

MBRB8H100T4G

SWITCHMODE™ Schottky Power Rectifier Surface Mount Power Package

This series of Power Rectifiers employs the Schottky Barrier principle in a large metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for use in low voltage, high frequency switching power supplies, free wheeling diodes, and polarity protection diodes.

Features

- Guardring for Stress Protection
- Low Forward Voltage
- 175°C Operating Junction Temperature
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Short Heat Sink Tab Manufactured - Not Sheared!
- This is a Pb-Free Device

Mechanical Characteristics:

- Case: Epoxy, Molded, Epoxy Meets UL 94 V-0
- Weight: 1.7 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (>400 V)
Human Body Model, 3B (>8000 V)

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 100 | V |
| Average Rectified Forward Current (Rated V_R) $T_C = 146^\circ\text{C}$ | $I_{F(AV)}$ | 8 | A |
| Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz) $T_C = 146^\circ\text{C}$ | I_{FRM} | 16 | A |
| Max Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz, 25°C) | I_{FSM} | 250 | A |
| Operating Junction and Storage Temperature Range (Note 1) | T_J, T_{stg} | -65 to +175 | °C |

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

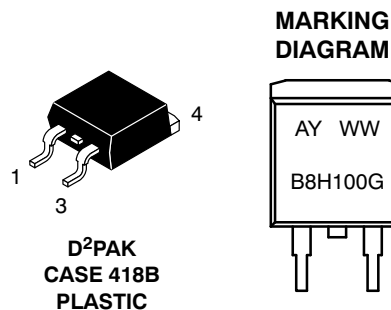
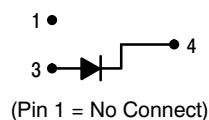
1. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.



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SCHOTTKY BARRIER RECTIFIER 8 AMPERES, 100 VOLTS



A = Assembly Location
Y = Year
WW = Work Week
B8H100 = Device Code
G = Pb-Free Package

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

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THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|--|------------------------------------|-----------|---------------|
| Thermal Resistance, - Junction-to-Case (Note 2) - Junction-to-Ambient (Note 2) | $R_{\theta JC}$ $R_{\theta JA}$ | 1.1 44 | $^{\circ}C/W$ |

2. When mounted using minimum recommended pad size on FR-4 board.

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|---|--------|--------------|---------------|
| Maximum Instantaneous Forward Voltage (Note 3) ($I_F = 8\text{ A}$, $T_J = 25^{\circ}C$) ($I_F = 8\text{ A}$, $T_J = 125^{\circ}C$) | V_F | 0.71 0.55 | V |
| Maximum Instantaneous Reverse Current (Note 3) (Rated dc Voltage, $T_J = 25^{\circ}C$) (Rated dc Voltage, $T_J = 125^{\circ}C$) | I_R | 4.5 5.3 | μA mA |

3. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$

ORDERING INFORMATION

| Device | Package | Shipping [†] |
|--------------|---------------------------------|-------------------------|
| MBRB8H100T4G | D ² PAK (Pb-Free) | 800 Units / Tape & Reel |

[†]For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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TYPICAL CHARACTERISTICS

