MBRA130LT3

Surface Mount Schottky Power Rectifier

SMA 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, 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: Cathode Lead Indicated by Either Notch in Plastic Body or Polarity Band
- Available in 12 mm Tape, 5000 Units per 13 inch Reel, Add “T3” Suffix to Part Number
- Device Meets MSL1 Requirements
- ESD Ratings: Machine Model, C (>400 V)
  Human Body Model, 3B (>8000 V)
- Marking: B1L3

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 Temperature	T_{stg}	−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

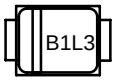
ON Semiconductor®

http://onsemi.com

SCHOTTKY BARRIER RECTIFIER 1.0 AMPERES 30 VOLTS

SMA
CASE 403D
PLASTIC

MARKING DIAGRAM



B1L3 = Device Code

ORDERING INFORMATION

Device	Package	Shipping†
MBRA130LT3	SMA	5000/Tape & Reel

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

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance — Junction−to−Lead (Note 1.) Thermal Resistance — Junction−to−Ambient (Note 1.)	$R_{\theta JL}$ $R_{\theta JA}$	35 86	°C/W

ELECTRICAL CHARACTERISTICS

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

1. Mounted on 2″ Square PC Board with 1″ Square Total Pad Size, PC Board FR4.
2. Pulse Test: Pulse Width ≤ 250 μs, Duty Cycle ≤ 2.0%.

