

Advance Information

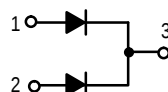
POWERTAP II™

SWITCHMODE™ Power Rectifier

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

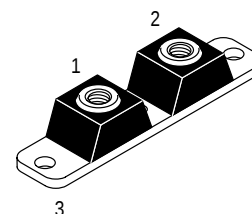
Features:

- 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	$T_C = 25^\circ\text{C}$	$T_C = 125^\circ\text{C}$	V
		0.57 0.73	0.52 0.68	
Maximum Instantaneous Reverse Current (1) (Rated DC Voltage)	I_R	$T_C = 25^\circ\text{C}$	$T_C = 125^\circ\text{C}$	mA
		10	400	

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 $\leq 2\%$.

POWERTAP II and SWITCHMODE are trademarks of Motorola, Inc.



MBRP40045CTL

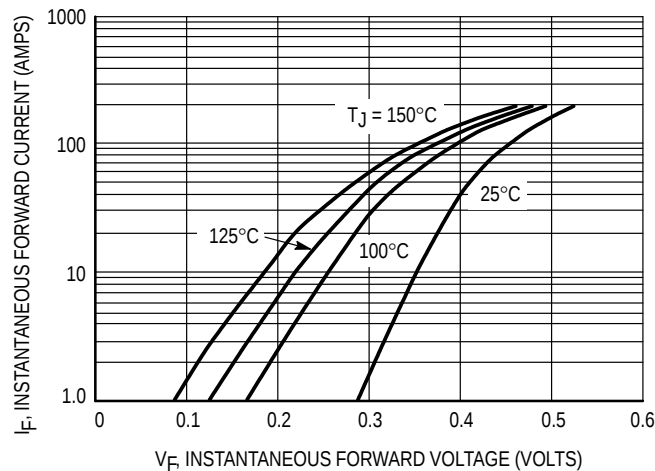


Figure 1. Typical Forward Voltage

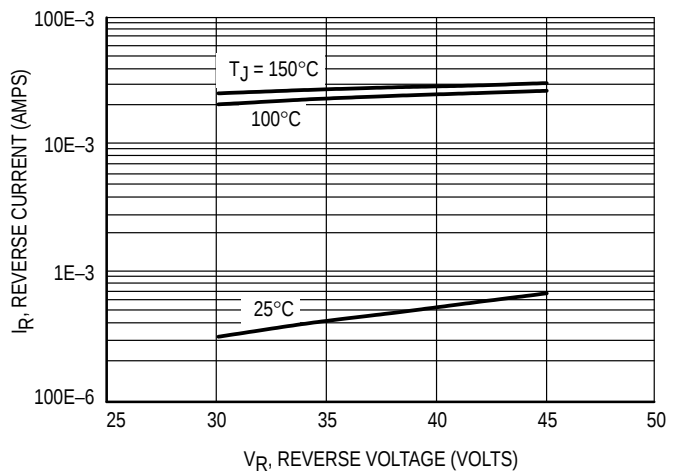
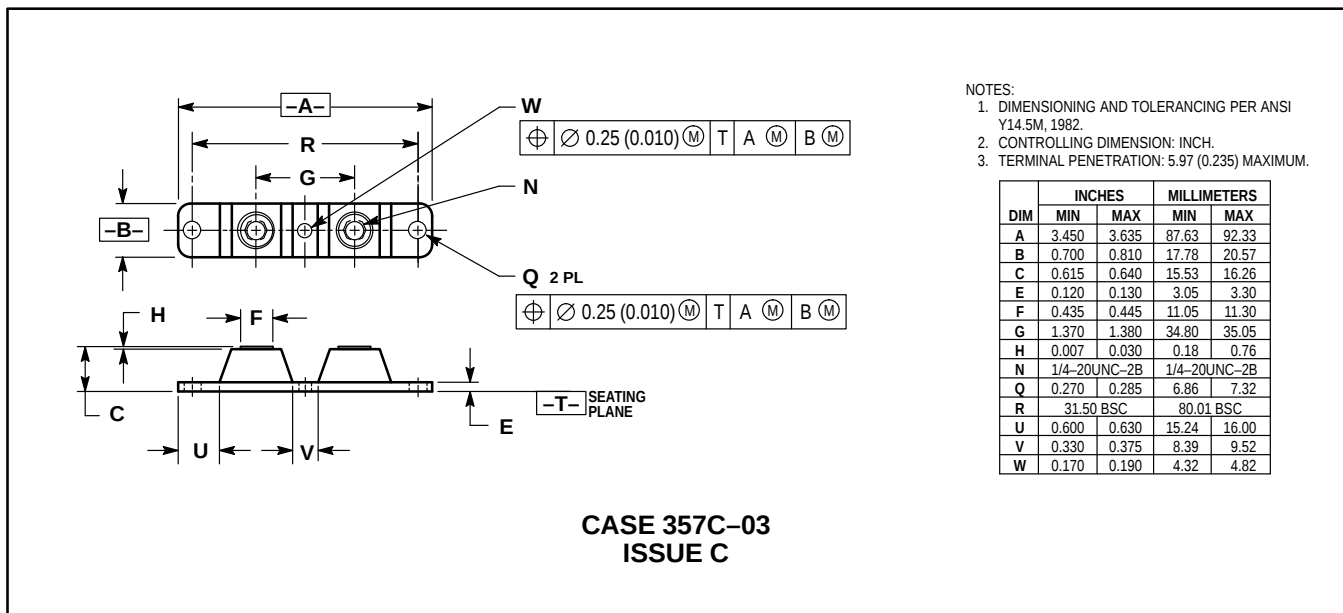


Figure 2. Typical Reverse Current

PACKAGE DIMENSIONS



Motorola reserves the right to make changes without further notice to any products herein. Motorola makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Motorola assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters which may be provided in Motorola data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. Motorola does not convey any license under its patent rights nor the rights of others. Motorola products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Motorola product could create a situation where personal injury or death may occur. Should Buyer purchase or use Motorola products for any such unintended or unauthorized application, Buyer shall indemnify and hold Motorola and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Motorola was negligent regarding the design or manufacture of the part. Motorola and are registered trademarks of Motorola, Inc. Motorola, Inc. is an Equal Opportunity/Affirmative Action Employer.

Mfax is a trademark of Motorola, Inc.

How to reach us:

USA/EUROPE/Locations Not Listed: Motorola Literature Distribution;
P.O. Box 5405, Denver, Colorado 80217. 1-303-675-2140 or 1-800-441-2447

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
Motorola Fax Back System – US & Canada ONLY 1-800-774-1848
– http://sps.motorola.com/mfax/

ASIA/PACIFIC: Motorola Semiconductors H.K. Ltd.; 8B Tai Ping Industrial Park,
51 Ting Kok Road, Tai Po, N.T., Hong Kong. 852-26629298

HOME PAGE: <http://motorola.com/sps/>

