Advance Information

Surface Mount Schottky Power Rectifier

SMB Power Surface Mount Package

MBRS240LT3

SCHOTTKY BARRIER RECTIFIER 2.0 AMPERES 40 VOLTS

. . . 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

CASE 403A–03
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Mechanical Characteristics:

- Case: Molded Epoxy
- Epoxy Meets UL94, VO at 1/8″
- Weight: 95 mg (approximately)
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- 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	Volts
Average Rectified Forward Current (At Rated V_R, T_C = 100°C)	I_O	2.0	Amps
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 20 kHz, T_C = 105°C)	I_{FRM}	4.0	Amps
Non–Repetitive Peak Surge Current (Surge applied at rated load conditions, halfwave, single phase, 60 Hz)	I_{FSM}	25	Amps
Storage / Operating Case Temperature	Tstg, 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

THERMAL CHARACTERISTICS

Thermal Resistance — Junction–to–Lead (2) Thermal Resistance — Junction–to–Ambient (3)	$R_{\theta JL}$ $R_{\theta JA}$	18 78	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (1), see Figure 2	V_F	**T_J = 25°C**	**T_J = 125°C**	Volts
(I_F = 2.0 A) (I_F = 4.0 A)		0.43 0.54	0.375 0.55	
Maximum Instantaneous Reverse Current, see Figure 4	I_R	**T_J = 25°C**	**T_J = 100°C**	mA
(V_R = 40 V) (V_R = 20 V)		2.0 0.50	60 40	

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

(1) Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%.

(2) Mounted with minimum recommended pad size, PC Board FR4.

(3) 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.