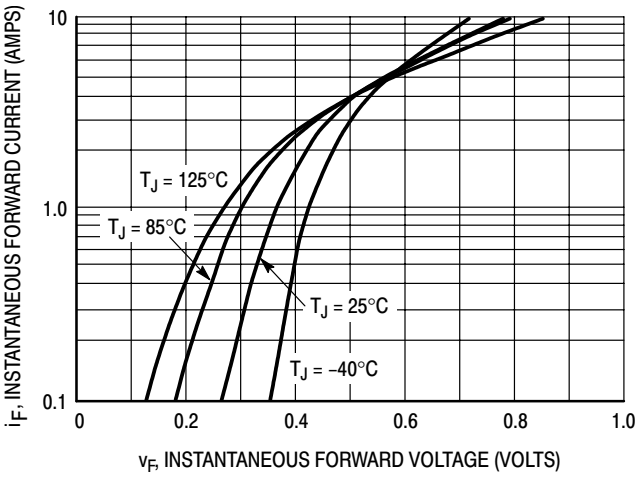


Figure 1. Typical Forward Voltage

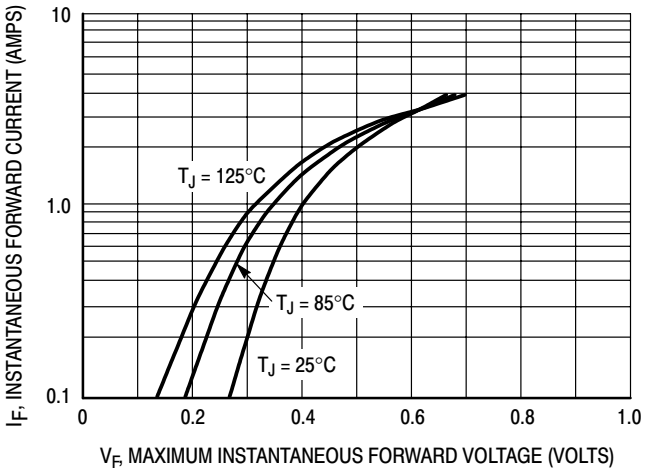


Figure 2. Maximum Forward Voltage

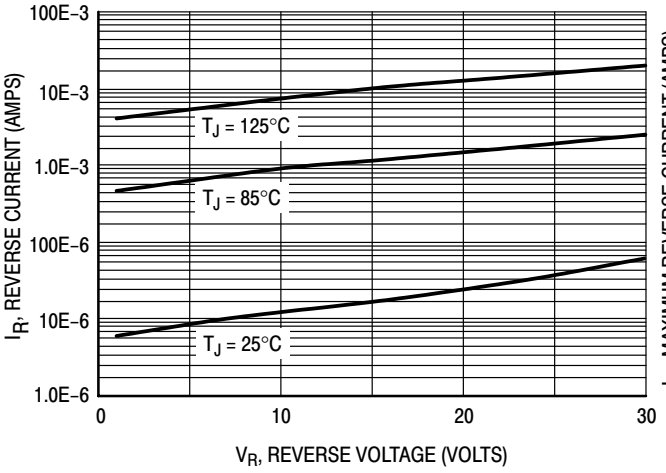


Figure 3. Typical Reverse Current

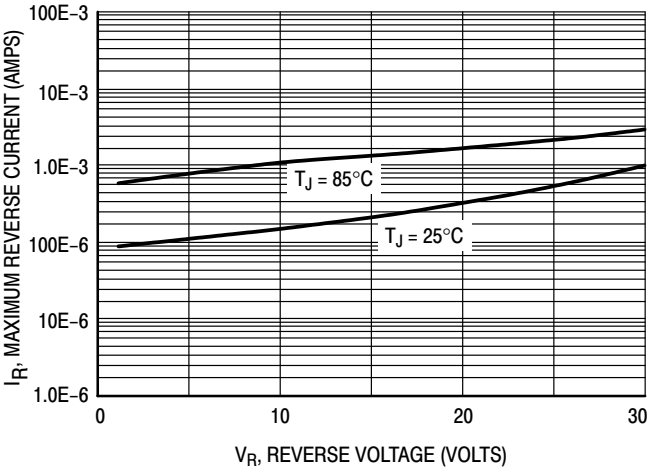


Figure 4. Maximum Reverse Current

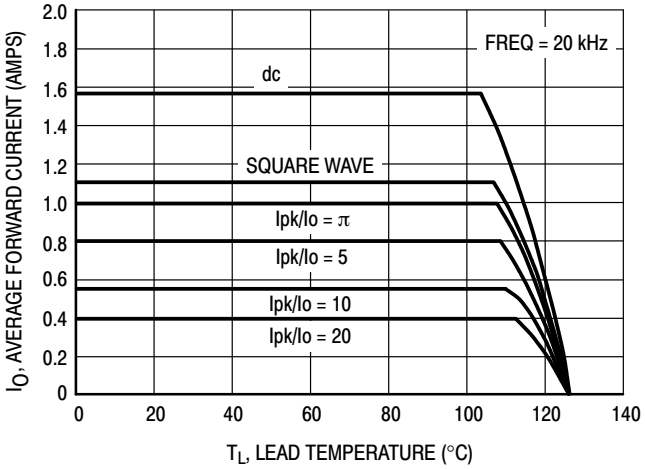


Figure 5. Current Derating

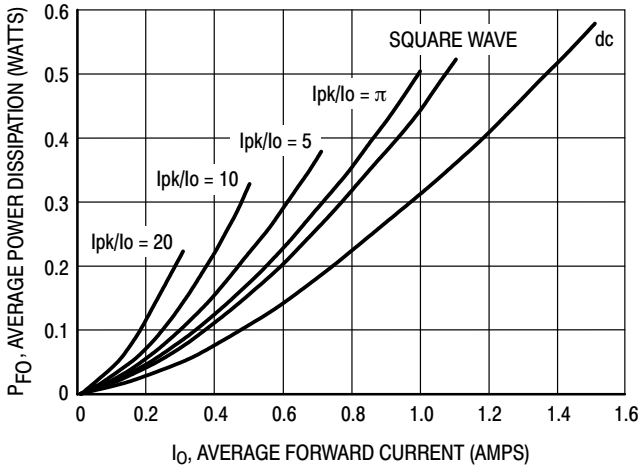


Figure 6. Forward Power Dissipation

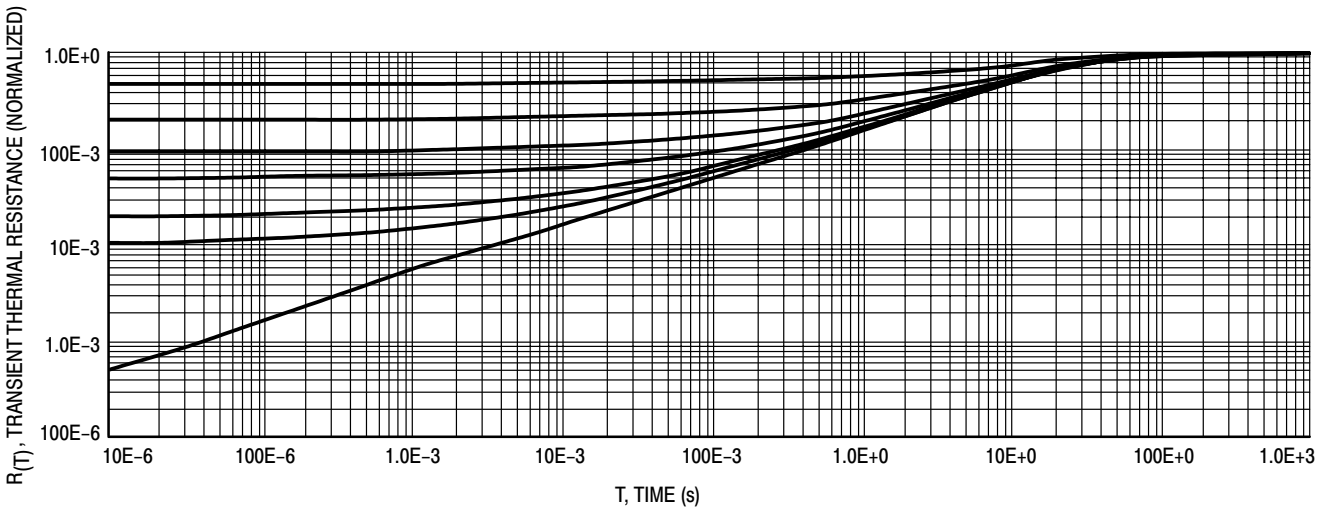


Figure 7. Thermal Response

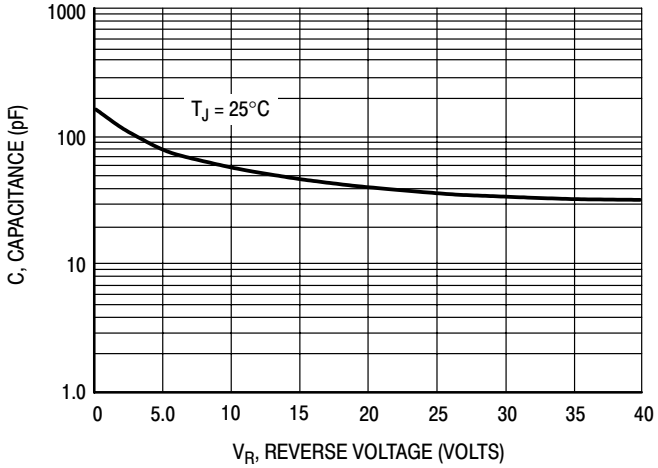
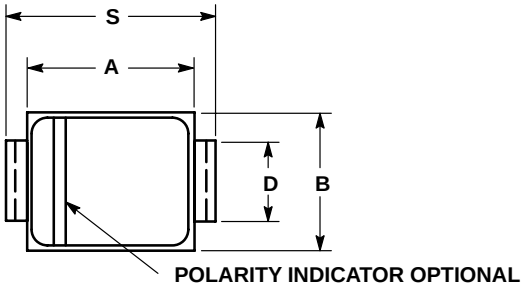


