

Advance Information

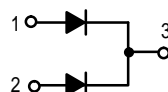
POWERTAP II™

SWITCHMODE™ Power Rectifier

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

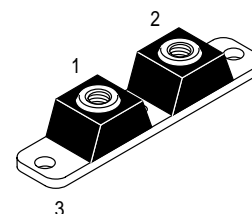
Features:

- Dual Diode Construction — May be Paralleled for Higher Current Output
- Guardring for Stress Protection
- Low Forward Voltage Drop
- 150°C Operating Junction Temperature
- Recyclable Epoxy
- Guaranteed Reverse Avalanche Energy Capability
- Improved Mechanical Ratings



MBRP40045CTL

**SCHOTTKY BARRIER
RECTIFIER
400 AMPERES
45 VOLTS**



**CASE 357C-03
POWERTAP II**

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|---------------------------------|-------------|----------------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 45 | V |
| Average Rectified Forward Current (At Rated V_R , $T_C = 100^\circ\text{C}$) | $I_{F(AV)}$ | 200 400 | A Per Leg Per Device |
| Peak Repetitive Forward Current (At Rated V_R , Square Wave, 20 kHz, $T_C = 100^\circ\text{C}$) | I_{FRM} | 400 | A |
| Non-Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz) | I_{FSM} | 2500 | A |
| Peak Repetitive Reverse Current (2.0 μs , 1.0 kHz) | I_{RRM} | 2.0 | A |
| Storage and Operating Case Temperature | T_{stg}, T_C | -55 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature | T_J | -55 to +150 | $^\circ\text{C}$ |
| Voltage Rate of Change (Rated V_R) | dv/dt | 1000 | V/ μs |

THERMAL CHARACTERISTICS

| | | | | |
|---------------------------------------|---------|-----------------|------|--------------------|
| Thermal Resistance — Junction-to-Case | Per Leg | $R_{\theta JC}$ | 0.45 | $^\circ\text{C/W}$ |
|---------------------------------------|---------|-----------------|------|--------------------|

ELECTRICAL CHARACTERISTICS

| Rating | Symbol | Value | | Unit |
|---|--------|--|---|------|
| Maximum Instantaneous Forward Voltage (1) ($I_F = 200\text{ A}$) ($I_F = 400\text{ A}$) | V_F | $T_C = 25^\circ\text{C}$ 0.57 0.73 | $T_C = 125^\circ\text{C}$ 0.52 0.68 | V |
| Maximum Instantaneous Reverse Current (1) (Rated DC Voltage) | I_R | $T_C = 25^\circ\text{C}$ 10 | $T_C = 125^\circ\text{C}$ 400 | mA |

This document contains information on a new product. Specifications and information herein are subject to change without notice.

(1) Pulse Test: Pulse Width = 380 μs , Duty Cycle $\leq 2\%$.

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MBRP40045CTL

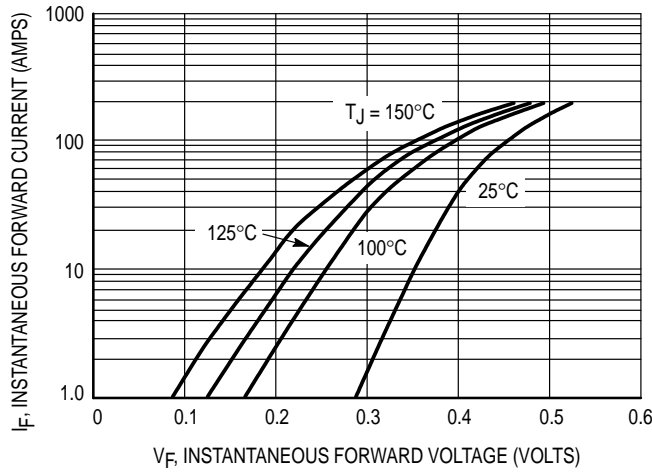


Figure 1. Typical Forward Voltage

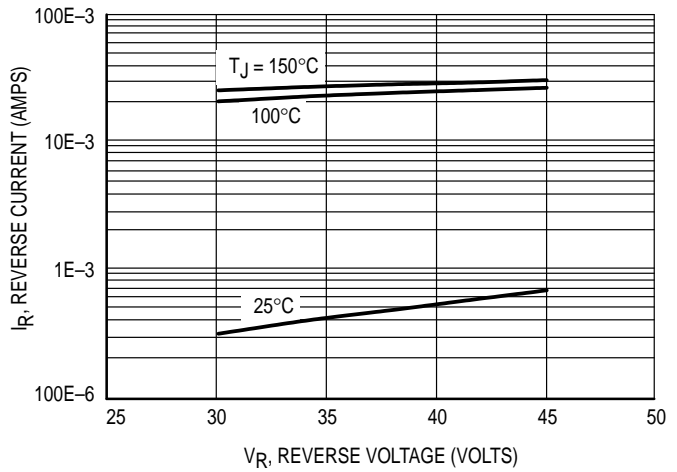


Figure 2. Typical Reverse Current

PACKAGE DIMENSIONS

NOTES:

- DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
- CONTROLLING DIMENSION: INCH.
- TERMINAL PENETRATION: 5.97 (0.235) MAXIMUM.

| DIM | INCHES | | MILLIMETERS | |
|-----|--------------|--------------|-------------|-------|
| | MIN | MAX | MIN | MAX |
| A | 3.450 | 3.635 | 87.63 | 92.33 |
| B | 0.700 | 0.810 | 17.78 | 20.57 |
| C | 0.615 | 0.640 | 15.53 | 16.26 |
| E | 0.120 | 0.130 | 3.05 | 3.30 |
| F | 0.435 | 0.445 | 11.05 | 11.30 |
| G | 1.370 | 1.380 | 34.80 | 35.05 |
| H | 0.007 | 0.030 | 0.18 | 0.76 |
| N | 1/4-20UNC-2B | 1/4-20UNC-2B | | |
| Q | 0.270 | 0.285 | 6.86 | 7.32 |
| R | 31.50 BSC | 80.01 BSC | | |
| U | 0.600 | 0.630 | 15.24 | 16.00 |
| V | 0.330 | 0.375 | 8.39 | 9.52 |
| W | 0.170 | 0.190 | 4.32 | 4.82 |

**CASE 357C-03
ISSUE C**

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