MBR2515L

Switch-mode Power Rectifier

Features and Benefits

- Low Forward Voltage
- Low Power Loss/High Efficiency
- High Surge Capacity
- 100°C Operating Junction Temperature
- 25 A Total
- Pb−Free Packages are Available*

Applications

- Power Supply – Output Rectification
- Power Management
- Instrumentation

Mechanical Characteristics

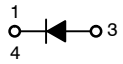
- Case: Epoxy, Molded
- Epoxy Meets UL 94, V−0 @ 0.125 in
- Weight: 1.9 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperatures for Soldering Purposes: 260°C Max. for 10 Seconds
- ESD Rating: Human Body Model 3B
  Machine Model C

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

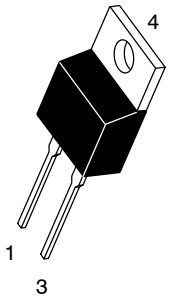
ON Semiconductor®

http://onsemi.com

SCHOTTKY BARRIER RECTIFIER 25 AMPERES, 15 VOLTS



MARKING DIAGRAM



TO−220AC
CASE 221B
STYLE 1

A	= Assembly Location
Y	= Year
WW	= Work Week
G	= Pb−Free Package
B2515L	= Device Code
KA	= Diode Polarity

ORDERING INFORMATION

Device	Package	Shipping
MBR2515L	TO−220	50 Units/Rail
MBR2515LG	TO−220 (Pb−Free)	50 Units/Rail

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	15	V
Average Rectified Forward Current (T_C = 91°C per Device)	$I_{F(AV)}$	25	A
Peak Repetitive Forward Current, per Leg (Square Wave, 20 kHz, T_C = 95°C)	I_{FRM}	25	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60 Hz)	I_{FSM}	150	A
Peak Repetitive Reverse Surge Current (2.0 μs, 1.0 kHz)	I_{RRM}	1.0	A
Storage Temperature Range	T_{stg}	−65 to +125	°C
Operating Junction Temperature	T_J	−65 to +100	°C

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

THERMAL CHARACTERISTICS

Characteristic	Conditions	Symbol	Max	Unit
Maximum Thermal Resistance, Junction−to−Case	Min. Pad	$R_{\theta JC}$	1.0	°C/W
Maximum Thermal Resistance, Junction−to−Ambient	Min. Pad	$R_{\theta JA}$	70	

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min	Typical	Max	Unit
Instantaneous Forward Voltage (Note 1) (i_F = 25 Amps, T_j = 25°C) (i_F = 25 Amps, Tj = 70°C) (i_F = 19 Amps, Tj = 70°C)	v_F	 − − −	 0.41 0.37 0.34	 0.45 0.42 0.38	V
Instantaneous Reverse Current (Note 1) (Rated dc Voltage, Tj = 25°C) (Rated dc Voltage, Tj = 70°C)	i_R	 − −	 1.0 24	 15 200	mA

