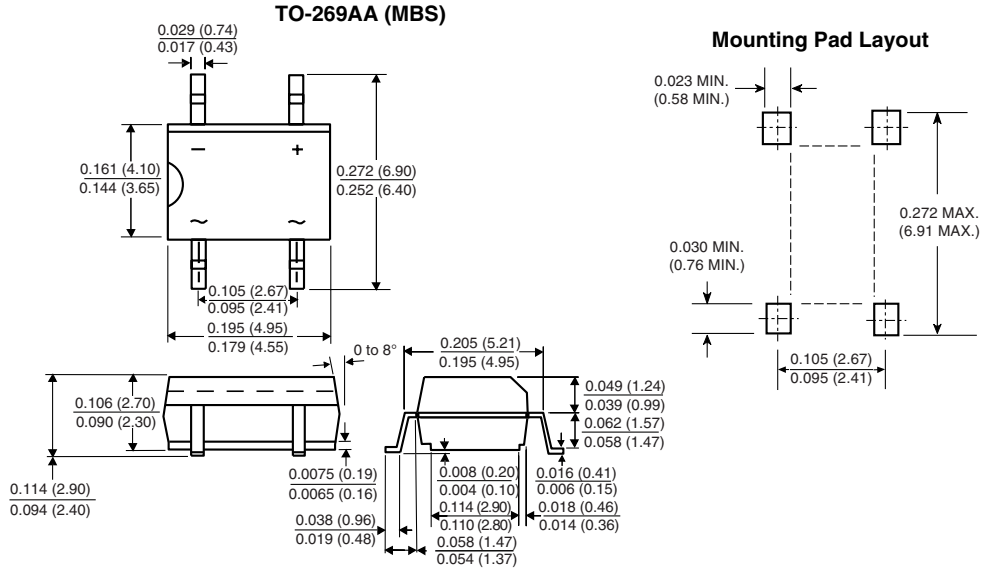


Figure 4. Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



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