

## Advance Information

# SWITCHMODE™ Power Rectifier

... employing the Schottky Barrier principle in a large metal-to-silicon power diode. State-of-the-art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for use in low voltage, high frequency switching power supplies, low voltage converters, OR'ing diodes, and polarity protection devices.

- Very Low Forward Voltage (0.28 V Maximum @ 19 Amps, 70°C)
- Guardring for Stress Protection
- Highly Stable Oxide Passivated Junction (100°C Operating Junction Temperature)
- Epoxy Meets UL94, VO at 1/8"

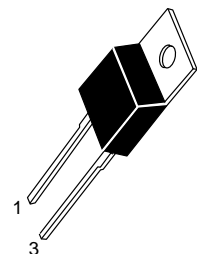
### Mechanical Characteristics

- 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: B2515L



**MBR2515L**

**SCHOTTKY BARRIER  
RECTIFIER  
25 AMPERES  
15 VOLTS**



**CASE 221B-03, STYLE 1  
(TO-220AC)**

### MAXIMUM RATINGS (Per Leg)

Rating	Symbol	Max	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	15	Volts
Average Rectified Forward Current (Rated $V_R$ ) $T_C = 90^\circ\text{C}$	$I_F(AV)$	25	Amps
Peak Repetitive Forward Current, Per Leg (Rated $V_R$ , Square Wave, 20 kHz) $T_C = 90^\circ\text{C}$	$I_{FRM}$	30	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 $\mu\text{s}$ , 1.0 kHz)	$I_{RRM}$	1.0	Amps
Operating Junction Temperature	$T_J$	-65 to +100	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-65 to +125	$^\circ\text{C}$

### THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Case	$R_{\theta JC}$	2.0	$^\circ\text{C/W}$
---------------------------------------	-----------------	-----	--------------------

### ELECTRICAL CHARACTERISTICS

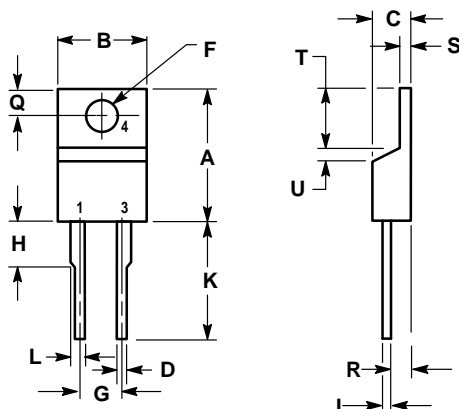
Maximum Instantaneous Forward Voltage (1) ( $I_F = 25$ Amps, $T_J = 25^\circ\text{C}$ ) ( $I_F = 25$ Amps, $T_J = 70^\circ\text{C}$ ) ( $I_F = 19$ Amps, $T_J = 70^\circ\text{C}$ )	$V_F$	0.45 0.42 0.28	Volts
Maximum Instantaneous Reverse Current (1) (Rated DC Voltage, $T_J = 25^\circ\text{C}$ ) (Rated DC Voltage, $T_J = 70^\circ\text{C}$ )	$I_R$	15 200	mA

(1) Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

SWITCHMODE is a trademark of Motorola Inc.

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

# PACKAGE DIMENSIONS




- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.595	0.620	15.11	15.75
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.82
D	0.025	0.035	0.64	0.89
F	0.142	0.147	3.61	3.73
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.018	0.025	0.46	0.64
K	0.500	0.562	12.70	14.27
L	0.045	0.060	1.14	1.52
Q	0.100	0.120	2.54	3.04
R	0.080	0.110	2.04	2.79
S	0.045	0.055	1.14	1.39
T	0.235	0.255	5.97	6.48
U	0.000	0.050	0.000	1.27

- STYLE 1:
- PIN 1. CATHODE
  - N/A
  - ANODE
  - CATHODE

## CASE 221B-03 (TO-220AC) ISSUE B

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

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

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

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



**MOTOROLA**

