Advance Information

Surface Mount Schottky Power Rectifier

SMA Power Surface Mount Package

MBRA130LT3

SCHOTTKY BARRIER RECTIFIER 1 AMPERES 30 VOLTS



CASE 403B-01 SMA

. . . 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, V_O at 1/8″
- Weight: 70 mg (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
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Available in 12 mm Tape, 5000 Units per 13 inch Reel, Add “T3” Suffix to Part Number
- Marking: B3

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 = 105°C)	I_O	1.0	A
Peak Repetitive Forward Current (At Rated V_R, Square Wave, 100 kHz, T_C = 105°C)	I_{FRM}	2.0	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

THERMAL CHARACTERISTICS

Thermal Resistance — Junction–to–Lead (2) Thermal Resistance — Junction–to–Ambient (2)	R_{tjl} R_{tja}	35 86	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (1), see Figure 2	V_F	T_J = 25°C	T_J = 100°C	V
(I_F = 1.0 A)		0.41	0.35	
(I_F = 2.0 A)		0.47	0.43	
Maximum Instantaneous Reverse Current, see Figure 4	I_R	T_J = 25°C	T_J = 100°C	mA
(V_R = 30 V)		1.0	25	
(V_R = 15 V)		0.4	12	

This document contains advance 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%.

(2) Mounted with minimum recommended pad size (2 mm * 2 mm), PC Board FR4, see Figure 8.

REV 2

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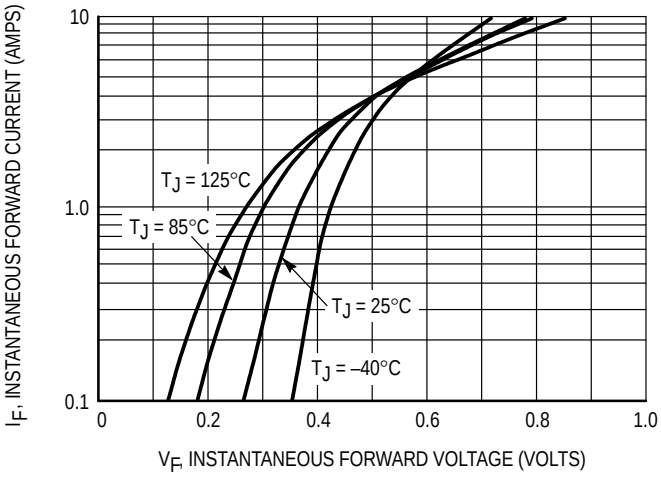


