

*Advance Information*

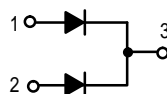
**POWERTAP II™**

**SWITCHMODE™ Power Rectifier**

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

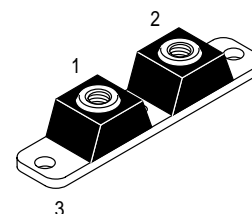
**Features:**

- 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 $\mu\text{s}$ , 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/ $\mu\text{s}$

**THERMAL CHARACTERISTICS**

Thermal Resistance — Junction-to-Case	Per Leg	$R_{\theta JC}$	0.45	$^\circ\text{C/W}$
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**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  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

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# MBRP40045CTL

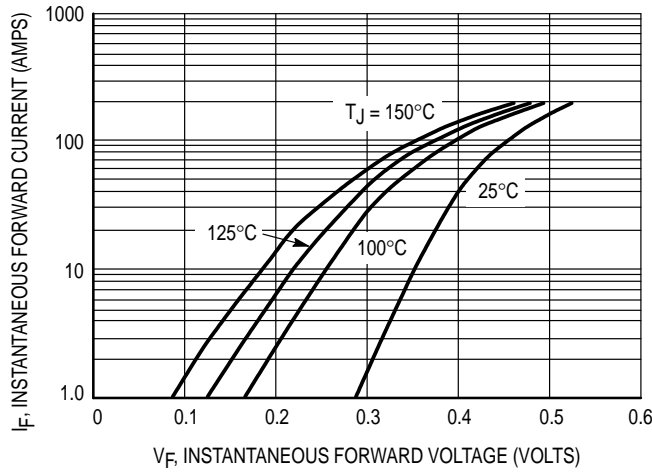


Figure 1. Typical Forward Voltage

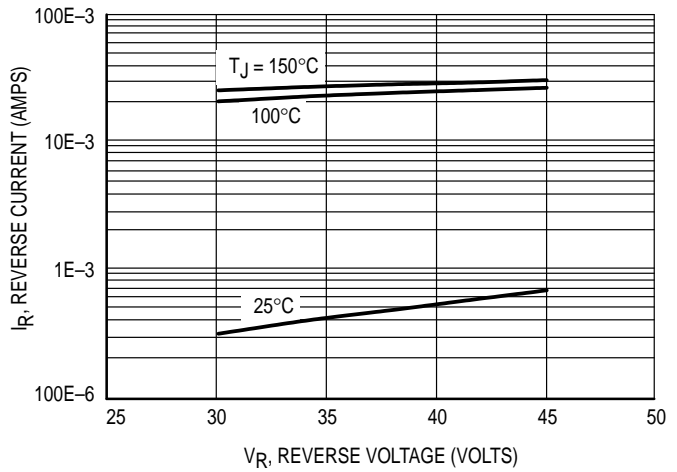


Figure 2. Typical Reverse Current

## 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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**JAPAN:** Nippon Motorola Ltd.: SPD, Strategic Planning Office, 141, 4-32-1 Nishi-Gotanda, Shagawa-ku, Tokyo, Japan. 03-5487-8488

**Customer Focus Center: 1-800-521-6274**

**Mfax™:** RMFAX0@email.sps.mot.com – TOUCHTONE 1-602-244-6609  
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**ASIA/PACIFIC:** Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park, 51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

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