

MBRB2060CT

Preferred Device

SWITCHMODE™ Power Rectifier

D²PAK Surface Mount Power Package

Employs the use of the Schottky Barrier principle with a platinum barrier metal. These state-of-the-art devices have the following features:

- Package Designed for Power Surface Mount Applications
- Center-Tap Configuration
- Guardring for Stress Protection
- Low Forward Voltage
- 150°C Operating Junction Temperature
- Epoxy Meets UL 94 V-0 @ 0.125 in
- Short Heat Sink Tab Manufactured – Not Sheared!
- Similar in Size to Industry Standard TO-220 Package

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
- Shipped 50 Units per Plastic Tube
- Available in 24 mm Tape and Reel, 800 units per 13" reel by adding a "T4" suffix to the part number
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (>400 V)
Human Body Model, 3B (>8000 V)

MAXIMUM RATINGS (Per Leg)

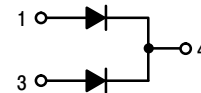
| Rating | Symbol | Value | Unit |
|---|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 60 | V |
| Average Rectified Forward Current (Rated V_R , $T_C = 110^\circ\text{C}$) Total Device | $I_{F(AV)}$ | 10 20 | A |
| Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$) | I_{FRM} | 20 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | I_{FSM} | 150 | A |
| Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz) | I_{RRM} | 0.5 | A |
| Storage Temperature Range | T_{stg} | -65 to +175 | °C |
| Operating Junction Temperature | T_J | -65 to +150 | °C |
| Voltage Rate of Change (Rated V_R) | dv/dt | 10,000 | V/ μs |



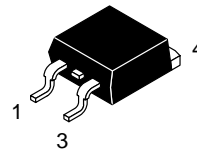
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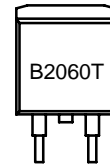
**SCHOTTKY BARRIER
RECTIFIER
20 AMPERES
60 VOLTS**



MARKING DIAGRAM



D²PAK
CASE 418B
STYLE 3



B2060T = Specific Device Code

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------------|--------------------|-----------------|
| MBRB2060CT | D ² PAK | 50/Rail |
| MBRB2060CTT4 | D ² PAK | 800/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.

Preferred devices are recommended choices for future use and best overall value.

MBRB2060CT

THERMAL CHARACTERISTICS (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---------------------------------------|-----------------|-------|---------------|
| Thermal Resistance – Junction-to-Case | $R_{\theta JC}$ | 2.0 | $^{\circ}C/W$ |
| – Junction-to-Ambient (Note 1) | $R_{\theta JA}$ | 50 | |

ELECTRICAL CHARACTERISTICS (Per Leg)

| Characteristic | Symbol | Value | Unit |
|---|--------|--------------|-------|
| Maximum Instantaneous Forward Voltage (Note 2) ($i_F = 20$ Amps, $T_J = 125^{\circ}C$) ($i_F = 20$ Amps, $T_J = 25^{\circ}C$) | V_F | 0.85 0.95 | Volts |
| Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_J = 125^{\circ}C$) (Rated dc Voltage, $T_J = 25^{\circ}C$) | i_R | 35 0.15 | mA |

- When mounted using minimum recommended pad size on FR-4 board.
- Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

