MBRS240LT3

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)
- Cathode Polarity Band
- 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
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Marking: 2BL4

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
Average Rectified Forward Current (At Rated V_R, T_C = 100°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}	25	A
Storage/Operating Case Temperature	T_{stg}, T_C	–55 to +150	°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

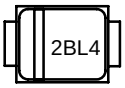
ON Semiconductor™

http://onsemi.com

SCHOTTKY BARRIER RECTIFIER 2.0 AMPERES 40 VOLTS

SMB
CASE 403A
PLASTIC

MARKING DIAGRAM



2BL4 = Device Code

ORDERING INFORMATION

Device	Package	Shipping
MBRS240LT3	SMB	2500/Tape & Reel

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction–to–Lead (Note 1.) Thermal Resistance — Junction–to–Ambient (Note 3.)	$R_{\theta JL}$ $R_{\theta JA}$	18 78	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 2.)	V_F	**T_J = 25°C**	**T_J = 125°C**	Volts
(I_F = 2.0 A)		0.43	0.375	
see Figure 2 (I_F = 4.0 A)		0.54	0.55	
Maximum Instantaneous Reverse Current (Note 2.)	I_R	**T_J = 25°C**	**T_J = 100°C**	mA
(V_R = 40 V)		2.0	60	
see Figure 4 (V_R = 20 V)		0.5	40	

1. Mounted with minimum recommended pad size, PC Board FR4.
2. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%.
3. 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.

