MBRS3201T3

200V, 3A Schottky Fast Soft-Recovery Power Rectifier

SMC Power Surface Mount Package

Features

- Lower Forward Voltage than any Ultrafast Rectifier: $V_F < 0.59$ V at 150°C
- Fast Switching Speed: Reverse Recovery Time (t_{RR}) < 35 ns
- Soft Recovery Characteristics: Softness Factor (t_b/t_a) ≥ 1
- Highly Stable Over Temperature

Benefits

- Significantly Reduced EMI
- Eliminates the Need of Snubber Circuits
- Low Switching and Heat Losses
- Improved Thermal Management

Applications

- Engine and Convenience Control Systems
- Motor Controls
- Battery Chargers and Switching Power Supplies

Mechanical Characteristics

- Small Compact Surface Mount Package with J–Bend Leads
- Rectangular Package for Automated Handling
- 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 Maximum for 10 Seconds
- Polarity: Notch in Plastic Body Indicates Cathode Lead

MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	200	V
Average Rectified Forward Current (Rated V_R, T_C = TBD)	$I_{F(AV)}$	3	A
Nonrepetitive Peak Surge Current	I_{FSM}	100	A
Operating Junction Temperature	T_J	−55 to +150	°C

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

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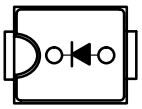
SCHOTTKY RECTIFIER
3 AMPS, 200 VOLTS



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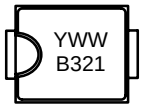
CASE 403

MARKING DIAGRAM



B321 = Specific Device Code
Y = Year
WW = Work Week

ORDERING INFORMATION

Device	Package	Shipping
MBRS3201T3	SMC	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.

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance – Junction−to−Lead	$R_{\theta JL}$	12	°C/W
Thermal Resistance – Junction−to−Ambient	$R_{\theta JA}$	60	°C/W

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Maximum Instantaneous Forward Voltage (I_F = 3 A, T_J = 25°C) (I_F = 3 A, T_J = 150°C)	V_F	 0.84 0.59	V
Maximum Instantaneous Reverse Current (Rated V_R) (Rated DC Voltage, T_J = 25°C) (Rated DC Voltage, T_J = 150°C)	I_R	 5 5	 μA mA
Maximum Reverse Recovery Time (I_F = 1 A, di/dt = 100 A/us, V_R = 30 V)	t_{rr}	35	ns