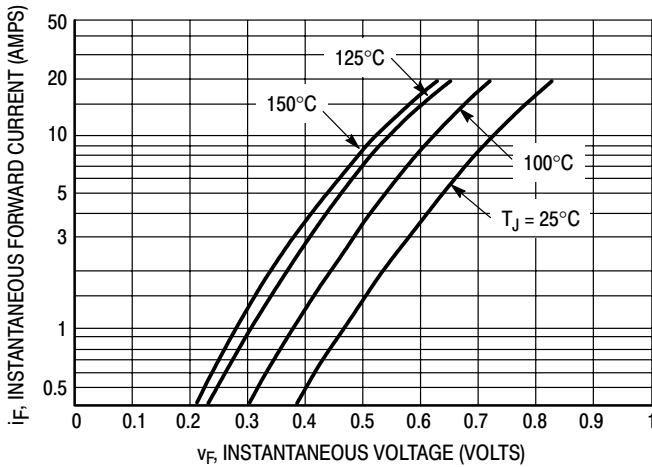


Figure 1. Typical Forward Voltage Per Diode

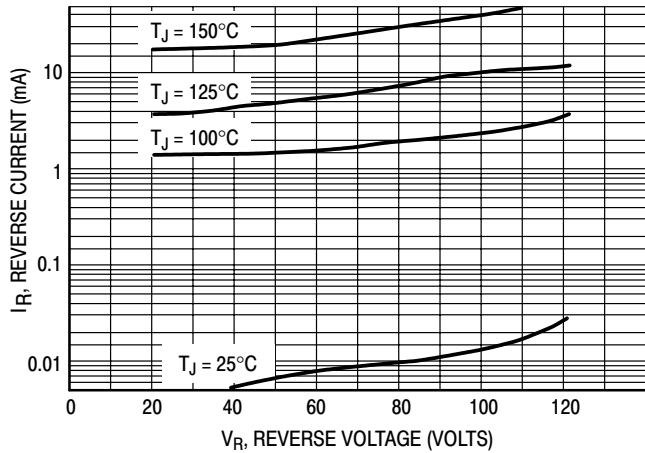


Figure 2. Typical Reverse Current Per Diode

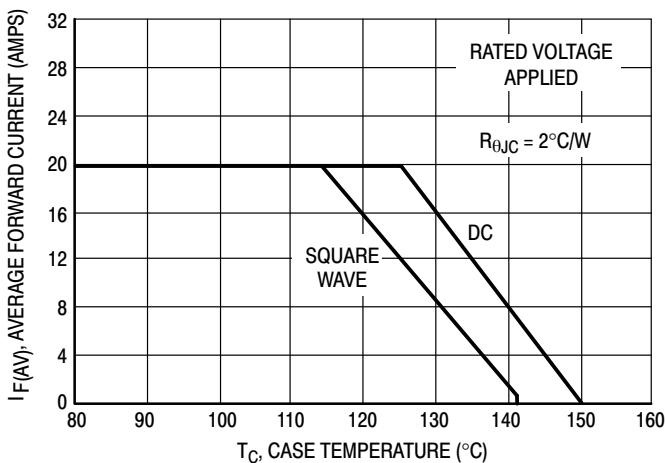


Figure 3. Typical Current Derating, Case, Per Leg

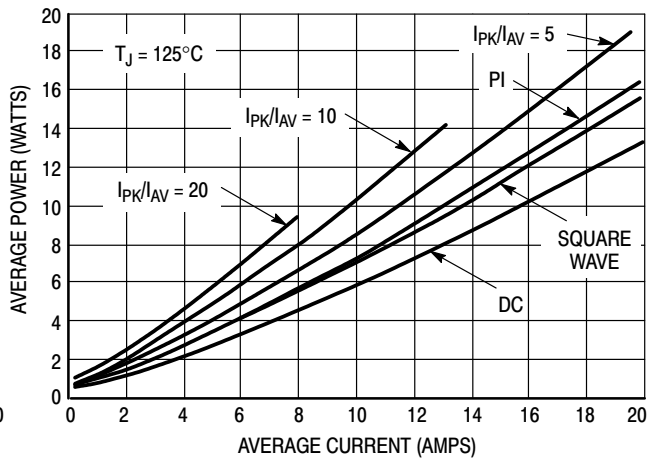


Figure 4. Average Power Dissipation and Average Current

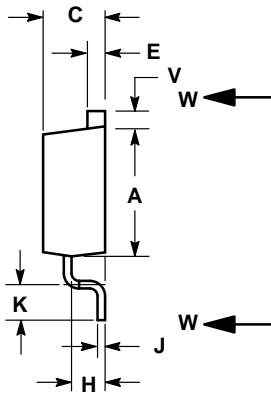
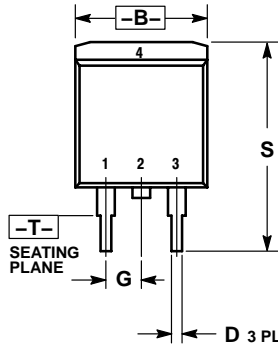
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PACKAGE DIMENSIONS

D²PAK-3
CASE 418B-04
ISSUE H

NOTES:

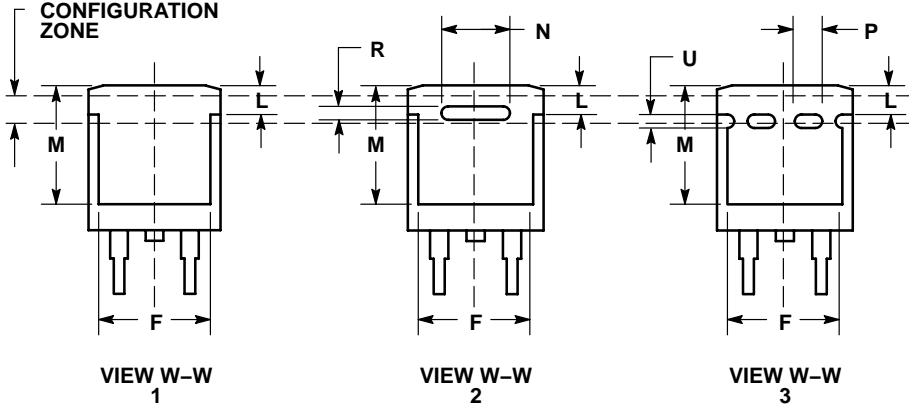
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 418B-01 THRU 418B-03 OBSOLETE, NEW STANDARD 418B-04.



D 3 PL
⊕ 0.13 (0.005) M T B M

| 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 |

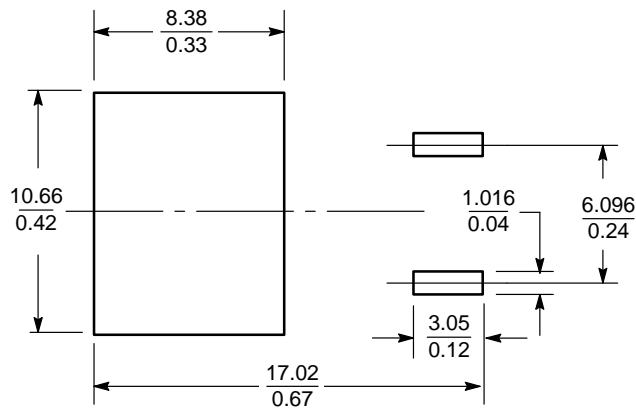
VARIABLE CONFIGURATION ZONE



STYLE 3:

- PIN 1. ANODE
- CATHODE
- ANODE
- CATHODE

SOLDERING FOOTPRINT



SCALE 3:1 (mm/inches)

D²PAK

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