MBRS320T3, MBRS330T3, MBRS340T3

Preferred Devices

Surface Mount Schottky Power Rectifier

. . . employing the Schottky Barrier principle in a large area metal−to−silicon power diode. State−of−the−art geometry features epitaxial construction with oxide passivation and metal overlay contact. Ideally suited for low voltage, high frequency rectification, or as free wheeling and polarity protection diodes, in surface mount applications where compact size and weight are critical to the system.

- Small Compact Surface Mountable Package with J−Bend Leads
- Rectangular Package for Automated Handling
- Highly Stable Oxide Passivated Junction
- Very Low Forward Voltage Drop (0.5 Volts Max @ 3.0 A, T_J = 25°C)
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection
- Pb−Free Packages are Available

Mechanical Characteristics:

- Case: Epoxy, Molded, Epoxy Meets UL 94, V−0
- Weight: 217 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
- Shipped in 16 mm Tape and Reel, 2500 units per reel
- Polarity: Notch in Plastic Body Indicates Cathode Lead
- Device Meets MSL 1 Requirements
- ESD Ratings: Machine Model, C (> 400 V)
  Human Body Model, 3B (> 8000 V)
- Marking: B32, B33, B34

MAXIMUM RATINGS

Please See the Table on the Following Page

ON Semiconductor®

http://onsemi.com

SCHOTTKY BARRIER RECTIFIERS 3.0 AMPERES 20, 30, 40 VOLTS

SMC CASE 403 PLASTIC

MARKING DIAGRAM

B3x = Device Code
x = 2, 3 or 4
Y = Year
WW = Work Week
▪ = Pb−Free Package

ORDERING INFORMATION

Device	Package	Shipping†
MBRS320T3	SMC	2500/Tape & Reel
MBRS320T3G	SMC (Pb−Free)	2500/Tape & Reel
MBRS330T3	SMC	2500/Tape & Reel
MBRS330T3G	SMC (Pb−Free)	2500/Tape & Reel
MBRS340T3	SMC	2500/Tape & Reel
MBRS340T3G	SMC (Pb−Free)	2500/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.

Preferred devices are recommended choices for future use and best overall value.

MAXIMUM RATINGS

Rating	Symbol	MBRS320T3	MBRS330T3	MBRS340T3	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	20	30	40	Volts
Average Rectified Forward Current	$I_{F(AV)}$	3.0 @ T_L = 110°C 4.0 @ T_L = 105°C			Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	I_{FSM}	80			Amps
Operating Junction Temperature	T_J	− 65 to +125			°C

THERMAL CHARACTERISTICS

Thermal Resistance — Junction to Lead	$R_{\theta JL}$	11	°C/W

ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1) (i_F = 3.0 A, T_J = 25°C)	V_F	0.50	Volts
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, T_J = 25°C) (Rated dc Voltage, T_J = 100°C)	i_R	 2.0 20	mA