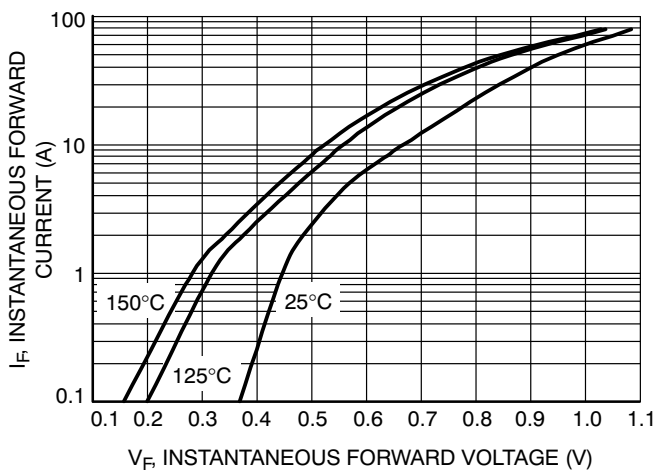


Figure 1. Typical Forward Voltage

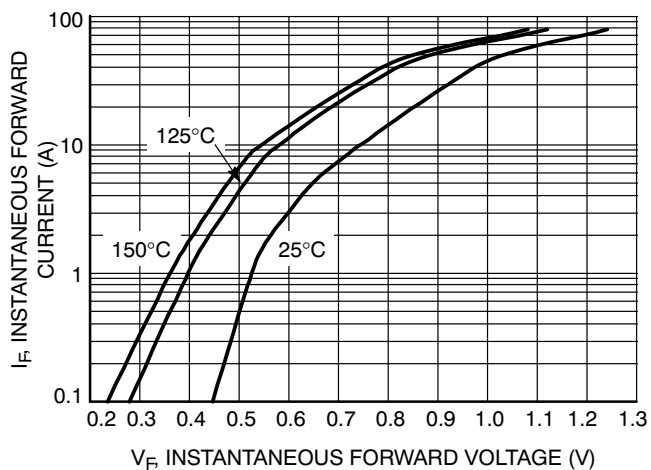


Figure 2. Maximum Forward Voltage

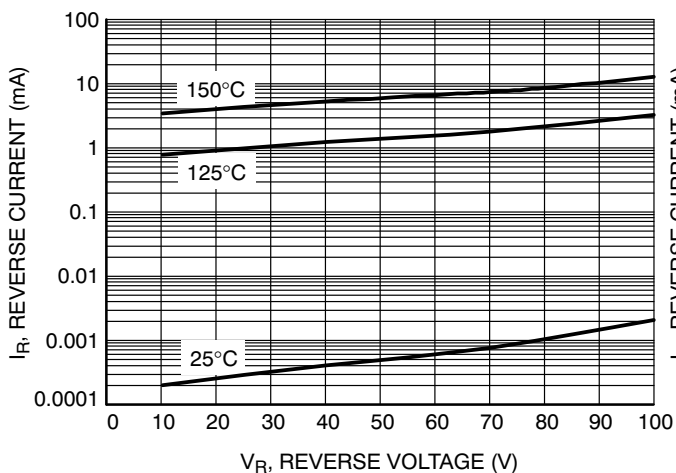


Figure 3. Typical Reverse Current

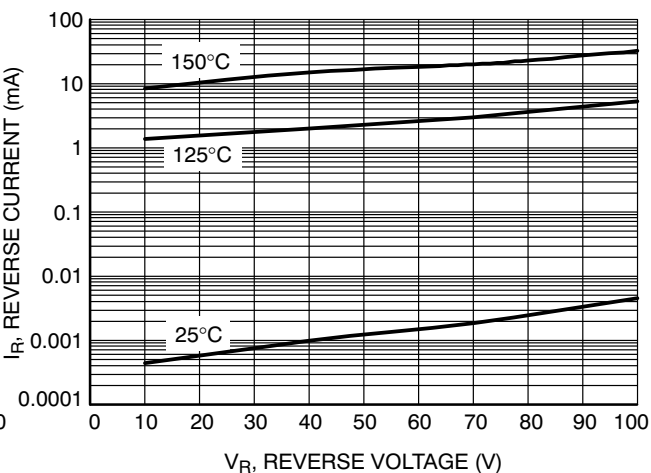


