

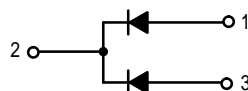
SWITCHMODE™ Schottky Power Rectifier

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

- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop
- Matched Dual Die Construction
- High Junction Temperature Capability
- High dv/dt Capability
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection
- Epoxy Meets UL94, V_O at 1/8"
- Electrically Isolated. No Isolation Hardware Required.
- UL Recognized File #E69369(1)

Mechanical Characteristics

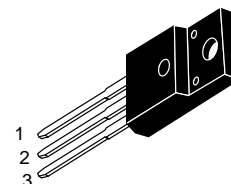
- Case: Epoxy, Molded
- Weight: 1.9 grams (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Shipped 50 units per plastic tube
- Marking: B2545



MBRF2545CT

Motorola Preferred Device

**SCHOTTKY BARRIER
RECTIFIER
25 AMPERES
45 VOLTS**



**CASE 221D-02
ISOLATED TO-220**

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	45	Volts
Average Rectified Forward Current (Rated V_R), $T_C = 125^\circ\text{C}$ Total Device	$I_{F(AV)}$	12.5 25	Amps
Peak Repetitive Forward Current (Rated V_R , Square Wave, 20 kHz), $T_C = 125^\circ\text{C}$	I_{FRM}	25	Amps
Non-repetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	150	Amps
Peak Repetitive Reverse Surge Current (2.0 μs , 1.0 kHz)	I_{RRM}	1.0	Amp
Operating Junction and Storage Temperature	T_J, T_{stg}	- 65 to +150	$^\circ\text{C}$
Voltage Rate of Change (Rated V_R)	dv/dt	10000	V/ μs
RMS Isolation Voltage (t = 1.0 second, R.H. \leq 30%, $T_A = 25^\circ\text{C}$)(2)	Per Figure 3 Per Figure 4(1) Per Figure 5	V_{iso1} V_{iso2} V_{iso3}	4500 3500 1500 Volts

THERMAL CHARACTERISTICS, PER LEG

Maximum Thermal Resistance, Junction to Case	$R_{\theta JC}$	3.5	$^\circ\text{C/W}$
Maximum Lead Temperature for Soldering Purposes: 1/8" from Case for 5 Seconds	T_L	260	$^\circ\text{C}$

(1) UL Recognized mounting method is per Figure 4.

(2) Proper strike and creepage distance must be provided.

SWITCHMODE is a trademark of Motorola, Inc.

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

MBRF2545CT

ELECTRICAL CHARACTERISTICS, PER LEG

Characteristic	Symbol	Max	Unit
Maximum Instantaneous Forward Voltage (3) ($i_F = 12.5$ Amps, $T_C = 25^\circ\text{C}$) ($i_F = 12.5$ Amps, $T_C = 125^\circ\text{C}$)	v_F	0.7 0.62	Volts
Maximum Instantaneous Reverse Current (3) (Rated DC Voltage, $T_C = 25^\circ\text{C}$) (Rated DC Voltage, $T_C = 125^\circ\text{C}$)	i_R	0.2 40	mA