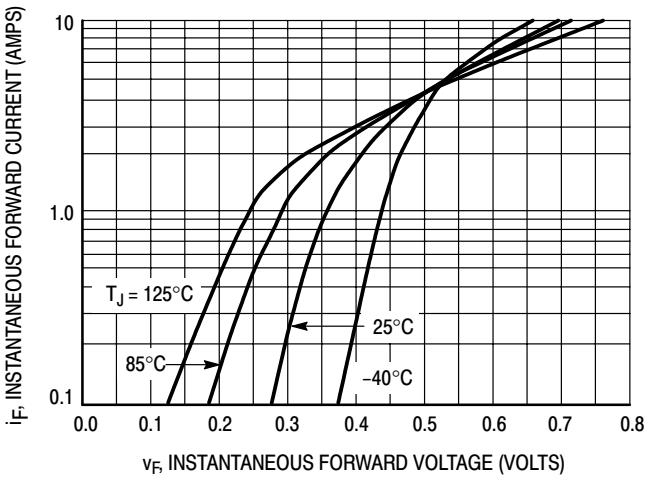


Figure 1. Typical Forward Voltage

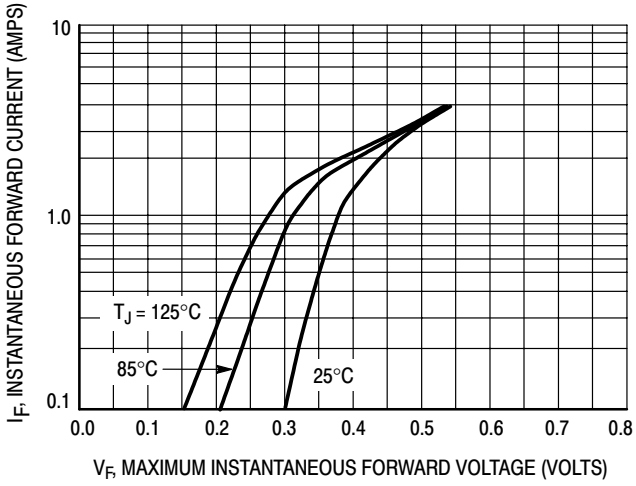


Figure 2. Maximum Forward Voltage

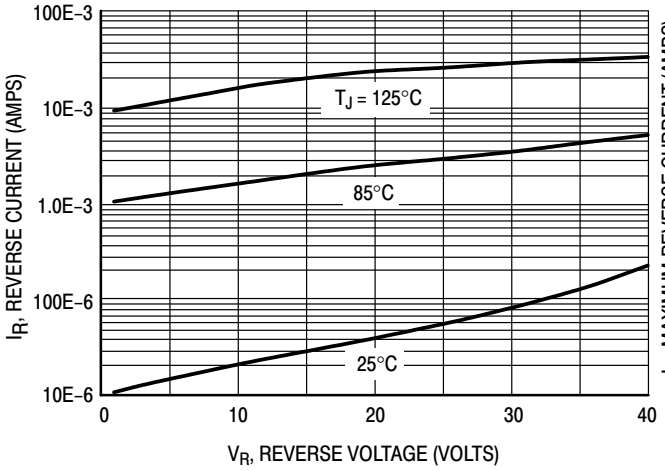


Figure 3. Typical Reverse Current

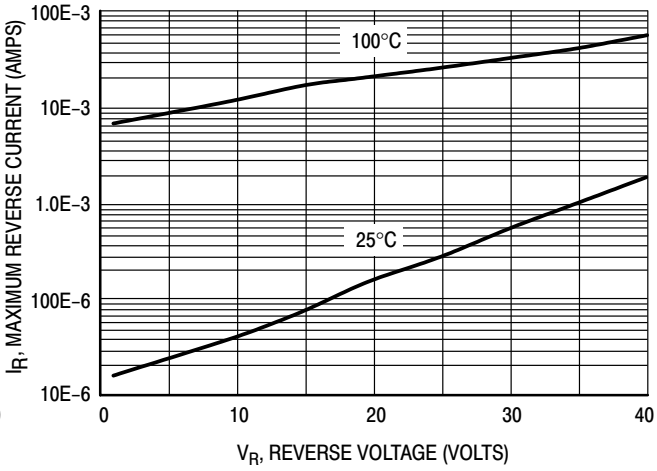


Figure 4. Maximum Reverse Current

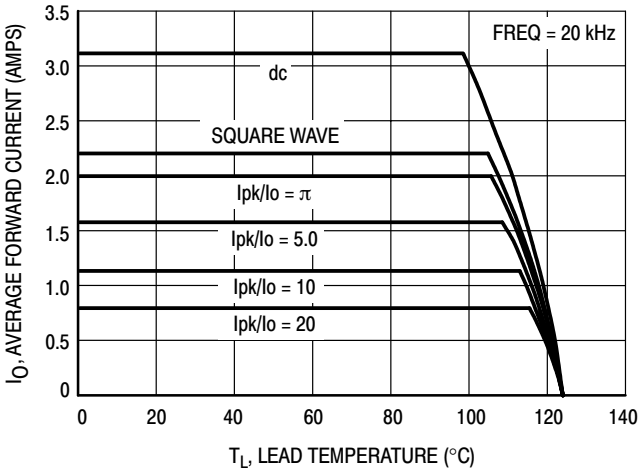


Figure 5. Current Derating