Figure 1. Typical Forward Voltage

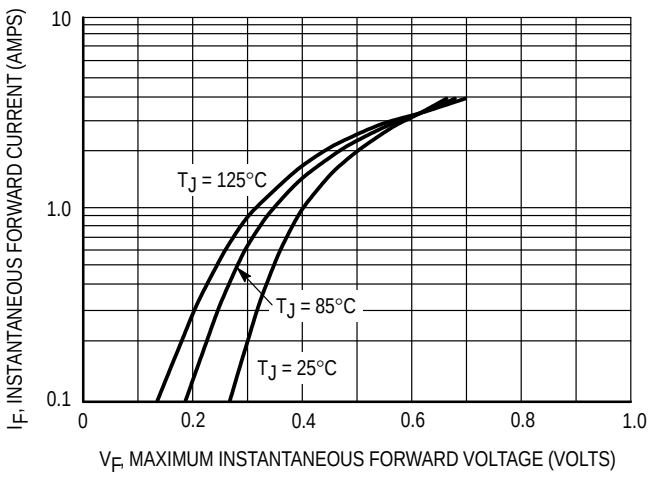


Figure 2. Maximum Forward Voltage

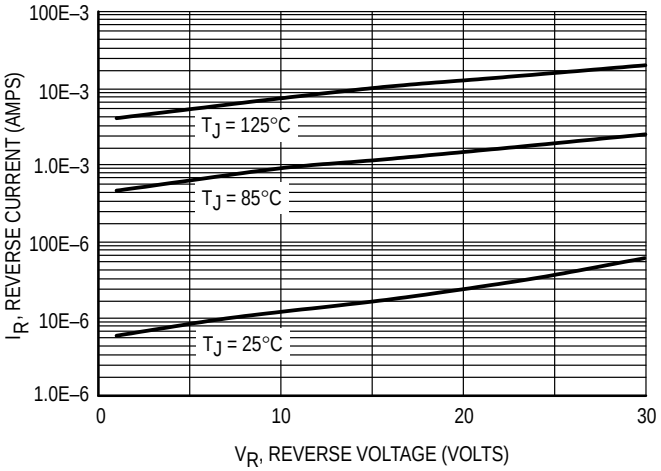


Figure 3. Typical Reverse Current

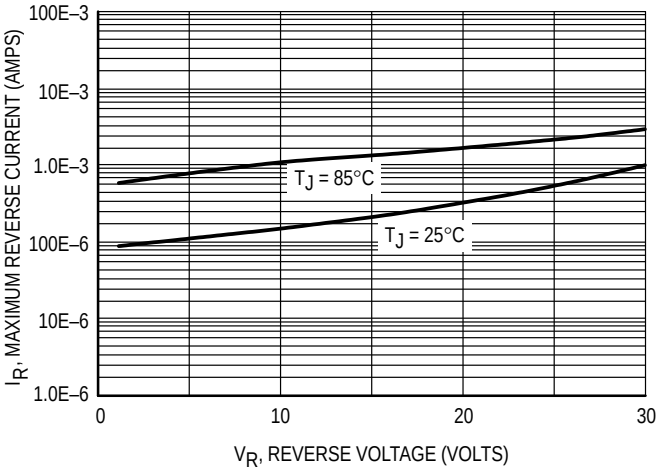


Figure 4. Maximum Reverse Current

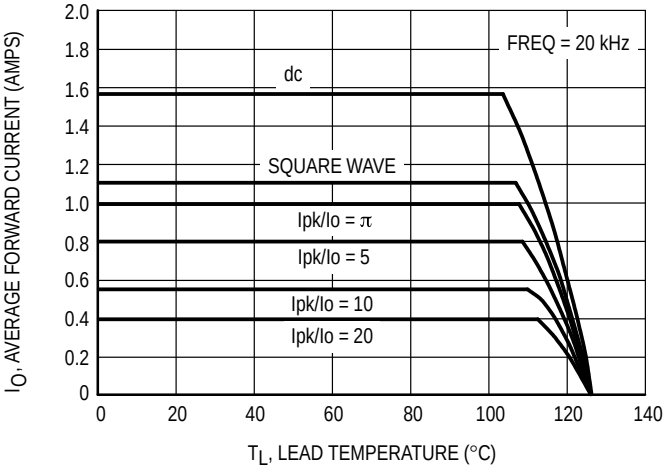


Figure 5. Current Derating

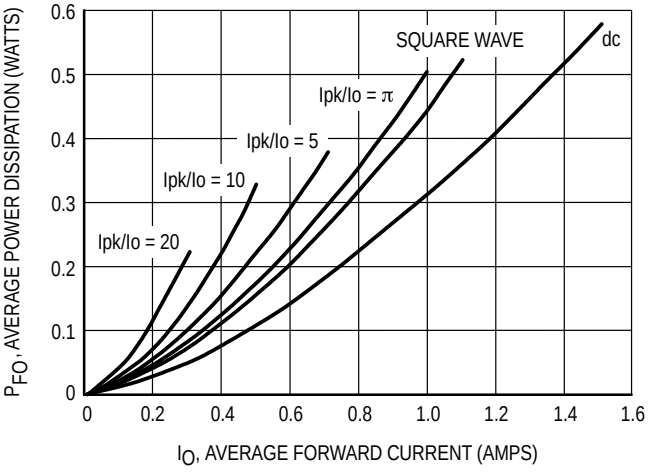


Figure 6. Forward Power Dissipation

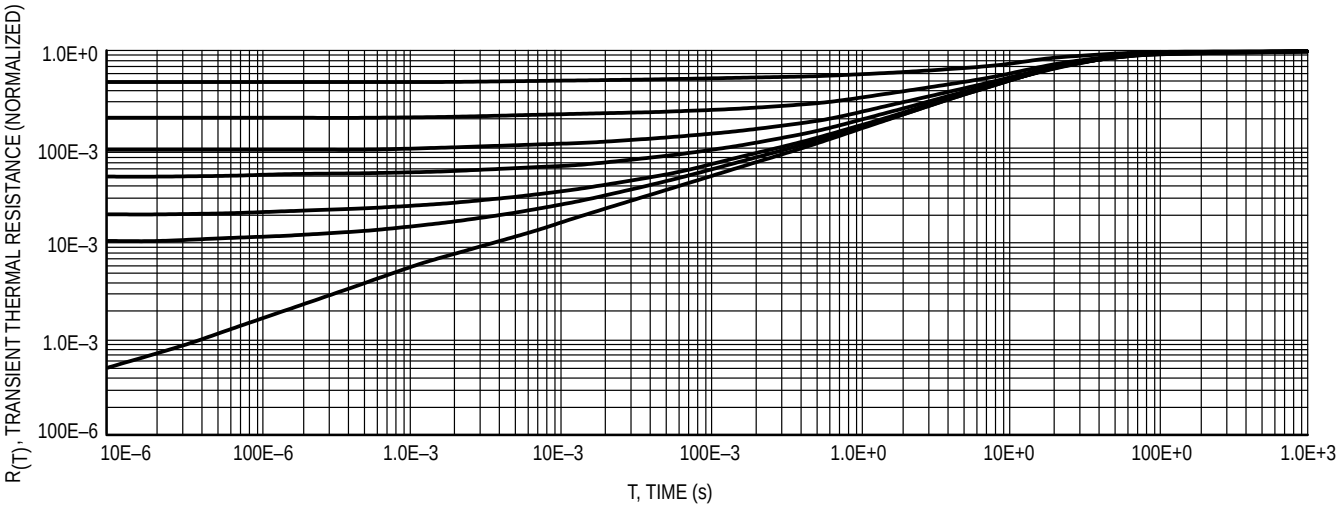


Figure 7. Thermal Response

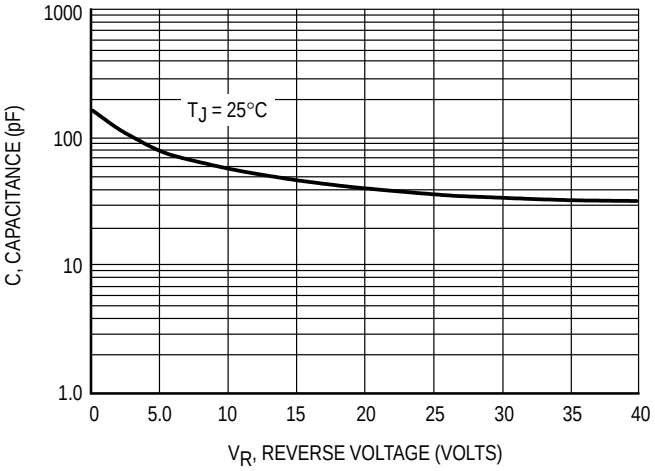
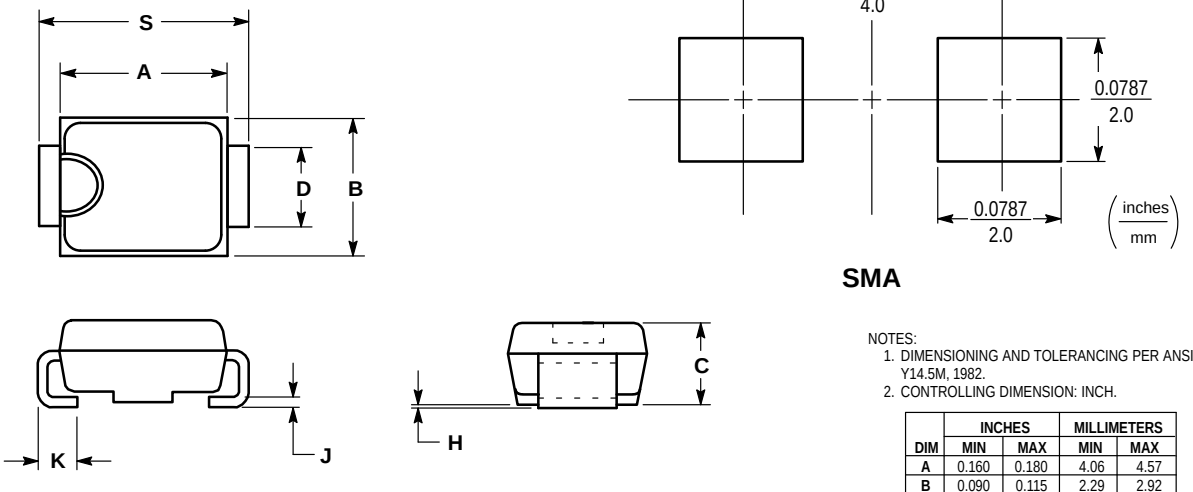


Figure 8. Capacitance

PACKAGE DIMENSIONS



SMA

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

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.160	0.180	4.06	4.57
B	0.090	0.115	2.29	2.92
C	0.075	0.105	1.91	2.67
D	0.050	0.064	1.27	1.63
H	0.004	0.008	0.10	0.20
J	0.006	0.016	0.15	0.41
K	0.030	0.060	0.76	1.52
S	0.190	0.220	4.83	5.59

CASE 403B–01
ISSUE O

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How to reach us:
USA / EUROPE / Locations Not Listed: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036. 1–800–441–2447 or 602–303–5454

MFAX: RMFAX0@email.sps.mot.com – TOUCHTONE 602–244–6609
INTERNET: http://Design–NET.com

JAPAN: Nippon Motorola Ltd.; Tatsumi–SPD–JLDC, 6F Seibu–Butsuryu–Center, 3–14–2 Tatsumi Koto–Ku, Tokyo 135, Japan. 03–81–3521–8315

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