MBRS230LT3

Surface Mount Schottky Power Rectifier

SMB Power Surface Mount Package

. . . employing the Schottky Barrier principle in a metal-to-silicon power rectifier. Features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency switching power supplies; free wheeling diodes and polarity protection diodes.

- Compact Package with J-Bend Leads Ideal for Automated Handling
- Highly Stable Oxide Passivated Junction
- Guardring for Over-Voltage Protection
- Low Forward Voltage Drop

Mechanical Characteristics:

- Case: Molded Epoxy
- Epoxy Meets UL94, VO at 1/8″
- Weight: 95 mg (approximately)
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Maximum Temperature of 260°C/10 Seconds for Soldering
- Available in 12 mm Tape, 2500 Units per 13″ Reel, Add “T3” Suffix to Part Number
- Cathode Polarity Band
- Marking: 2BL3

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Average Rectified Forward Current (At Rated V_R, T_C = 110°C)	I_O	2.0	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 105°C)	I_{FRM}	4.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60 Hz)	I_{FSM}	40	A
Storage/Operating Case Temperature	T_{stg}, T_C	-55 to +175	°C
Operating Junction Temperature	T_J	-55 to +125	°C
Voltage Rate of Change (Rated V_R, T_J = 25°C)	dv/dt	10,000	V/μs

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SCHOTTKY BARRIER RECTIFIER 2.0 AMPERES 30 VOLTS

SMB
CASE 403A
PLASTIC

MARKING DIAGRAM

Y = Year
WW = Work Week
2BL3 = Specific Device Code

ORDERING INFORMATION

Device	Package	Shipping
MBRS230LT3	SMB	2500/Tape & Reel

Publication Order Number:

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance - Junction-to-Lead (Note 1)	$R_{\theta JL}$	18.6	°C/W
Thermal Resistance - Junction-to-Ambient (Note 1)	$R_{\theta JA}$	135	

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2)	V_F	**T_J = 25°C**	**T_J = 125°C**	Volts
(I_F = 2.0 A)		0.50	0.45	
see Figure 2 (I_F = 4.0 A)		0.60	0.63	
Maximum Instantaneous Reverse Current (Note 2)	I_R	**T_J = 25°C**	**T_J = 125°C**	mA
(V_R = 30 V)		1	75	
see Figure 4 (V_R = 15 V)		0.31	35	

1. Minimum pad size (0.108″ X 0.085″) for each lead on FR4 board.
2. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%.