1. Pulse Test: Pulse Width = 300 μs, Duty Cycle ≤ 2.0%.

TYPICAL ELECTRICAL CHARACTERISTICS

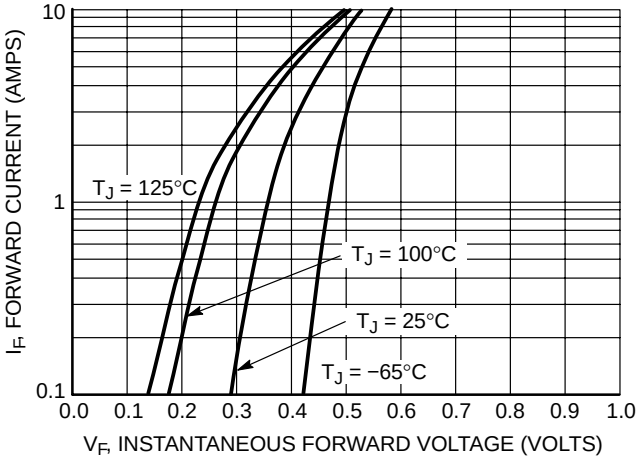


Figure 1. Typical Forward Voltage

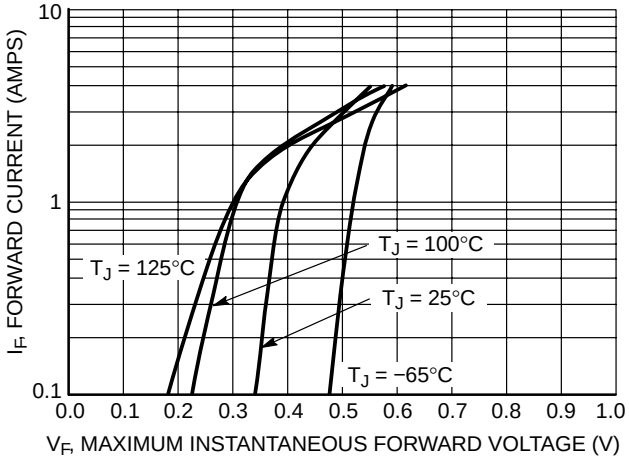


Figure 2. Maximum Forward Voltage

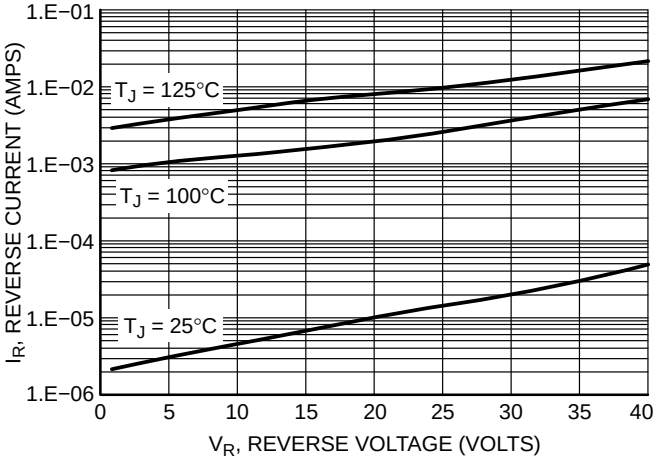


Figure 3. Typical Reverse Current

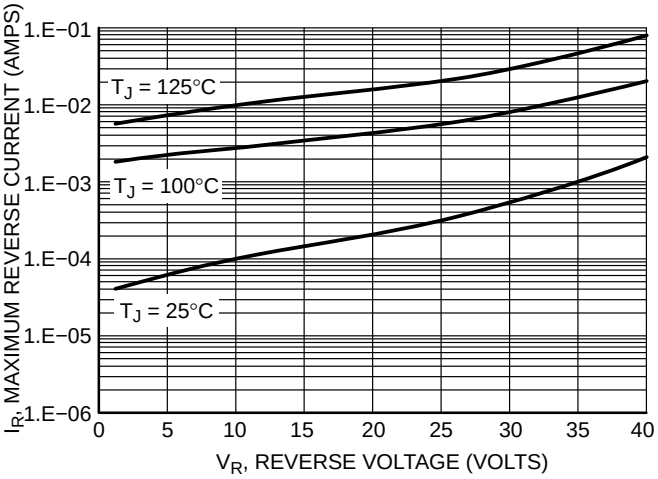


Figure 4. Maximum Reverse Current

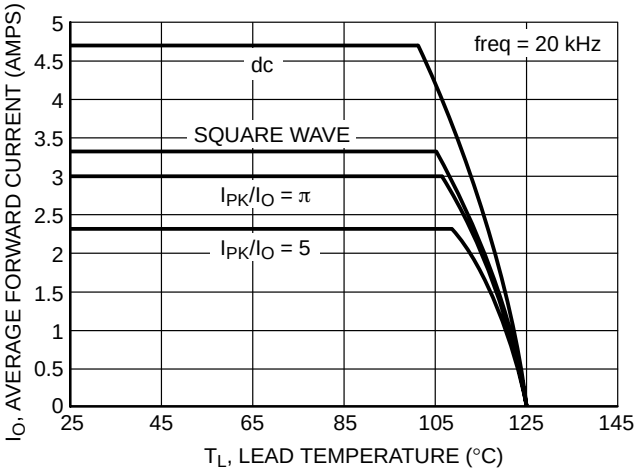


Figure 5. Current Derating

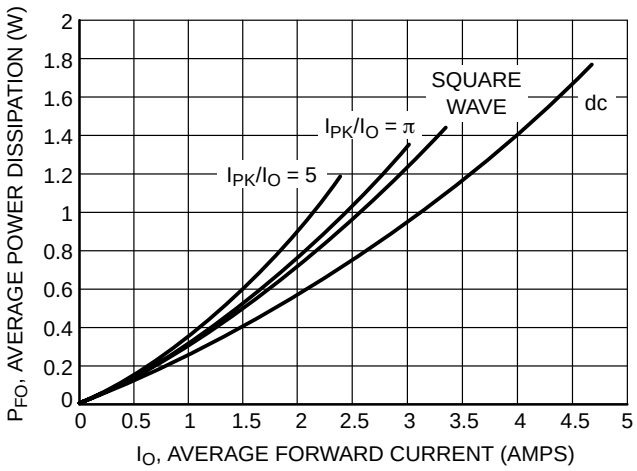


Figure 6. Forward Power Dissipation

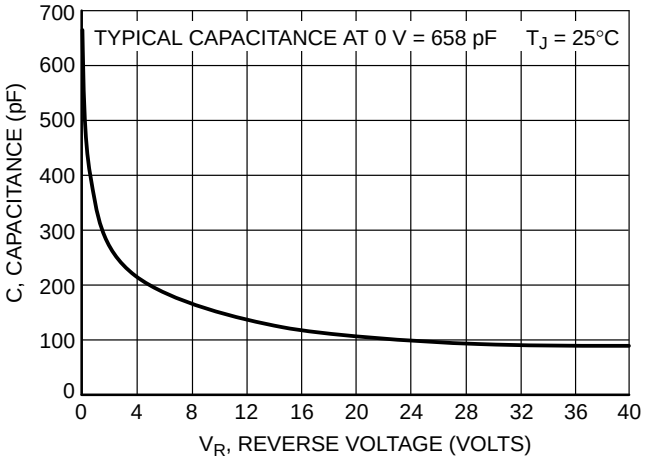
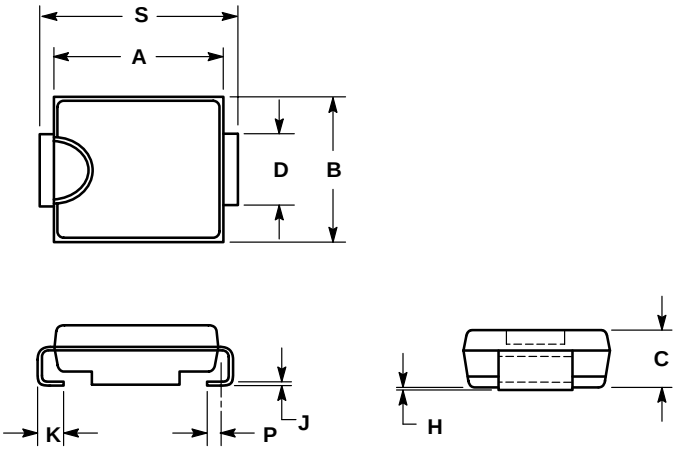


Figure 7. Typical Capacitance

PACKAGE DIMENSIONS

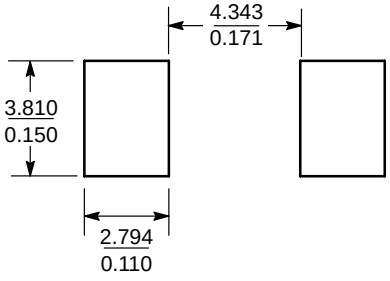
SMC
PLASTIC PACKAGE
CASE 403−03
ISSUE D



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.
4. 403−01 THRU −02 OBSOLETE, NEW STANDARD 403−03.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.260	0.280	6.60	7.11
B	0.220	0.240	5.59	6.10
C	0.075	0.095	1.90	2.41
D	0.115	0.121	2.92	3.07
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	0.305	0.320	7.75	8.13

SOLDERING FOOTPRINT*



SCALE 4:1 $\left(\frac{\text{mm}}{\text{inches}}\right)$

*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
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: orderlit@onsemi.com

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

Japan: ON Semiconductor, Japan Customer Focus Center
2−9−1 Kamimeguro, Meguro−ku, Tokyo, Japan 153−0051
Phone: 81−3−5773−3850

ON Semiconductor Website: http://onsemi.com

Order Literature: http://www.onsemi.com/litorder

For additional information, please contact your local Sales Representative.

MBRS340T3/D