
Chipsmall
深圳市津利帝科技有限公司
Geelead Technology Limited
Chipsmall
采购部

MBRB2515L

Preferred Device

SWITCHMODE™ Power Rectifier ORing Function Diode

D²PAK Surface Mount Power Package

The D²PAK Power Rectifier employs 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, free wheeling diodes, and polarity protection diodes.

Features

- Guardring for Stress Protection
- Low Forward Voltage
- 100°C Operating Junction Temperature
- Epoxy Meets UL 94 V−0 @ 0.125 in
- Short Heat Sink Tab Manufactured − Not Sheared
- Similar in Size to the Industry Standard TO−220 Package
- Pb−Free Packages are Available

Mechanical Characteristics:

- Case: Epoxy, Molded, Epoxy Meets UL 94 V−0
- Weight: 1.7 Grams (Approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (>400 V)
  Human Body Model, 3B (>8000 V)

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 (Rated V_R, T_C = 90°C)	$I_{F(AV)}$	25	A
Peak Repetitive Forward Current (Rated V_R, Square Wave, 20 kHz, T_C = 100°C)	I_{FRM}	30	A
Non−Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz)	I_{FSM}	150	A
Storage Temperature Range	T_{stg}	−65 to +150	°C
Operating Junction Temperature	T_J	100	°C
Voltage Rate of Change (Rated V_R)	dv/dt	10,000	V/μs

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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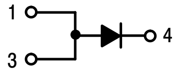
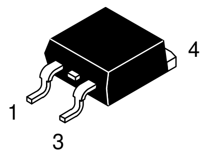
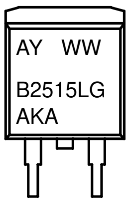
SCHOTTKY BARRIER RECTIFIER 25 AMPERES, 15 VOLTS





D²PAK
CASE 418B
STYLE 3

MARKING DIAGRAM



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

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

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

September, 2005 − Rev. 6

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, – Junction−to−Case – Junction−to−Ambient (Note 1)	$R_{\theta JC}$ $R_{\theta JA}$	1.0 50	°C/W

1. When mounted using minimum recommended pad size on FR−4 board.

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (Note 2) (i_F = 19 Amps, T_J = 70°C) (i_F = 25 Amps, T_J = 70°C) (i_F = 25 Amps, T_J = 25°C)	v_F	 0.38 0.42 0.45	V
Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, T_J = 70°C) (Rated dc Voltage, T_J = 25°C)	I_R	 200 15	mA

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

ORDERING INFORMATION

Device	Package	Shipping†
MBRB2515L	D²PAK	50 Units / Rail
MBRB2515LG	D²PAK (Pb−Free)	50 Units / Rail
MBRB2515LT4	D²PAK	800 Units / Tape & Reel
MBRB2515LT4G	D²PAK (Pb−Free)	800 Units / Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