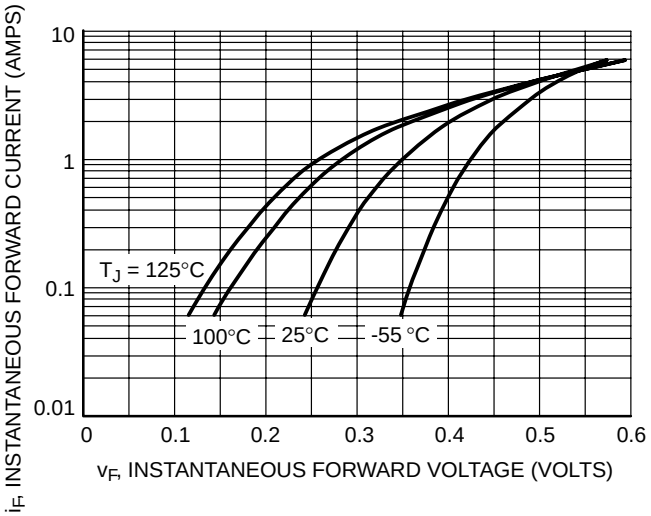


Figure 1. Typical Forward Voltage

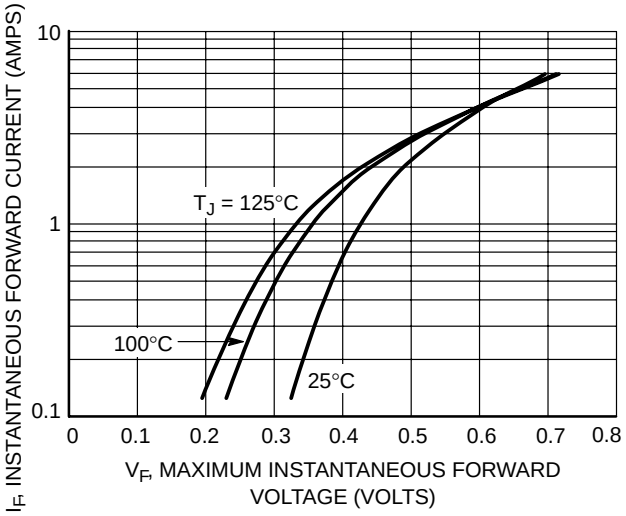


Figure 2. Maximum Forward Voltage

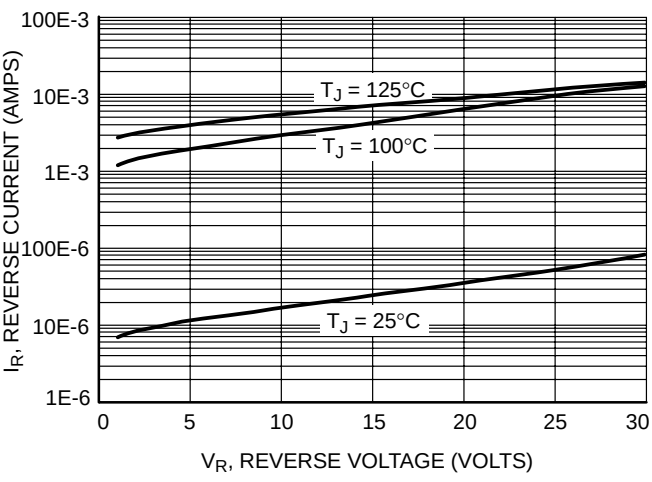


Figure 3. Typical Reverse Current

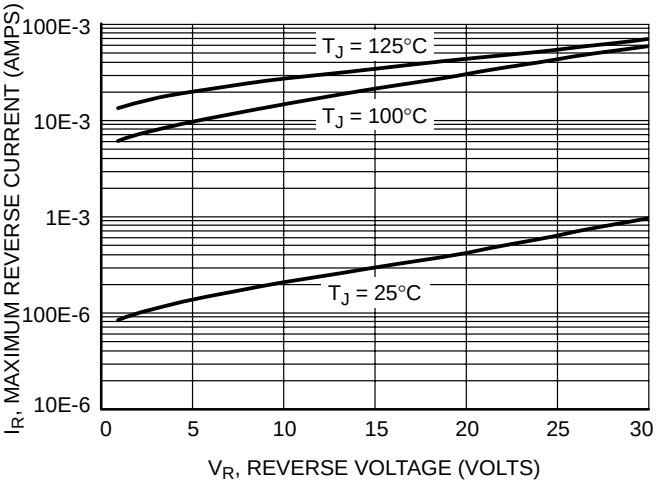


Figure 4. Maximum Reverse Current

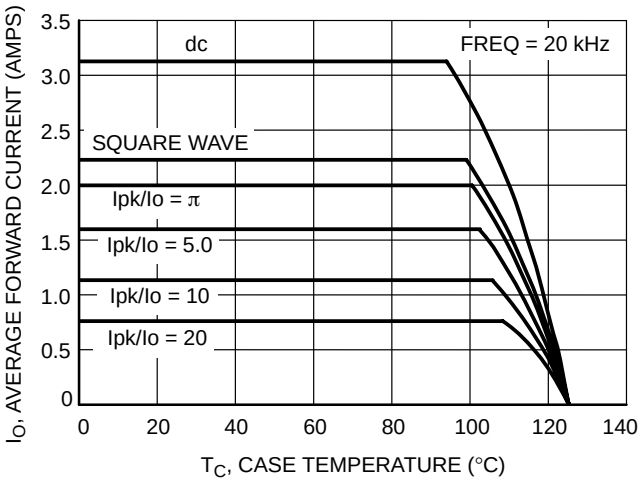


Figure 5. Current Derating Per Leg

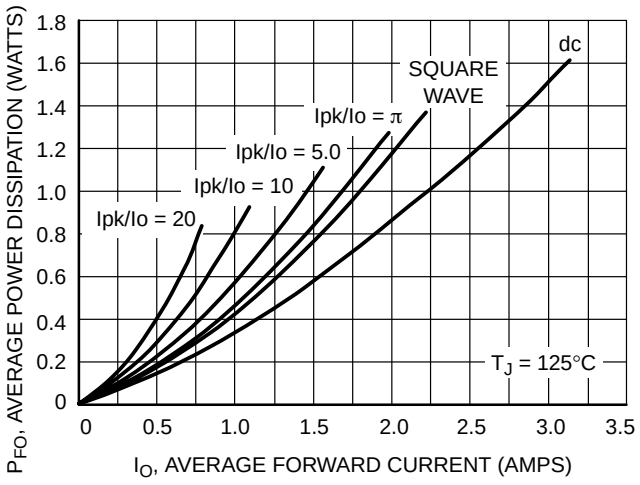


Figure 6. Forward Power Dissipation Per Leg

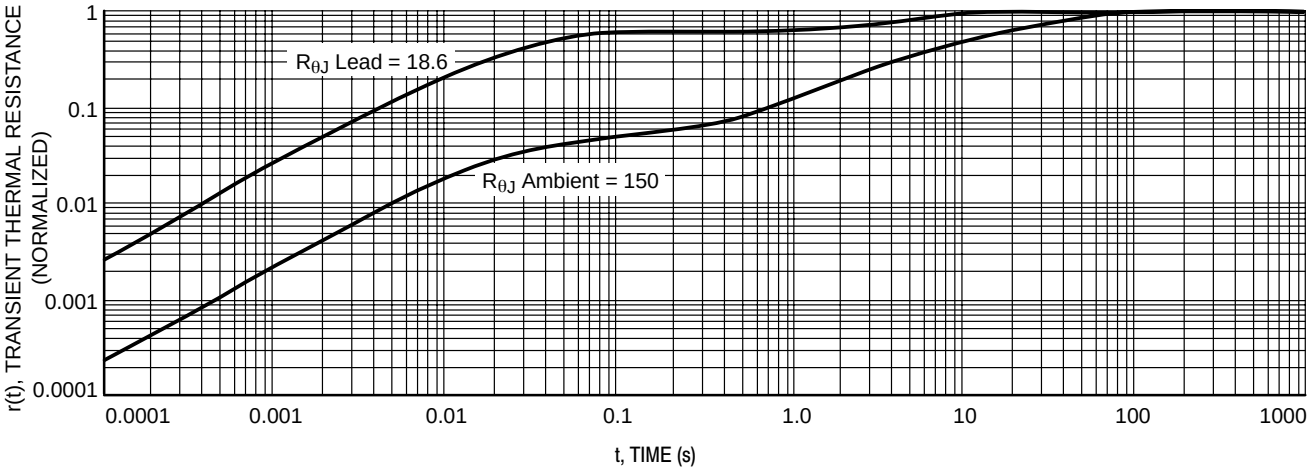
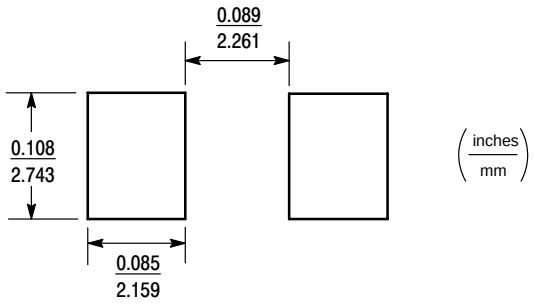


Figure 7. Thermal Response