Figure 8. Capacitance

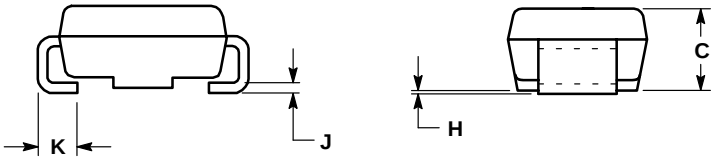
PACKAGE DIMENSIONS

SMA
CASE 403D−02
ISSUE A

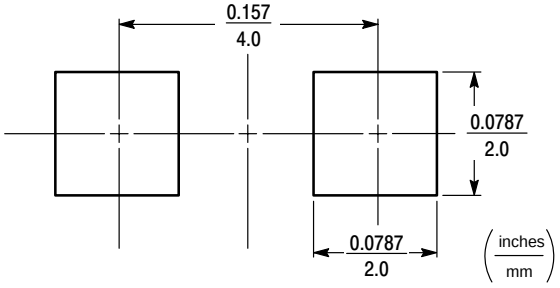


NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. 403D−01 OBSOLETE, NEW STANDARD IS 403D−02.

	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	0.095	1.91	2.41
D	0.050	0.064	1.27	1.63
H	0.002	0.006	0.05	0.15
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



SOLDERING FOOTPRINT*



SMA 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.

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
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MBRA130LT3/D