

# MBRS3100T3

Preferred Device

## 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
- Excellent Ability to Withstand Reverse Avalanche Energy Transients
- Guardring for Stress Protection

### Mechanical Characteristics:

- Case: Epoxy, Molded
- 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
- ESD Ratings: Machine Model = C  
Human Body Model = 3B
- Marking: B310

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	100	Volts
Average Rectified Forward Current (At Rated $V_R$ , $T_L = 100^\circ\text{C}$ )	$I_{F(AV)}$	3.0	Amps
Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz)	$I_{FSM}$	130	Amps
Operating Junction Temperature Range	$T_J$	-65 to +150	°C

### THERMAL CHARACTERISTICS

Thermal Resistance – Junction to Lead	$R_{\theta JL}$	11	°C/W
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ON Semiconductor™

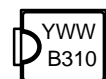
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**SCHOTTKY BARRIER  
RECTIFIERS  
3.0 AMPERES  
100 VOLTS**



SMC  
CASE 403  
PLASTIC

### MARKING DIAGRAM



Y = Year  
WW = Work Week  
B310 = Device Code

### ORDERING INFORMATION

Device	Package	Shipping
MBRS3100T3	SMC	2500/Tape & Reel

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

# MBRS3100T3

## ELECTRICAL CHARACTERISTICS

Maximum Instantaneous Forward Voltage (Note 1) ( $i_F = 3.0\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $i_F = 6.0\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $i_F = 3.0\text{ A}$ , $T_J = 125^\circ\text{C}$ ) ( $i_F = 6.0\text{ A}$ , $T_J = 125^\circ\text{C}$ )	$V_F$	0.79 0.90 0.62 0.70	Volts
Maximum Instantaneous Reverse Current (Note 1) (Rated dc Voltage, $T_J = 25^\circ\text{C}$ ) (Rated dc Voltage, $T_J = 125^\circ\text{C}$ )	$i_R$	0.05 5.0	mA

1. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

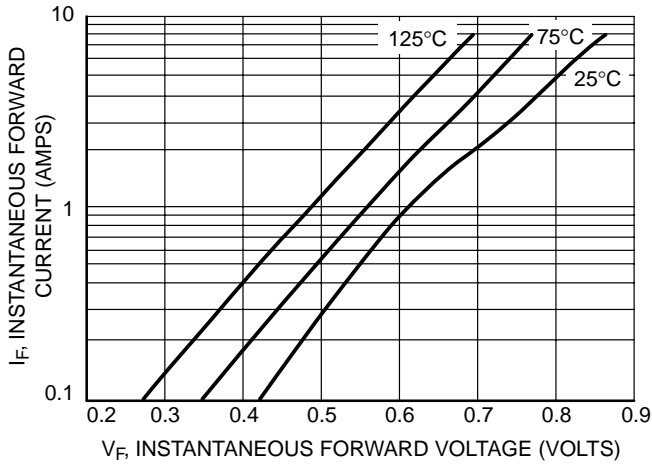


Figure 1. Typical Forward Voltage

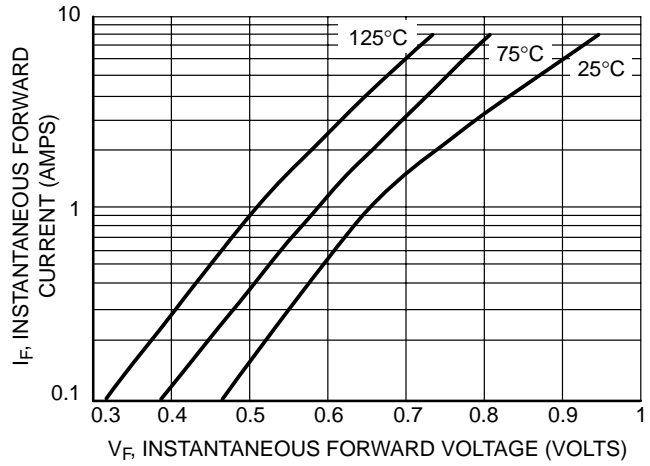


Figure 2. Maximum Forward Voltage

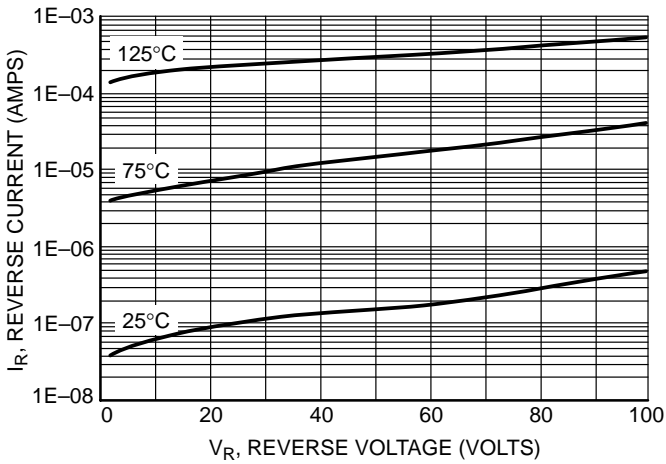


Figure 3. Typical Reverse Current

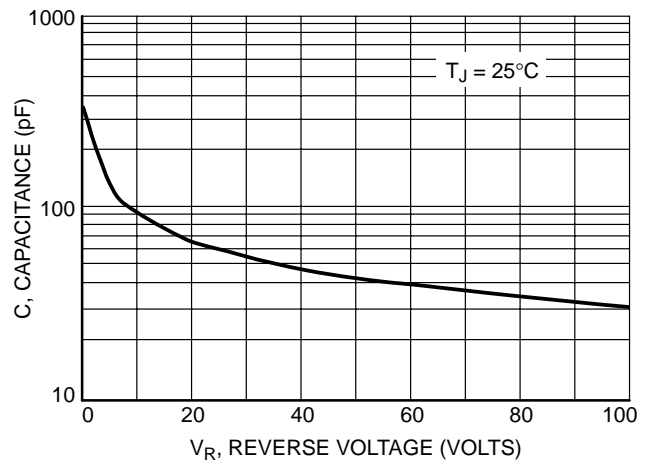
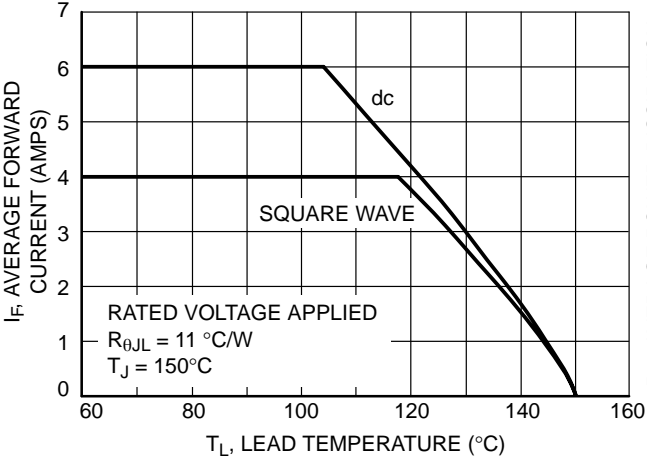
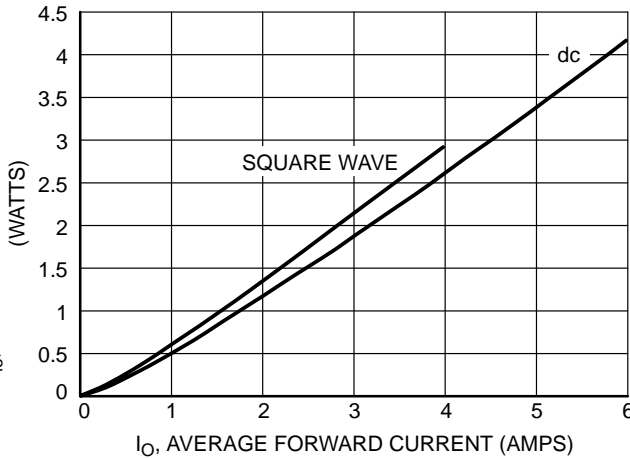


Figure 4. Typical Capacitance

**MBRS3100T3**



**Figure 5. Current Derating - Lead**

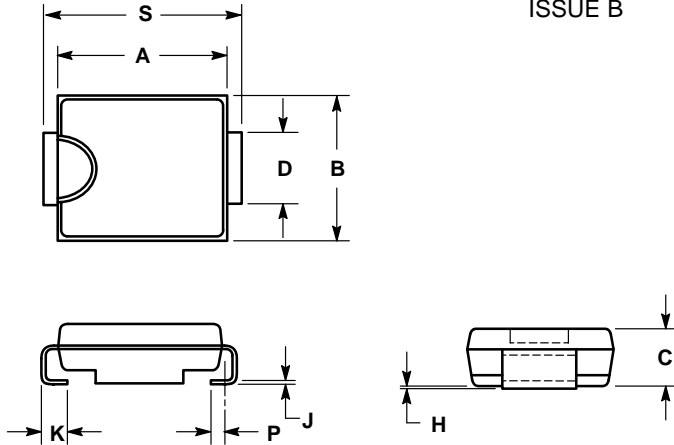


**Figure 6. Forward Power Dissipation**

# MBRS3100T3


## PACKAGE DIMENSIONS

SMC  
PLASTIC PACKAGE  
CASE 403-03  
ISSUE B



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
  2. CONTROLLING DIMENSION: INCH.
  3. D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P.

DIM	INCHES		MILLIMETERS	
	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

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