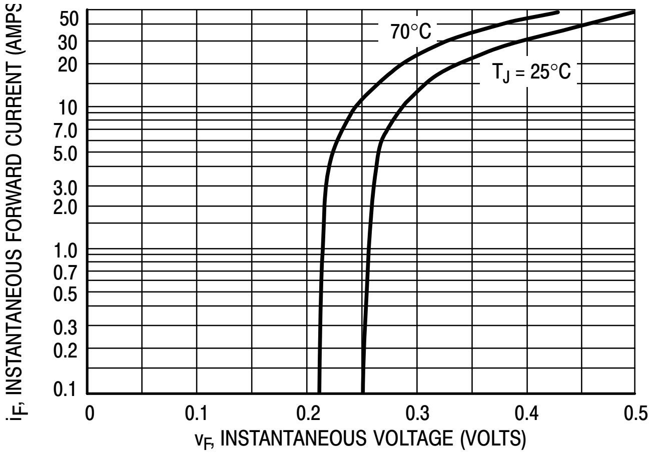


Figure 1. Typical Forward Voltage

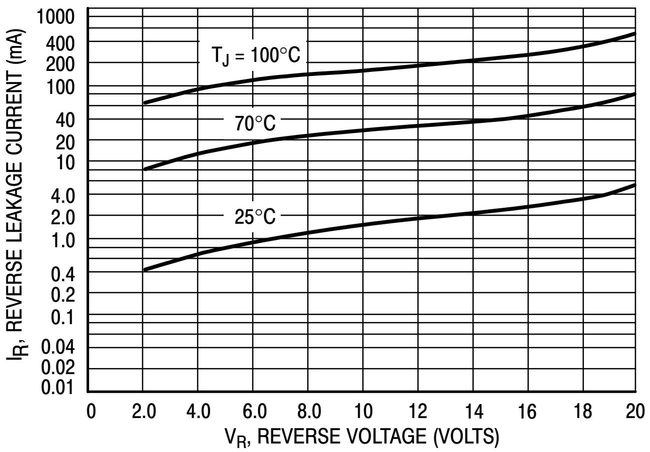


Figure 2. Typical Reverse Leakage Current

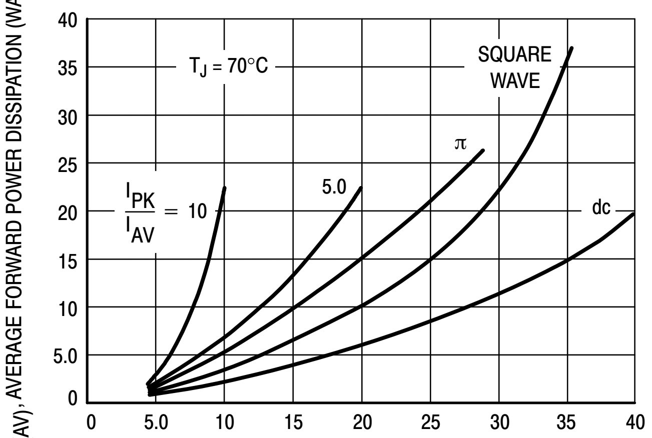


Figure 3. Typical Forward Power Dissipation

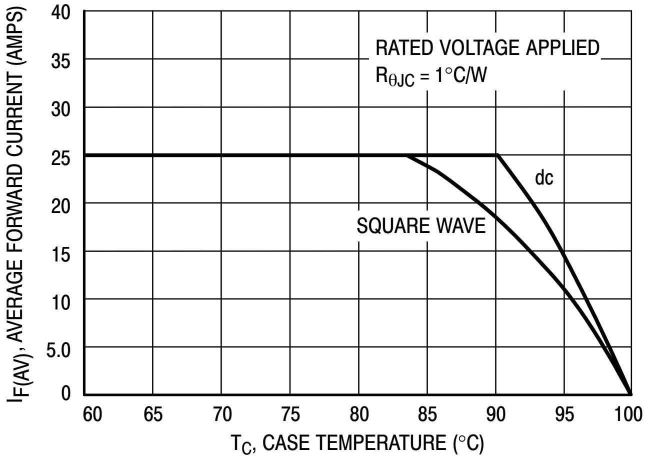
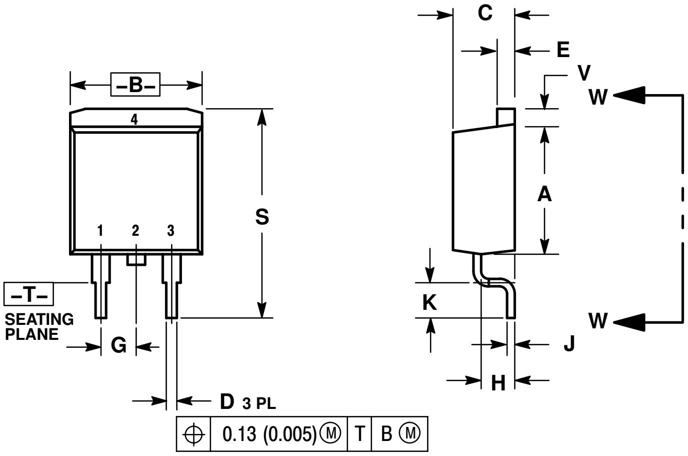


Figure 4. Current Derating, Case

PACKAGE DIMENSIONS

D²PAK 3

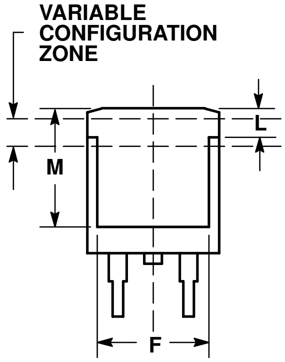
CASE 418B−04
ISSUE J



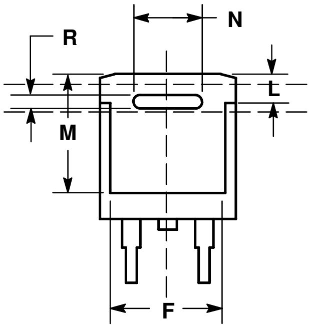
NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 418B−01 THRU 418B−03 OBSOLETE, NEW STANDARD 418B−04.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.340	0.380	8.64	9.65
B	0.380	0.405	9.65	10.29
C	0.160	0.190	4.06	4.83
D	0.020	0.035	0.51	0.89
E	0.045	0.055	1.14	1.40
F	0.310	0.350	7.87	8.89
G	0.100 BSC		2.54 BSC	
H	0.080	0.110	2.03	2.79
J	0.018	0.025	0.46	0.64
K	0.090	0.110	2.29	2.79
L	0.052	0.072	1.32	1.83
M	0.280	0.320	7.11	8.13
N	0.197 REF		5.00 REF	
P	0.079 REF		2.00 REF	
R	0.039 REF		0.99 REF	
S	0.575	0.625	14.60	15.88
V	0.045	0.055	1.14	1.40

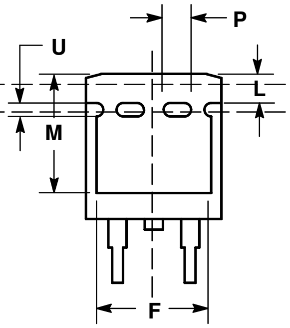
STYLE 3:
PIN 1. ANODE
2. CATHODE
3. ANODE
4. CATHODE



VIEW W−W
1

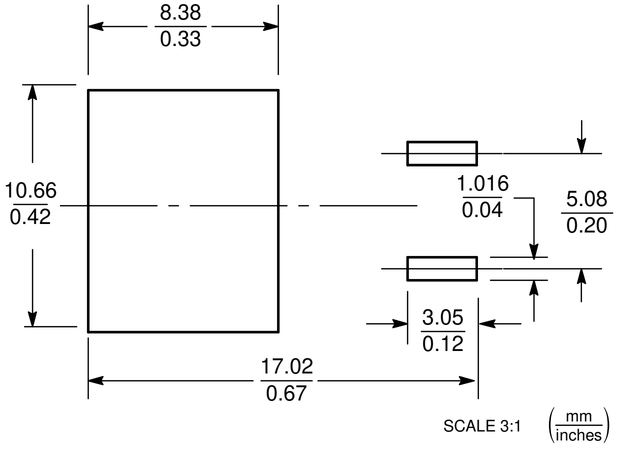


VIEW W−W
2



VIEW W−W
3

SOLDERING FOOTPRINT*



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

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