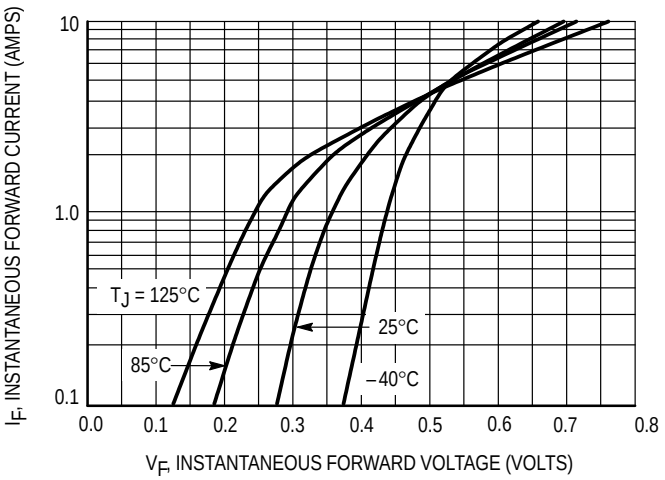


Figure 1. Typical Forward Voltage

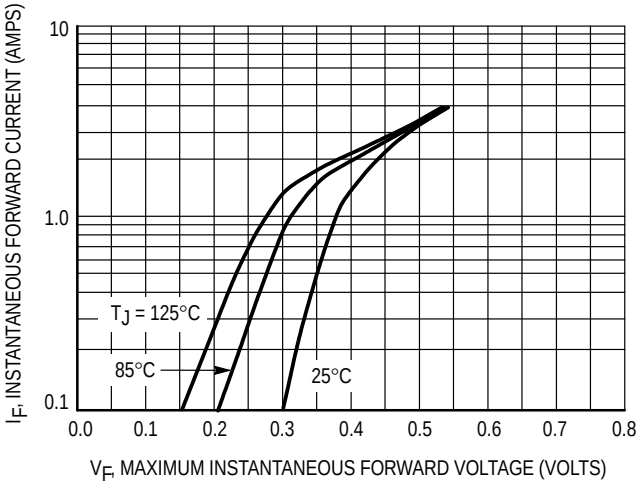


Figure 2. Maximum Forward Voltage

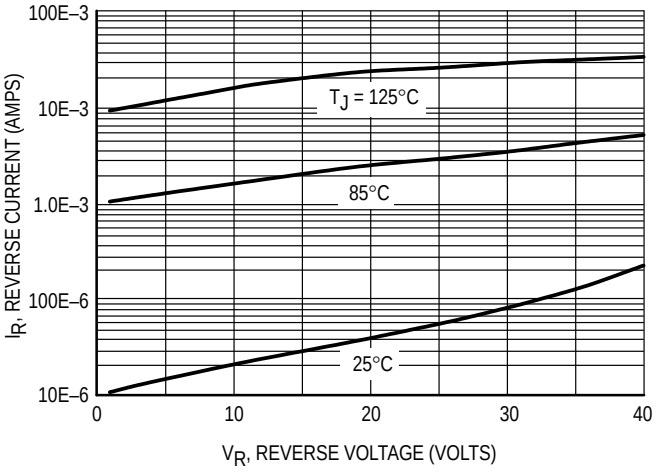


Figure 3. Typical Reverse Current

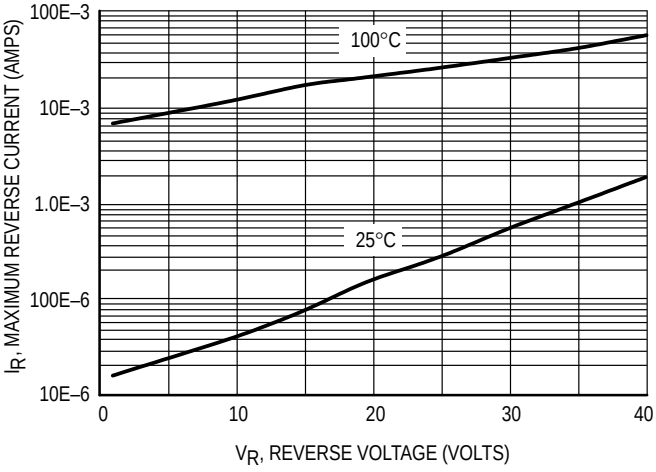


Figure 4. Maximum Reverse Current

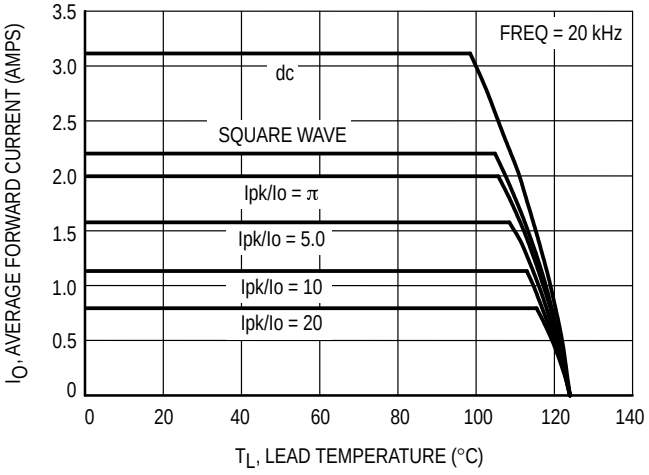


Figure 5. Current Derating

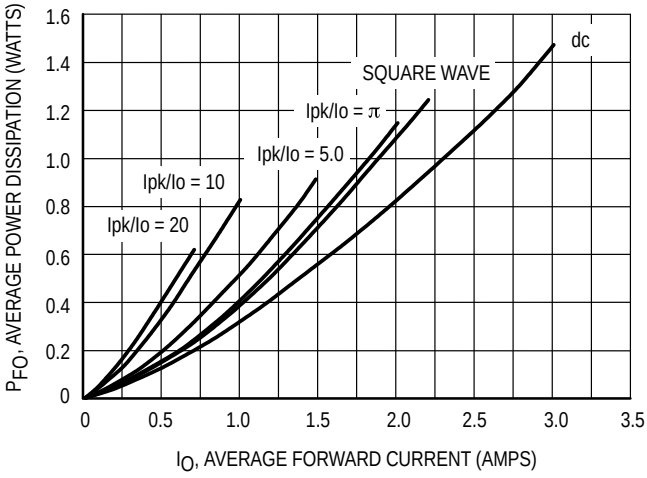


Figure 6. Forward Power Dissipation

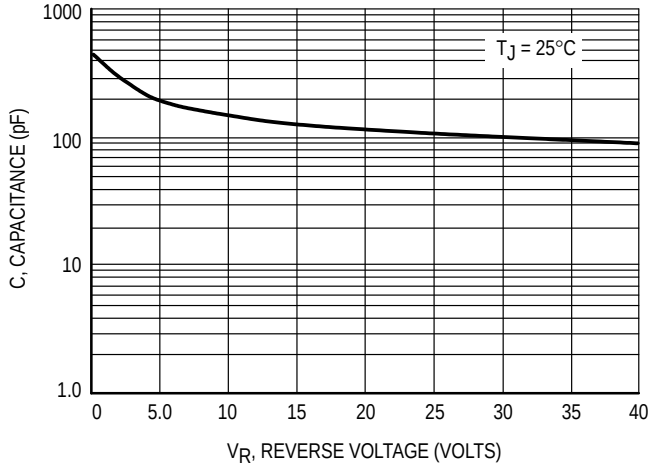


Figure 7. Capacitance

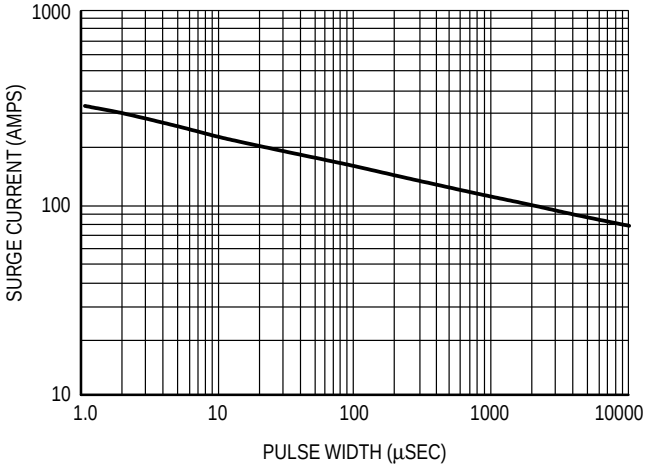


Figure 8. Maximum Non–Repetitive Forward Surge Current