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

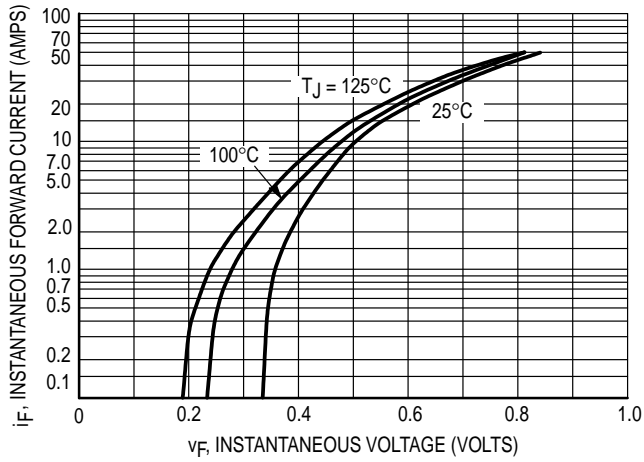


Figure 1. Typical Forward Voltage, Per Leg

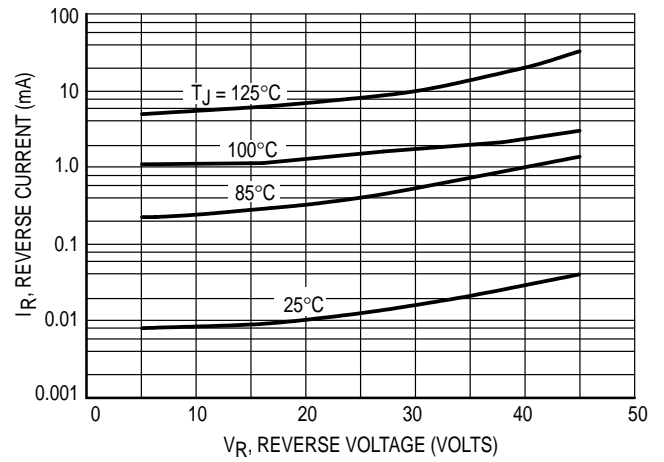
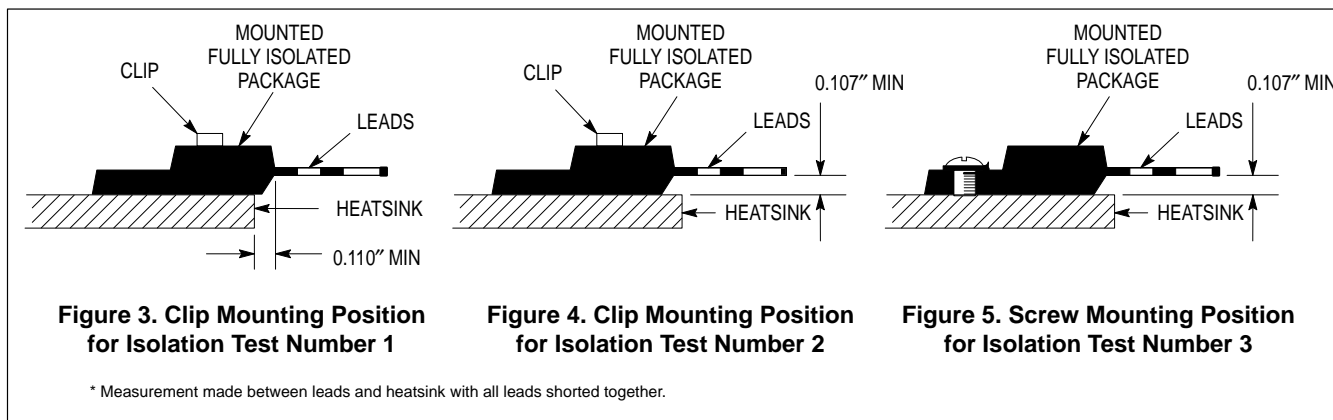
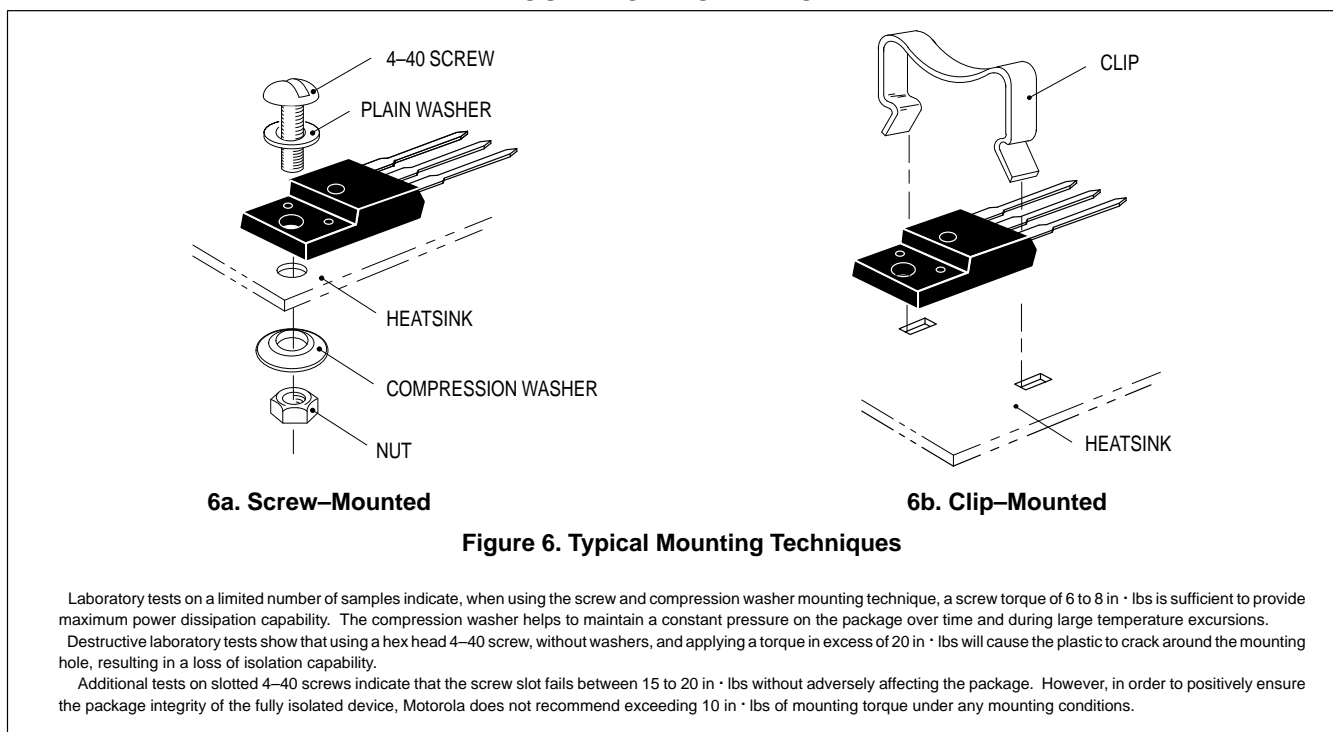