Figure 4. Maximum Reverse Current

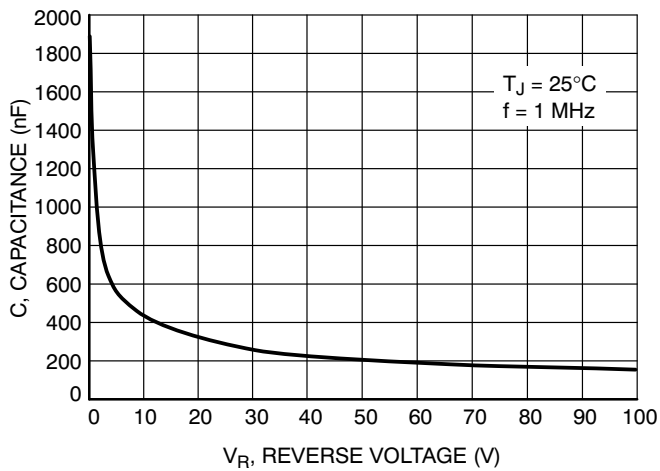


Figure 5. Typical Capacitance

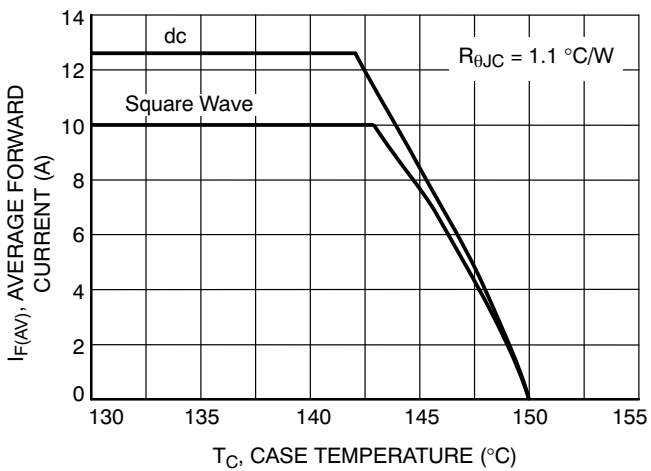


Figure 6. Current Derating, Case

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TYPICAL CHARACTERISTICS

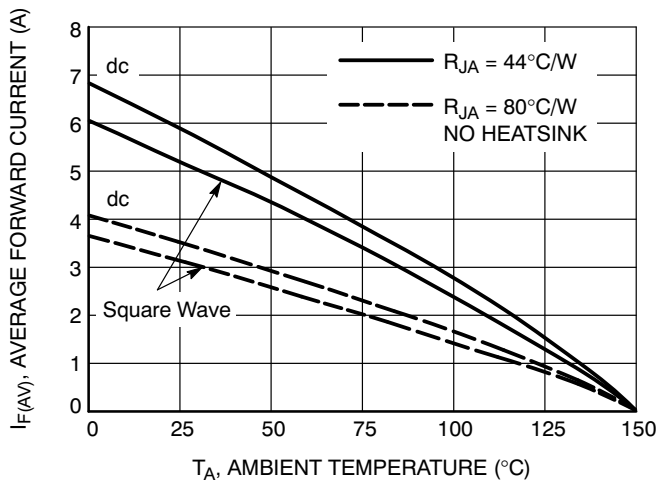