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

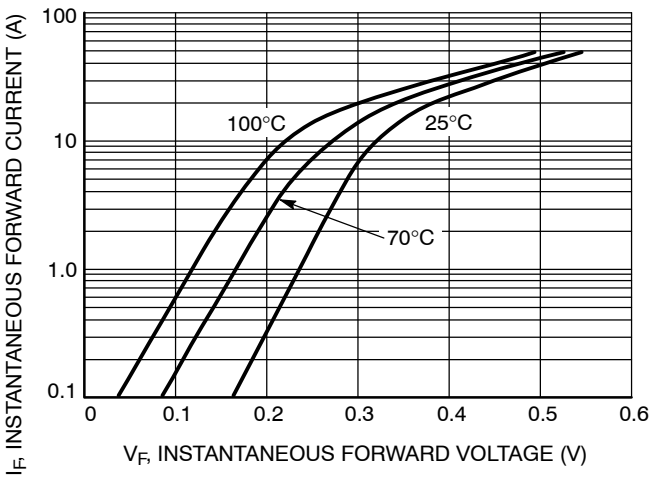


Figure 1. Typical Forward Voltage

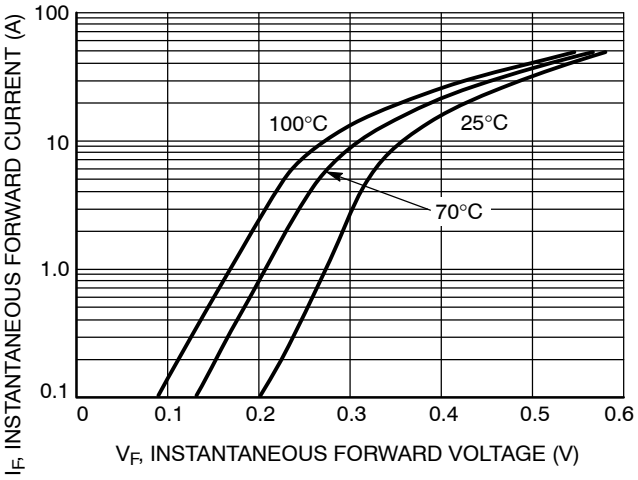


Figure 2. Maximum Forward Voltage

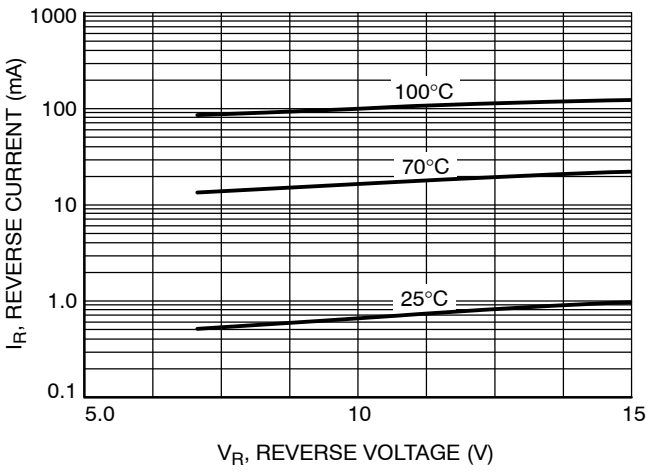


Figure 3. Typical Reverse Current

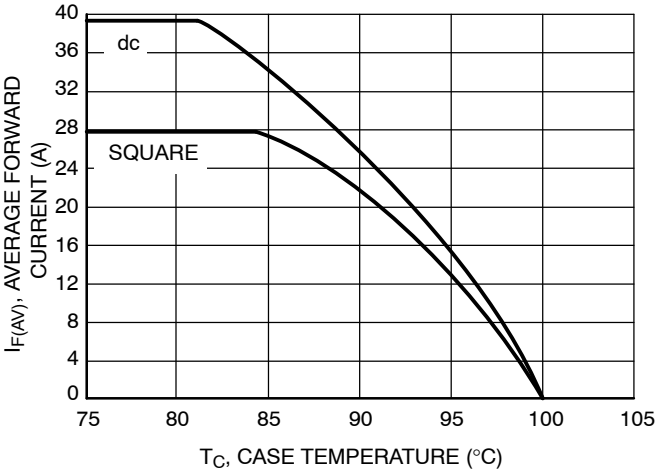


Figure 4. Current Derating, Case, Per Leg

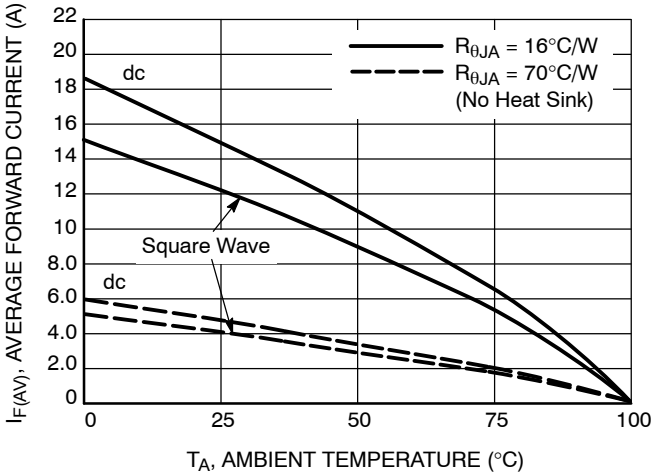


Figure 5. Current Derating, Ambient, Per Leg

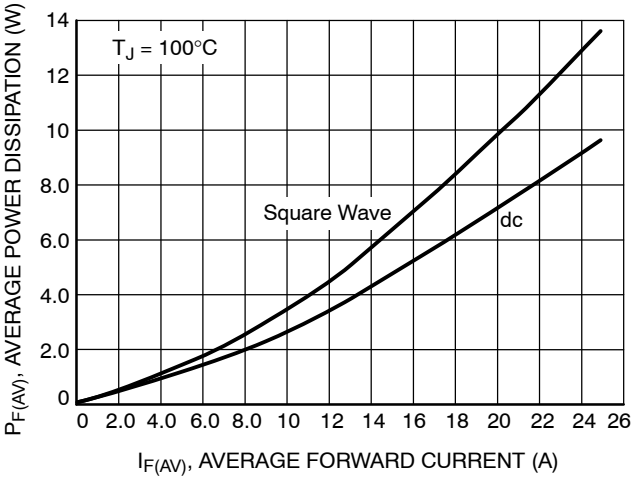


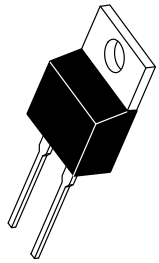
Figure 6. Forward Power Dissipation

MECHANICAL CASE OUTLINE
PACKAGE DIMENSIONS

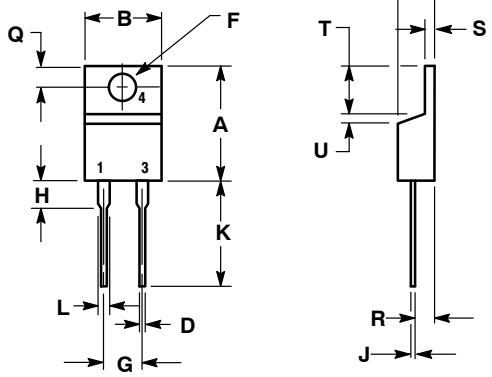
ON Semiconductor®

TO−220, 2−LEAD
CASE 221B−04
ISSUE F

DATE 12 APR 2013



SCALE 1:1



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

	INCHES		MILLIMETERS	
DIM	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	0.039	0.64	1.00
F	0.142	0.161	3.61	4.09
G	0.190	0.210	4.83	5.33
H	0.110	0.130	2.79	3.30
J	0.014	0.025	0.36	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
2. N/A
3. ANODE
4. CATHODE

STYLE 2:
PIN 1. ANODE
2. N/A
3. CATHODE
4. ANODE

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DESCRIPTION:	**TO−220, 2−LEAD**		**PAGE 1 OF 1**

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Email Requests to: orderlit@onsemi.com

onsemi Website: www.onsemi.com

TECHNICAL SUPPORT
North American Technical Support:
Voice Mail: 1 800−282−9855 Toll Free USA/Canada
Phone: 011 421 33 790 2910

Europe, Middle East and Africa Technical Support:
Phone: 00421 33 790 2910
For additional information, please contact your local Sales Representative

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