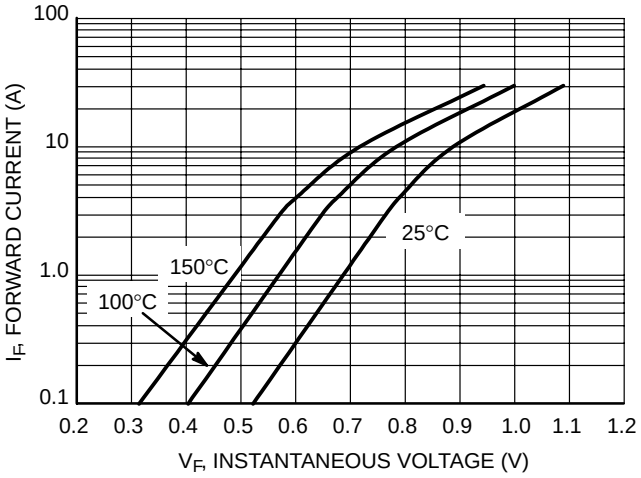


Figure 1. Typical Forward Voltage

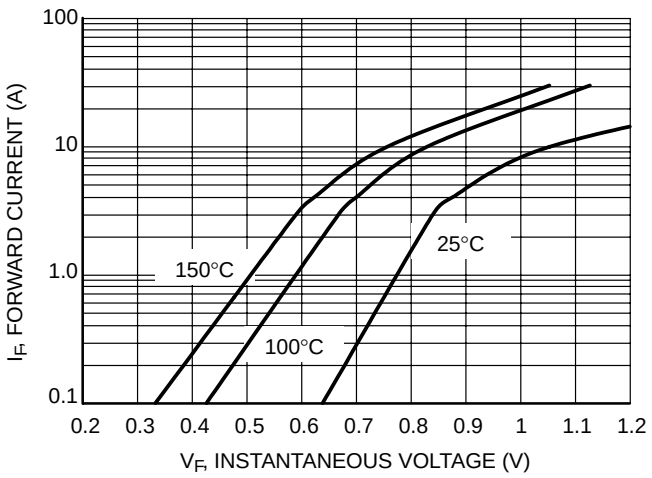


Figure 2. Maximum Forward Voltage

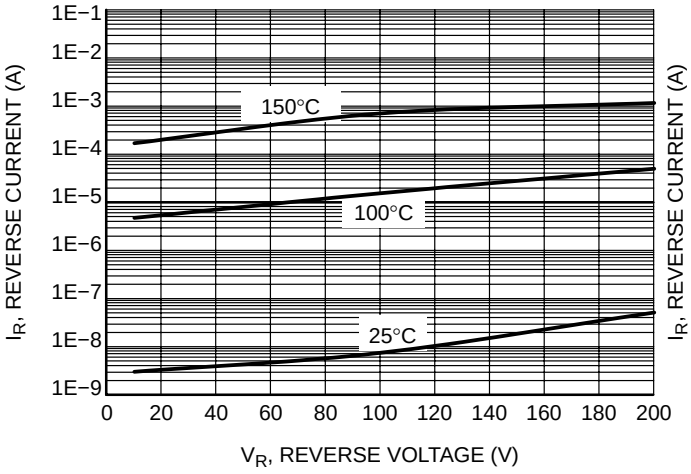


Figure 3. Typical Reverse Voltage

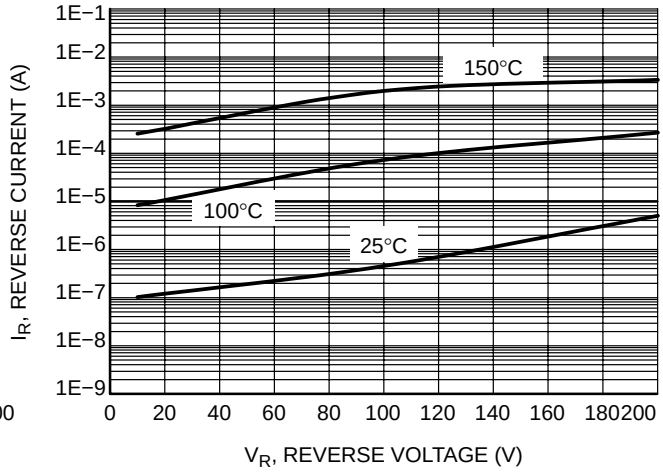


Figure 4. Maximum Reverse Voltage

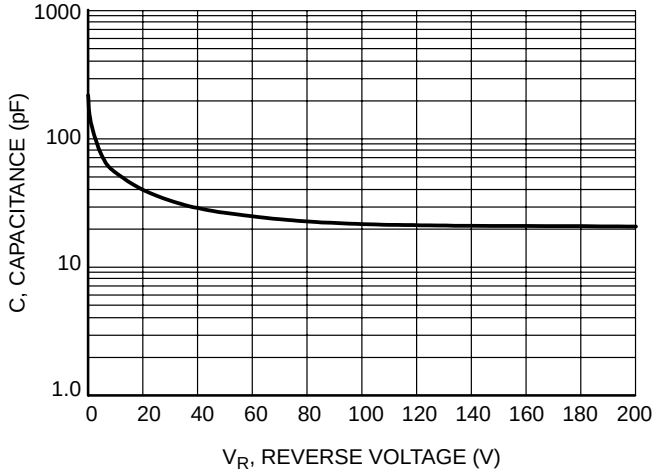


Figure 5. Typical Capacitance

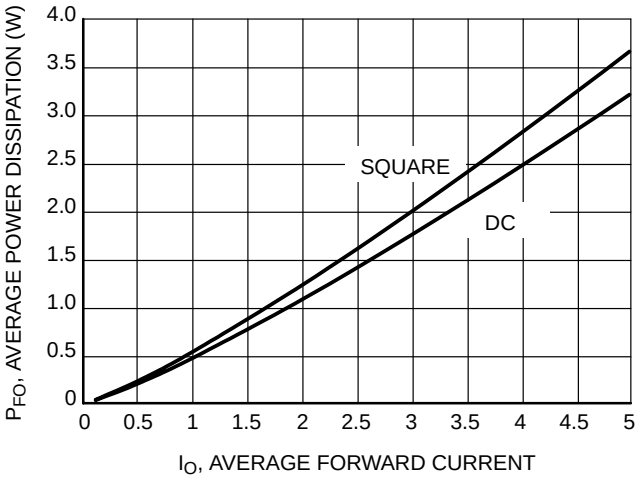


Figure 6. Power Dissipation

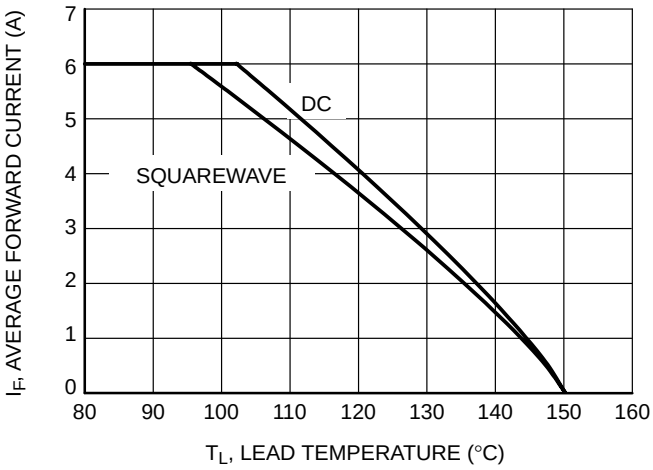


Figure 7. Derating Curve

PACKAGE DIMENSIONS

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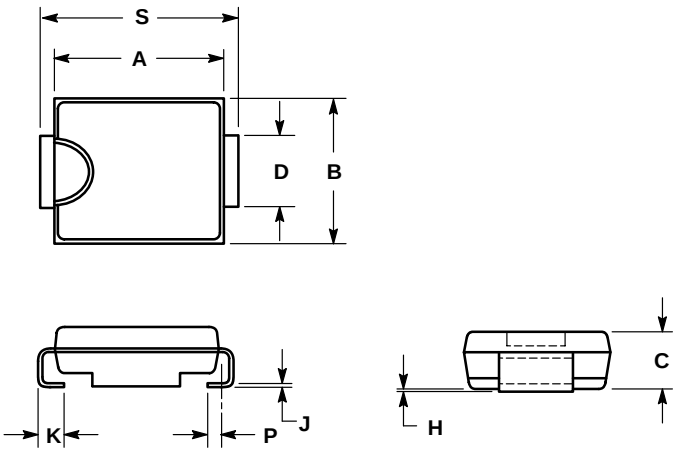
ISSUE D



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

PUBLICATION ORDERING INFORMATION

LITERATURE FULFILLMENT:
Literature Distribution Center for ON Semiconductor
P.O. Box 61312, Phoenix, Arizona 85082−1312 USA
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