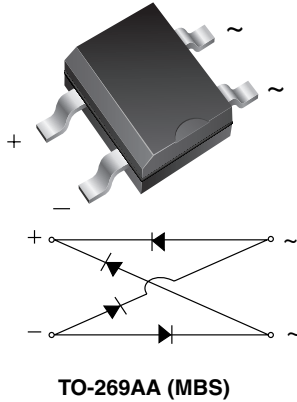


Miniature Glass Passivated Fast Recovery Surface Mount Bridge Rectifier



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 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.

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

| 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 |

| MAXIMUM RATINGS ($T_A = 25\text{ °C}$ 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 $T_A = 30\text{ °C}$ | $I_{F(AV)}$ | 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 ² 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 | 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 | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$ | I_R | 5.0 100 | | μA |
| Maximum reverse recovery time per diode | $I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $I_{rr} = 0.25\text{ A}$ | t_{rr} | 150 | | ns |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | C_J | 13 | | pF |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | |
|---|-----------------|-------------------|-------|--------------------|
| PARAMETER | SYMBOL | RMB2S | RMB4S | UNIT |
| Typical thermal resistance | $R_{\theta JA}$ | 85 ⁽¹⁾ | | $^\circ\text{C/W}$ |
| | $R_{\theta JA}$ | 70 ⁽²⁾ | | |
| | $R_{\theta JL}$ | 20 ⁽¹⁾ | | |

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

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

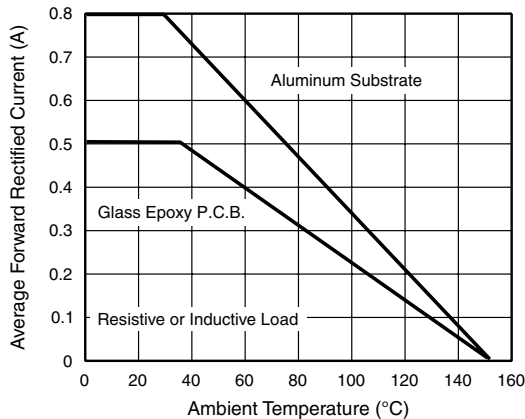


Figure 1. Maximum Forward Current Derating Curve

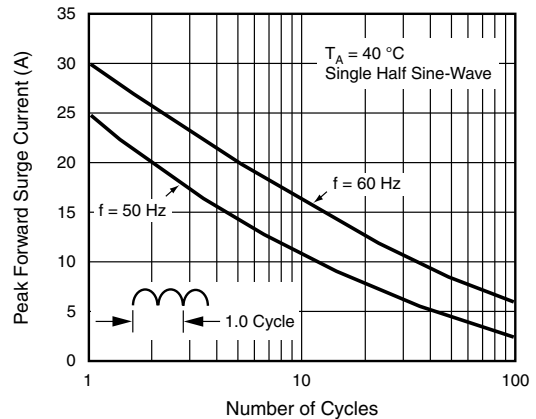


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

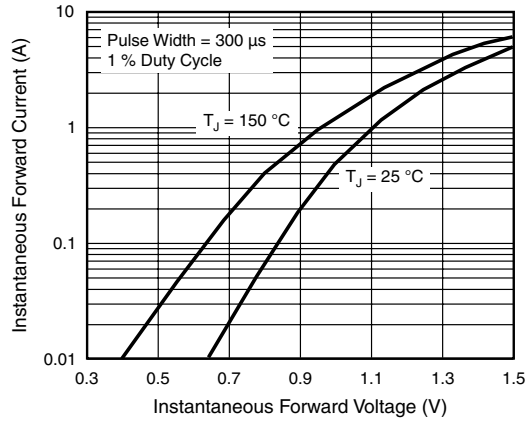


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

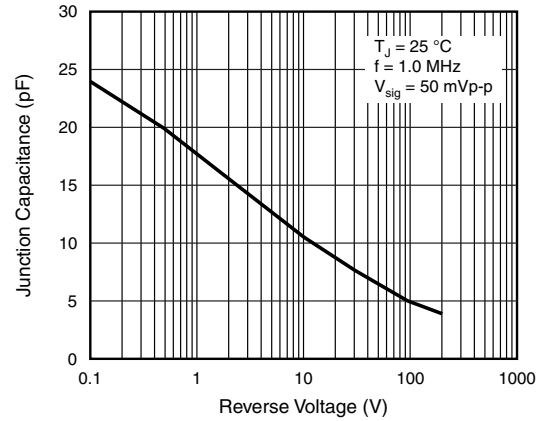


Figure 5. Typical Junction Capacitance Per Diode

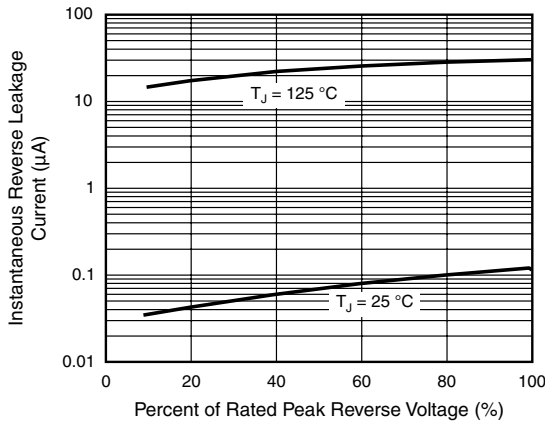
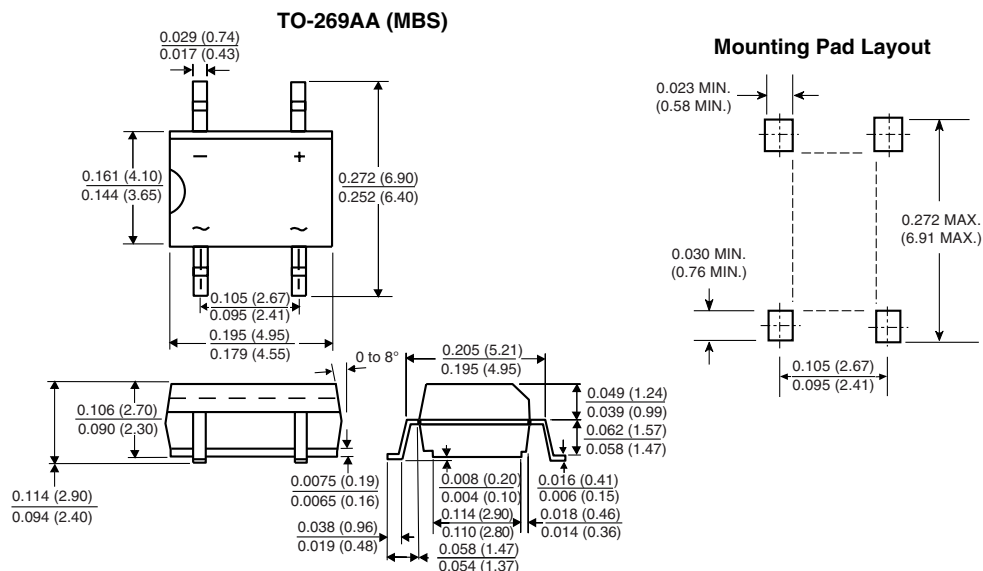


Figure 4. Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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