Figure 2. Typical Reverse Current, Per Leg

TEST CONDITIONS FOR ISOLATION TESTS*

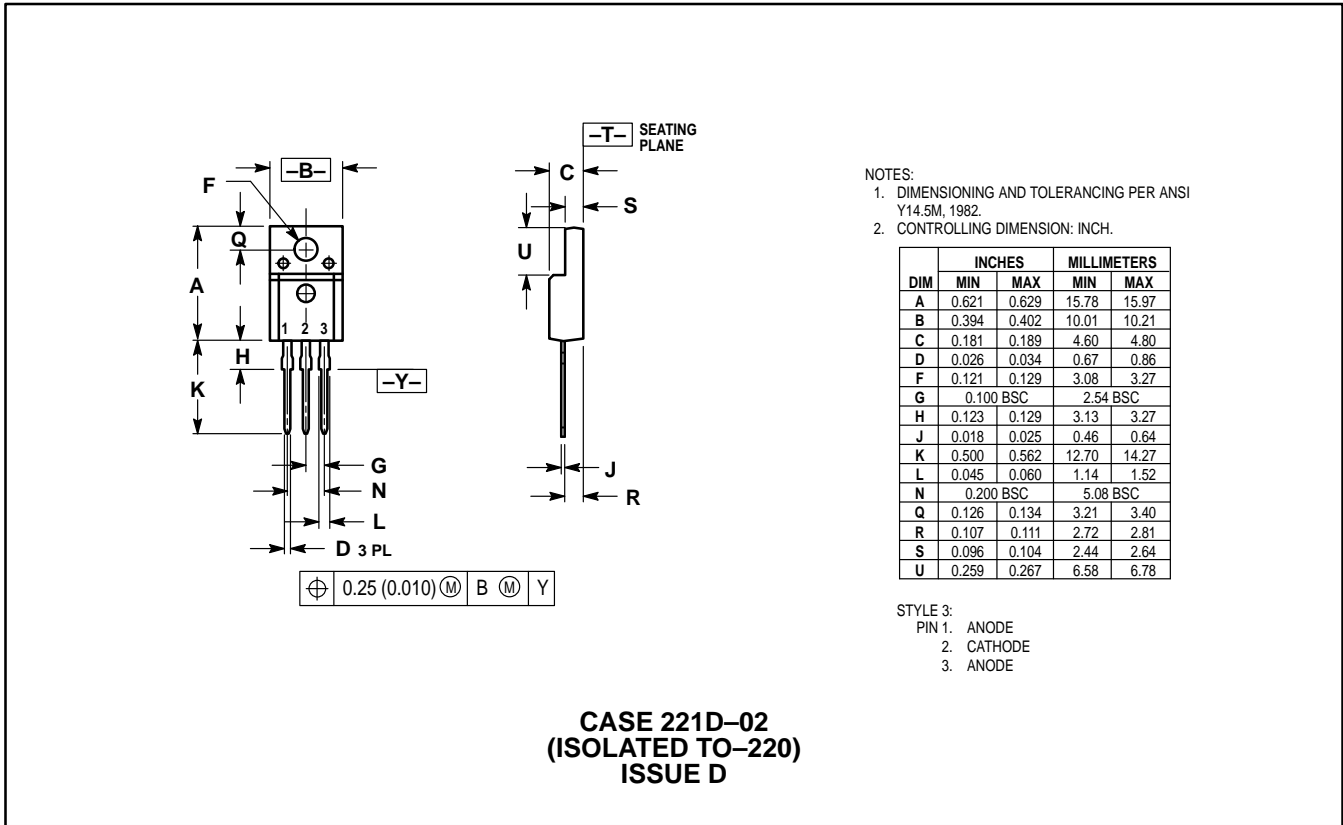


MOUNTING INFORMATION**



**For more information about mounting power semiconductors see Application Note AN1040.

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. 303-675-2140 or 1-800-441-2447

JAPAN: Nippon Motorola Ltd.; Tatsumi-SPD-JLDC, 6F Seibu-Butsuryu-Center, 3-14-2 Tatsumi Koto-Ku, Tokyo 135, Japan. 81-3-3521-8315

Mfax™: RMFAX0@email.sps.mot.com – TOUCHTONE 602-244-6609
INTERNET: http://Design-NET.com

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