Figure 7. Current Derating, Ambient

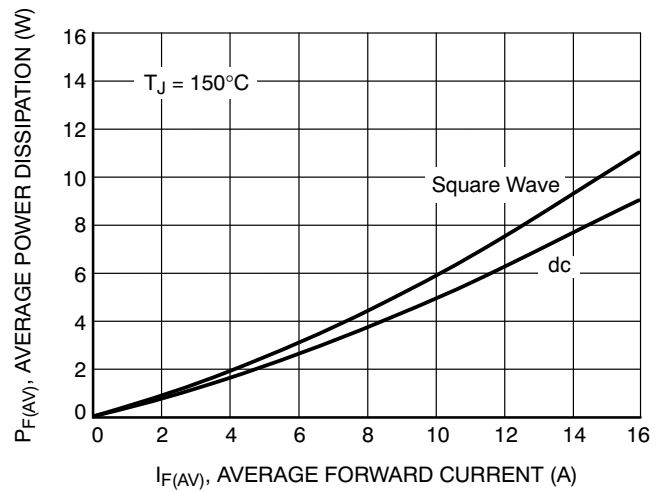


Figure 8. Typical Forward Power Dissipation

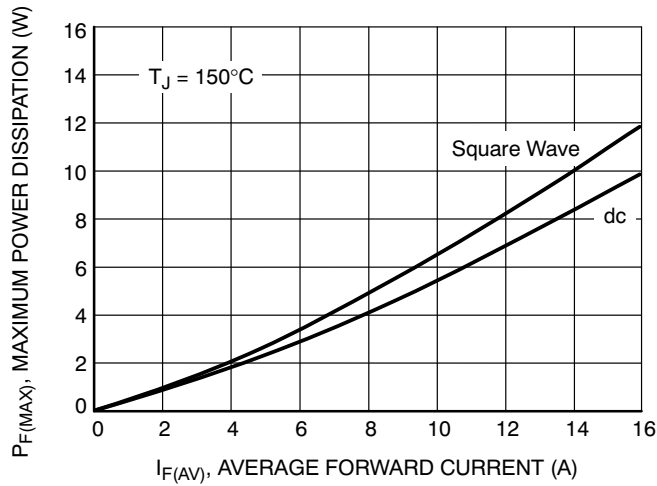
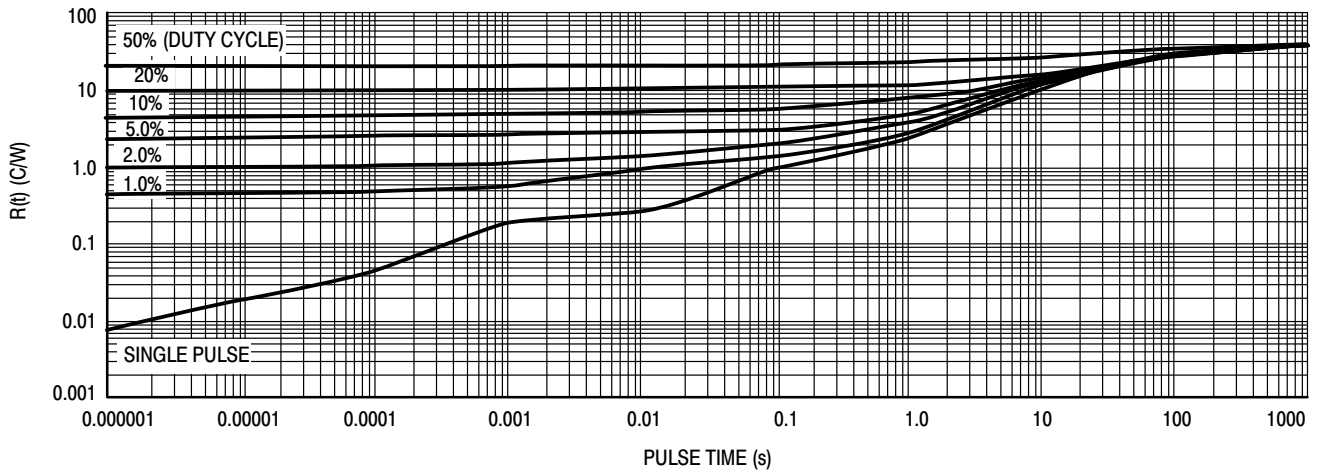


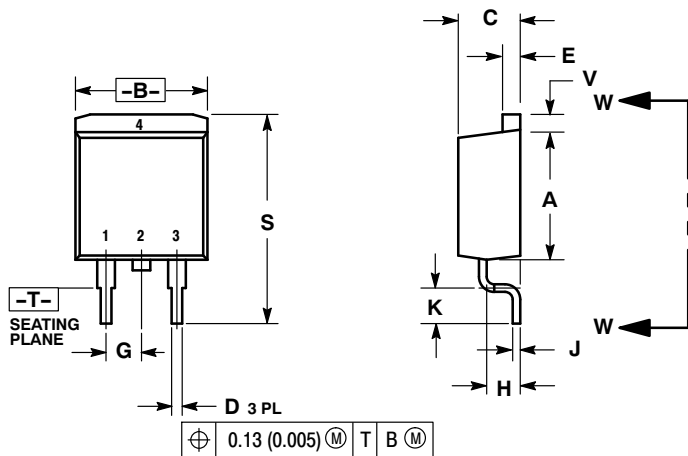
Figure 9. Maximum Forward Power Dissipation