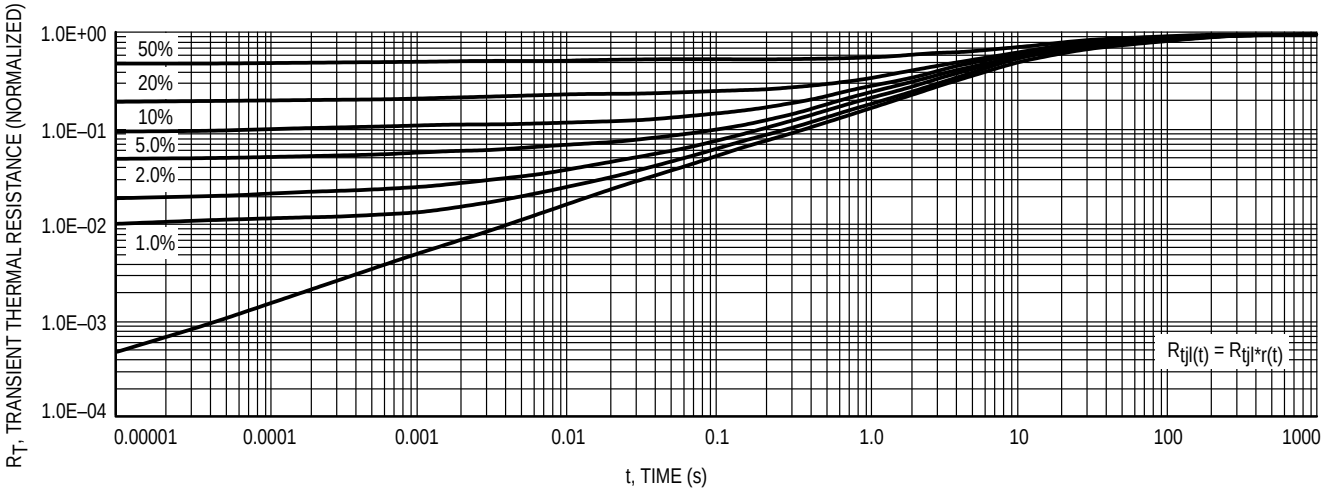
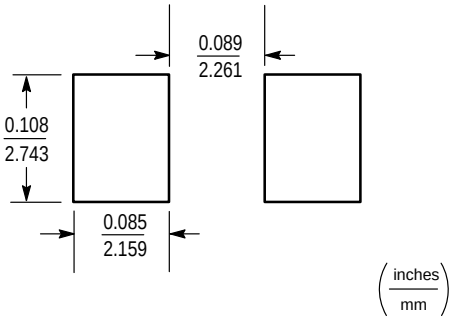


Figure 9. Thermal Response



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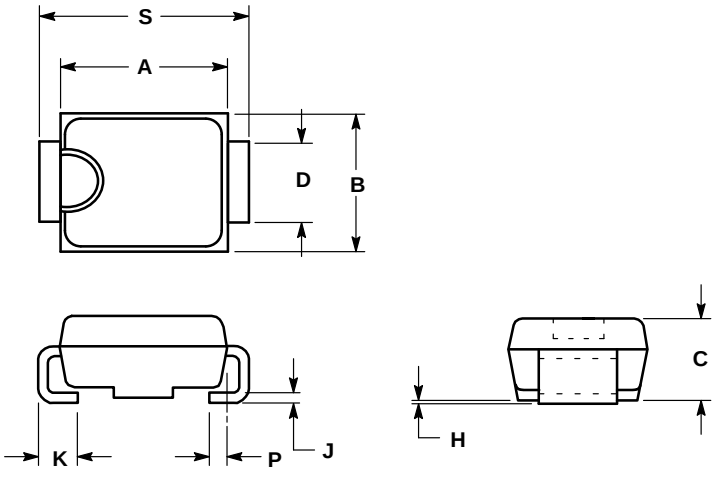
PACKAGE DIMENSIONS



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

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ISSUE C

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
– US & Canada ONLY 1–800–774–1848

INTERNET: http://motorola.com/sps

JAPAN: Nippon Motorola Ltd.: SPD, Strategic Planning Office, 4–32–1,
Nishi–Gotanda, Shinagawa–ku, Tokyo 141, Japan. 81–3–5487–8488

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