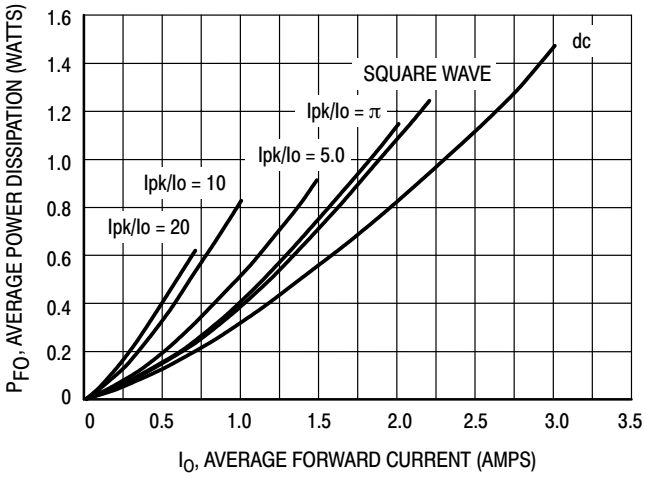


Figure 6. Forward Power Dissipation

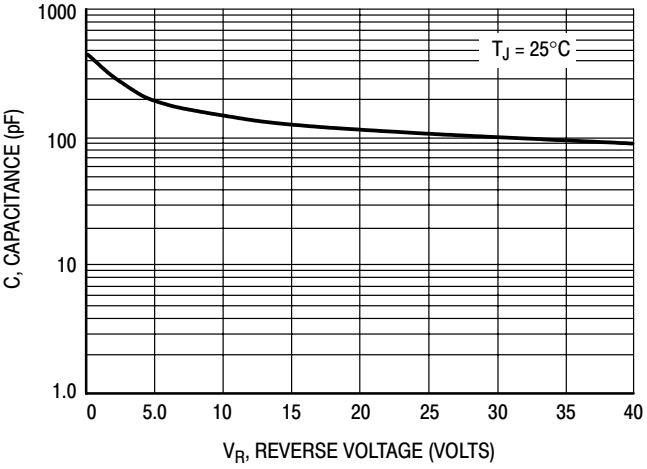


Figure 7. Capacitance

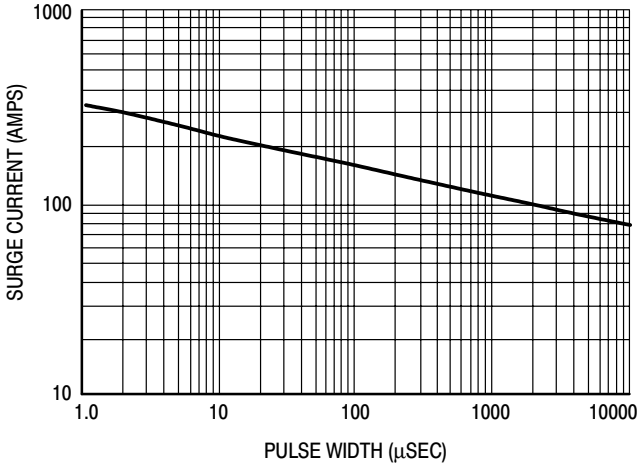


Figure 8. Maximum Non−Repetitive Forward Surge Current

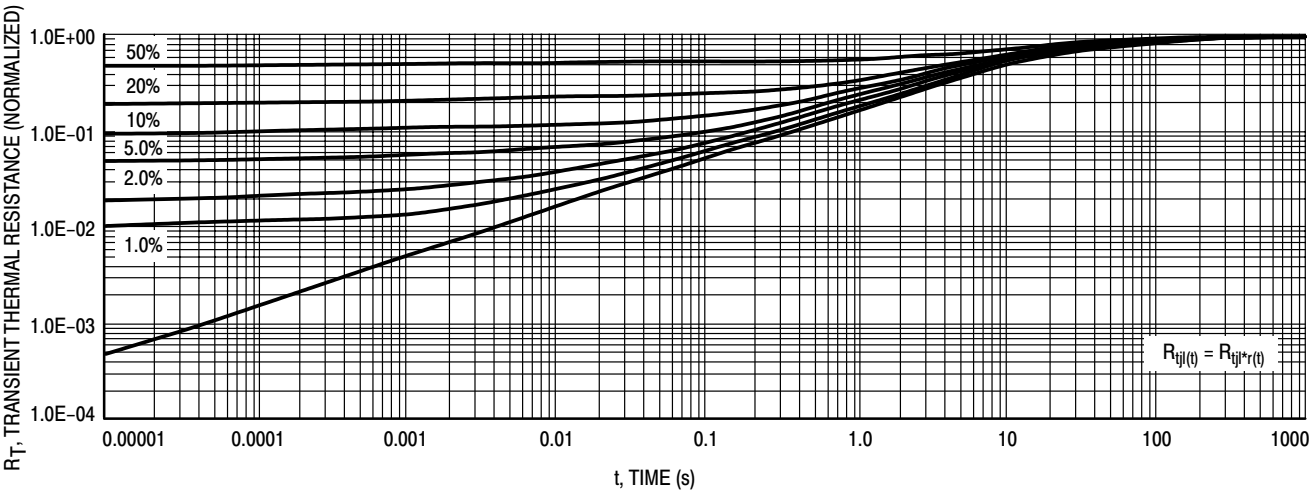
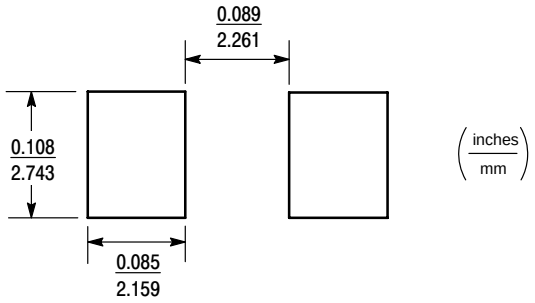
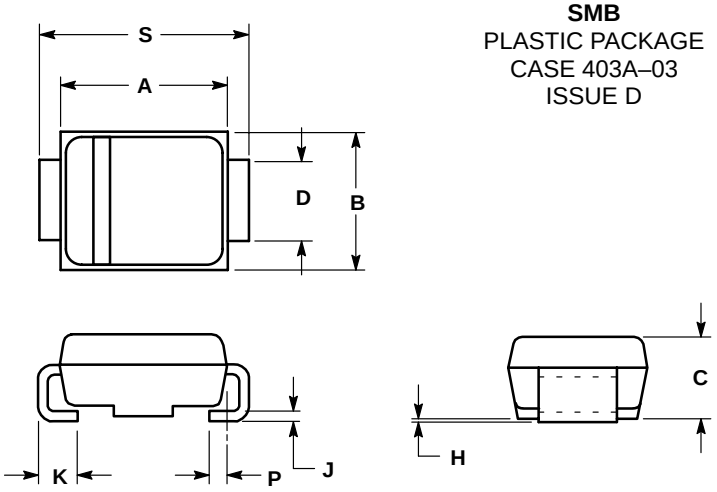


