

0.8A, 600V - 1000V Standard Bridge Rectifier

FEATURES

- Ideal for automated placement
- Reliable low cost construction utilizing molded plastic technique
- High surge current capability
- UL Recognized File # E-326854
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application

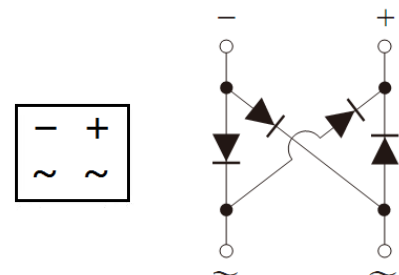
MECHANICAL DATA

- Case: TO-269AA (MBS)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: As marked
- Weight: 0.120g (approximately)

| KEY PARAMETERS | | |
|----------------|----------------|------|
| PARAMETER | VALUE | UNIT |
| I_F | 0.8 | A |
| V_{RRM} | 600 - 1000 | V |
| I_{FSM} | 35 | A |
| $T_{J\ MAX}$ | 150 | °C |
| Package | TO-269AA (MBS) | |
| Configuration | Quad | |



MBS



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted) | | | | | |
|--|-----------------------|--------------|--------|---------|------------------|
| PARAMETER | SYMBOL | MBS6-K | MBS8-K | MBS10-K | UNIT |
| Marking code on the device | | MBS6 | MBS8 | MBS10 | |
| Repetitive peak reverse voltage | V_{RRM} | 600 | 800 | 1000 | V |
| Reverse voltage, total rms value | $V_{R(RMS)}$ | 420 | 560 | 700 | V |
| Forward current | On glass-epoxy | I_F 0.5 | | | A |
| | On aluminum substrate | 0.8 | | | A |
| Surge peak forward current, 8.3ms single half sine-wave superimposed on rated load | I_{FSM} | 35 | | | A |
| Rating for fusing ($t < 8.3\text{ms}$) | I^2t | 5.08 | | | A ² s |
| Junction temperature | T_J | - 55 to +150 | | | °C |
| Storage temperature | T_{STG} | - 55 to +150 | | | °C |

THERMAL PERFORMANCE

| PARAMETER | SYMBOL | TYP | UNIT |
|--|-----------------|-----|------|
| Junction-to-lead thermal resistance | $R_{\theta JL}$ | 20 | °C/W |
| Junction-to-ambient thermal resistance | $R_{\theta JA}$ | 85 | °C/W |

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

| PARAMETER | CONDITIONS | SYMBOL | TYP | MAX | UNIT |
|--|---|--------|-----|-----|---------------|
| Forward voltage per diode ⁽¹⁾ | $I_F = 0.4\text{A}, T_J = 25^\circ\text{C}$ | V_F | - | 1 | V |
| Reverse current @ rated V_R per diode ⁽²⁾ | $T_J = 25^\circ\text{C}$ | I_R | - | 5 | μA |
| | $T_J = 125^\circ\text{C}$ | | - | 100 | μA |

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

| ORDERING CODE ⁽¹⁾ | PACKAGE | PACKING |
|------------------------------|----------------|---------------------|
| MBSx-K | TO-269AA (MBS) | 3,000 / Tape & Reel |

Notes:

1. "x" defines voltage from 600V(MBS6-K) to 1000V(MBS10-K)