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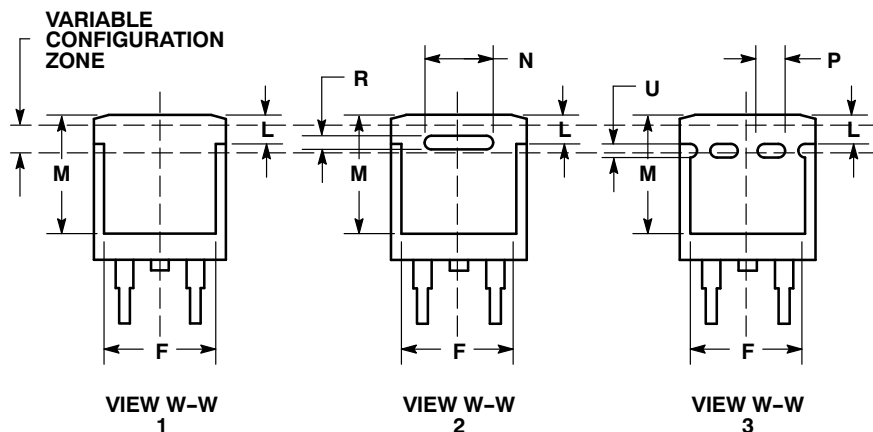
PACKAGE DIMENSIONS

D²PAK 3
CASE 418B-04
ISSUE J

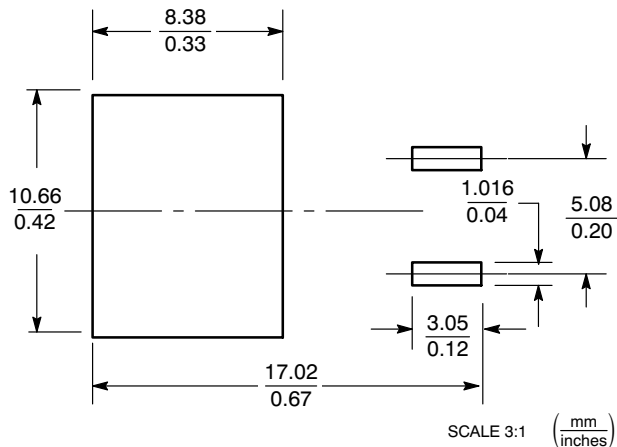


- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.
 3. 418B-01 THRU 418B-03 OBSOLETE, NEW STANDARD 418B-04.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------|-------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 0.340 | 0.380 | 8.64 | 9.65 |
| B | 0.380 | 0.405 | 9.65 | 10.29 |
| C | 0.160 | 0.190 | 4.06 | 4.83 |
| D | 0.020 | 0.035 | 0.51 | 0.89 |
| E | 0.045 | 0.055 | 1.14 | 1.40 |
| F | 0.310 | 0.350 | 7.87 | 8.89 |
| G | 0.100 | BSC | 2.54 | BSC |
| H | 0.080 | 0.110 | 2.03 | 2.79 |
| J | 0.018 | 0.025 | 0.46 | 0.64 |
| K | 0.090 | 0.110 | 2.29 | 2.79 |
| L | 0.052 | 0.072 | 1.32 | 1.83 |
| M | 0.280 | 0.320 | 7.11 | 8.13 |
| N | 0.197 | REF | 5.00 | REF |
| P | 0.079 | REF | 2.00 | REF |
| R | 0.039 | REF | 0.99 | REF |
| S | 0.575 | 0.625 | 14.60 | 15.88 |
| V | 0.045 | 0.055 | 1.14 | 1.40 |




SOLDERING FOOTPRINT*



*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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