Figure 9. Thermal Response

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

NORTH AMERICA Literature Fulfillment:
Literature Distribution Center for ON Semiconductor
P.O. Box 5163, Denver, Colorado 80217 USA
Phone: 303–675–2175 or 800–344–3860 Toll Free USA/Canada
Fax: 303–675–2176 or 800–344–3867 Toll Free USA/Canada
Email: ONlit@hibbertco.com
Fax Response Line: 303–675–2167 or 800–344–3810 Toll Free USA/Canada

N. American Technical Support: 800–282–9855 Toll Free USA/Canada

EUROPE: LDC for ON Semiconductor – European Support
German Phone: (+1) 303–308–7140 (Mon–Fri 2:30pm to 7:00pm CET)
Email: ONlit–german@hibbertco.com
French Phone: (+1) 303–308–7141 (Mon–Fri 2:00pm to 7:00pm CET)
Email: ONlit–french@hibbertco.com
English Phone: (+1) 303–308–7142 (Mon–Fri 12:00pm to 5:00pm GMT)
Email: ONlit@hibbertco.com

EUROPEAN TOLL–FREE ACCESS*: 00–800–4422–3781
*Available from Germany, France, Italy, UK, Ireland

CENTRAL/SOUTH AMERICA:
Spanish Phone: 303–308–7143 (Mon–Fri 8:00am to 5:00pm MST)
Email: ONlit–spanish@hibbertco.com
Toll–Free from Mexico: Dial 01–800–288–2872 for Access – then Dial 866–297–9322

ASIA/PACIFIC: LDC for ON Semiconductor – Asia Support
Phone: 303–675–2121 (Tue–Fri 9:00am to 1:00pm, Hong Kong Time)
Toll Free from Hong Kong & Singapore:
001–800–4422–3781
Email: ONlit–asia@hibbertco.com

JAPAN: ON Semiconductor, Japan Customer Focus Center
4–32–1 Nishi–Gotanda, Shinagawa–ku, Tokyo, Japan 141–0031
Phone: 81–3–5740–2700
Email: r14525@onsemi.com

ON Semiconductor Website: http://onsemi.com

For additional information, please contact your local Sales Representative.