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

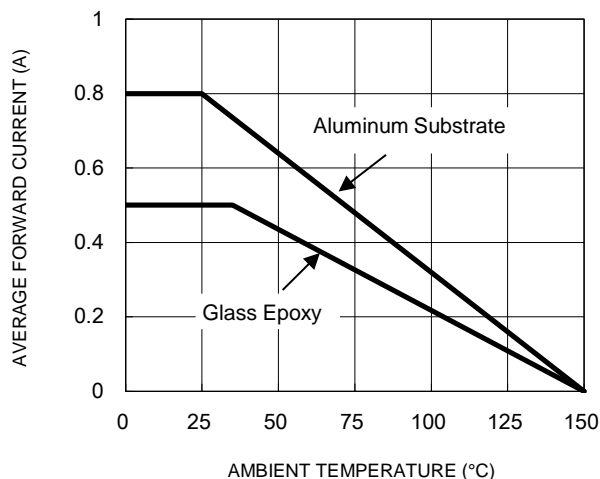


Fig.2 Typical Junction Capacitance

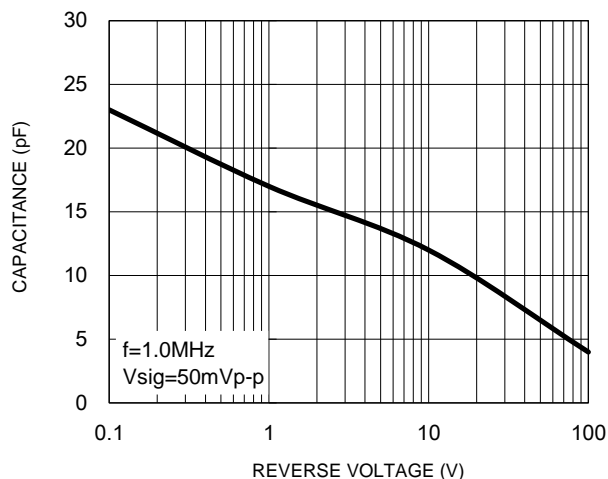


Fig.3 Typical Reverse Characteristics

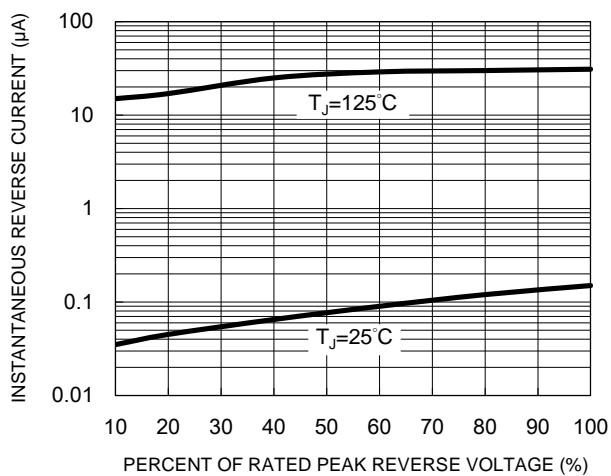


Fig.4 Typical Forward Characteristics

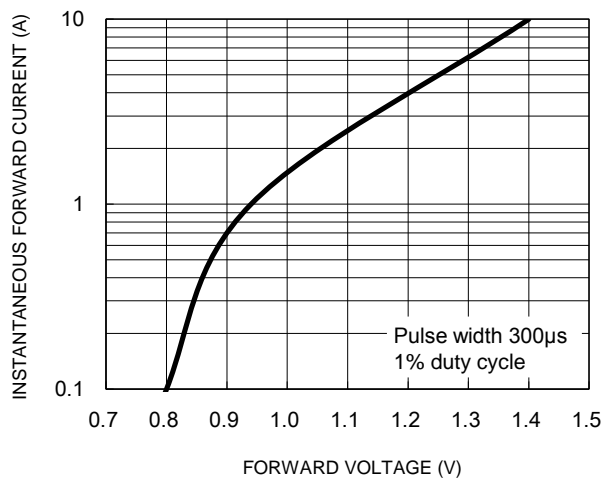
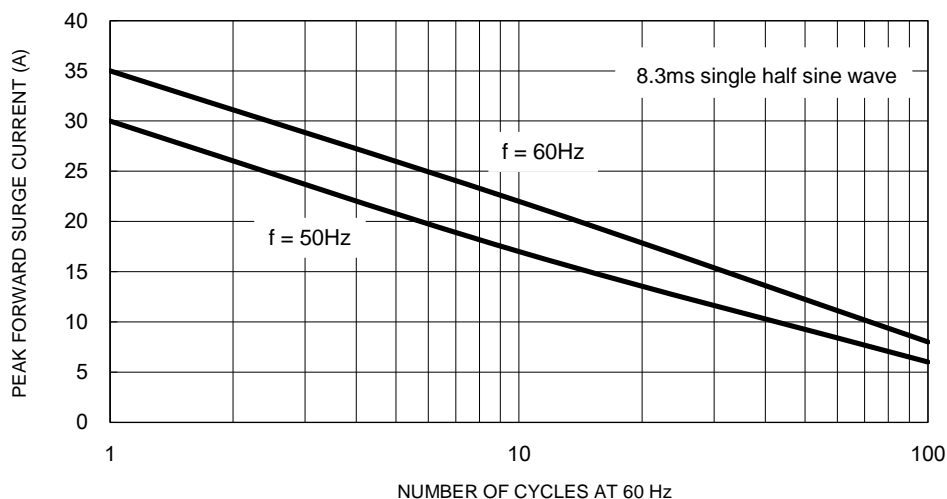
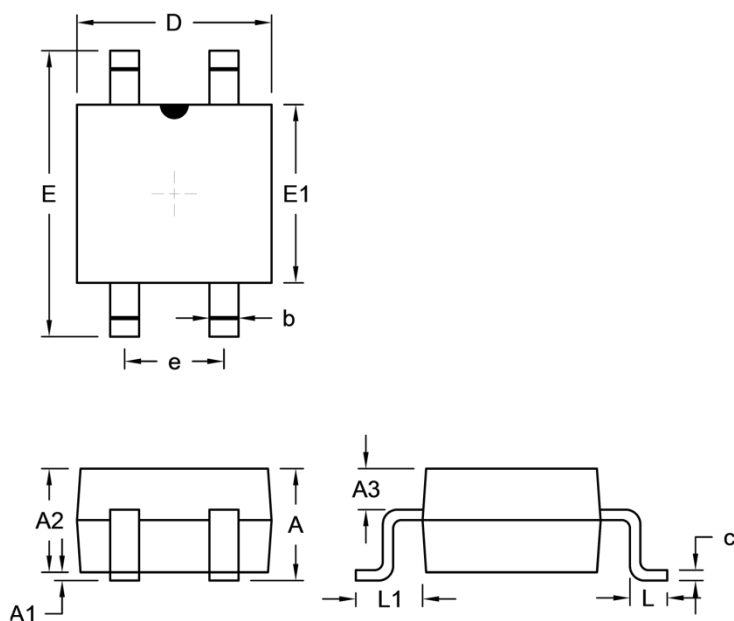


Fig.5 Maximum Non-Repetitive Forward Surge Current



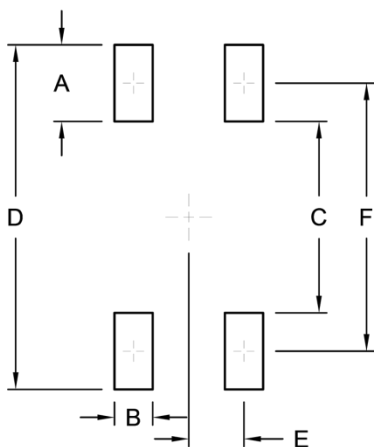
PACKAGE OUTLINE DIMENSIONS

TO-269AA (MBS)



| DIM. | Unit (mm) | | Unit (inch) | |
|------|-----------|------|-------------|-------|
| | Min. | Max. | Min. | Max. |
| A | - | 2.90 | - | 0.114 |
| A1 | - | 0.20 | - | 0.008 |
| A2 | 2.30 | 2.70 | 0.091 | 0.106 |
| A3 | 0.95 | 1.53 | 0.037 | 0.060 |
| b | 0.56 | 0.84 | 0.022 | 0.033 |
| c | 0.15 | 0.35 | 0.006 | 0.014 |
| D | 4.50 | 4.90 | 0.177 | 0.193 |
| E | - | 6.90 | - | 0.272 |
| E1 | 3.60 | 5.00 | 0.142 | 0.197 |
| e | 2.20 | 2.60 | 0.087 | 0.102 |
| L | 0.70 | 1.10 | 0.028 | 0.043 |
| L1 | 1.10 | 2.12 | 0.043 | 0.083 |

SUGGESTED PAD LAYOUT



| Symbol | Unit (mm) | Unit (inch) |
|--------|-----------|-------------|
| A | 1.80 | 0.071 |
| B | 0.90 | 0.035 |
| C | 4.50 | 0.177 |
| D | 8.10 | 0.319 |
| E | 1.30 | 0.051 |
| F | 6.30 | 0.248 |

MARKING DIAGRAM



P/N = Marking Code
YW = Date Code
F = Factory Code

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