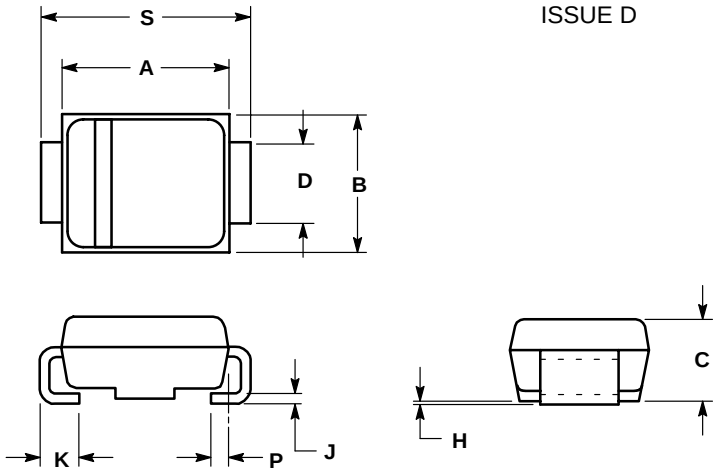
MBRS230LT3

MINIMUM SOLDER PAD SIZES



PACKAGE DIMENSIONS

SMB
PLASTIC PACKAGE
CASE 403A-03
ISSUE D



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.130	0.150	3.30	3.81
C	0.075	0.095	1.90	2.41
D	0.077	0.083	1.96	2.11
H	0.0020	0.0060	0.051	0.152
J	0.006	0.012	0.15	0.30
K	0.030	0.050	0.76	1.27
P	0.020 REF		0.51 REF	
S	0.205	0.220	5.21	5.59

PUBLICATION ORDERING INFORMATION

Literature Fulfillment:
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P.O. Box 5163, Denver, Colorado 80217 USA
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