



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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MBRS3100P

Surface Mount Schottky Power Rectifier

This device employs 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.

Features

- 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
- Guard-Ring for Stress Protection
- These are Pb-Free Packages

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
- Cathode Polarity Band
- ESD Ratings:
 - ◆ Machine Model = C
 - ◆ Human Body Model = 3B



ON Semiconductor®

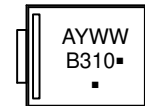
www.onsemi.com

**SCHOTTKY BARRIER
RECTIFIERS
3.0 AMPERES, 100 VOLTS**



**SMC
CASE 403AC**

MARKING DIAGRAM



B310 = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
▪ = Pb-Free Package

(Note: Microdot may be in either location)

ORDERING INFORMATION

| Device | Package | Shipping† |
|--------------|------------------|------------------------|
| MBRS3100PT3G | SMC (Pb-Free) | 2,500 / Tape & Reel |

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

MBRS3100P

MAXIMUM RATINGS

| Rating | Symbol | Value | Unit |
|--|---------------------------------|--------------|------------------|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 100 | V |
| Average Rectified Forward Current (At Rated V_R , $T_L = 100^\circ\text{C}$) | $I_{F(AV)}$ | 3.0 | A |
| Nonrepetitive Peak Surge Current (Surge applied at rated load conditions halfwave, single phase, 60 Hz) | I_{FSM} | 130 | A |
| Operating Junction Temperature Range (Note 1) | T_J | - 65 to +175 | $^\circ\text{C}$ |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. The heat generated must be less than the thermal conductivity from Junction-to-Ambient: $dP_D/dT_J < 1/R_{\theta JA}$.

THERMAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|--------------------------------------|-----------------|-------|--------------------|
| Thermal Resistance, Junction-to-Lead | $R_{\theta JL}$ | 11 | $^\circ\text{C/W}$ |

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Value | Unit |
|--|--------|------------------------------|------|
| Maximum Instantaneous Forward Voltage (Note 2) ($i_F = 3.0\text{ A}$, $T_J = 25^\circ\text{C}$) ($i_F = 6.0\text{ A}$, $T_J = 25^\circ\text{C}$) ($i_F = 3.0\text{ A}$, $T_J = 125^\circ\text{C}$) ($i_F = 6.0\text{ A}$, $T_J = 125^\circ\text{C}$) | V_F | 0.79 0.90 0.62 0.70 | V |
| Maximum Instantaneous Reverse Current (Note 2) (Rated dc Voltage, $T_J = 25^\circ\text{C}$) (Rated dc Voltage, $T_J = 125^\circ\text{C}$) | i_R | 0.2 5.0 | mA |

2. Pulse Test: Pulse Width = 300 μs , Duty Cycle $\leq 2.0\%$.

MBRS3100P

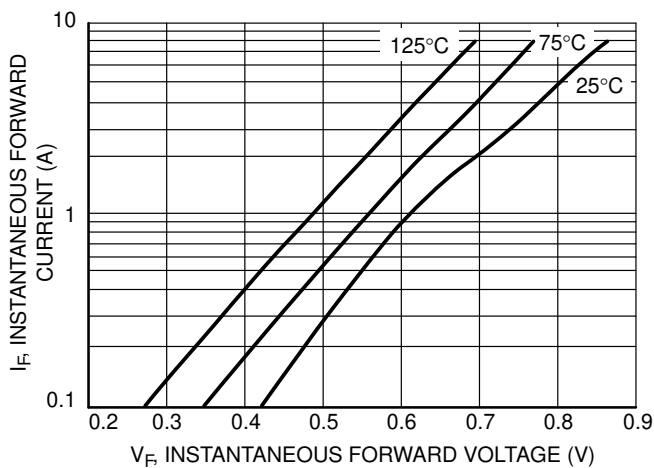


Figure 1. Typical Forward Voltage

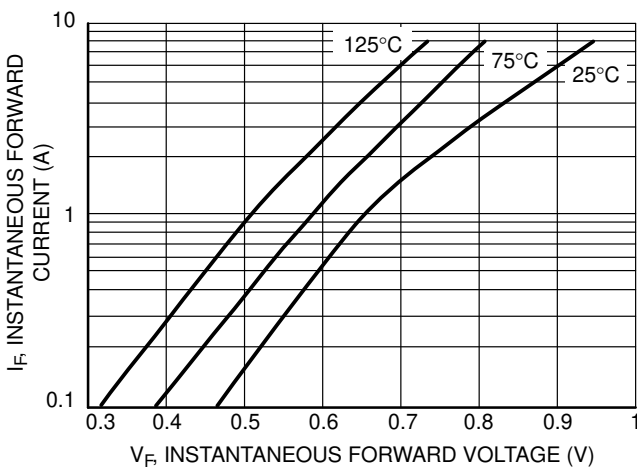


Figure 2. Maximum Forward Voltage

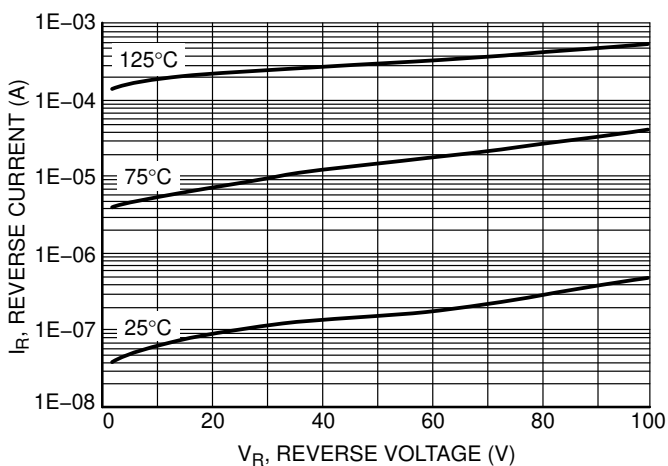


Figure 3. Typical Reverse Current

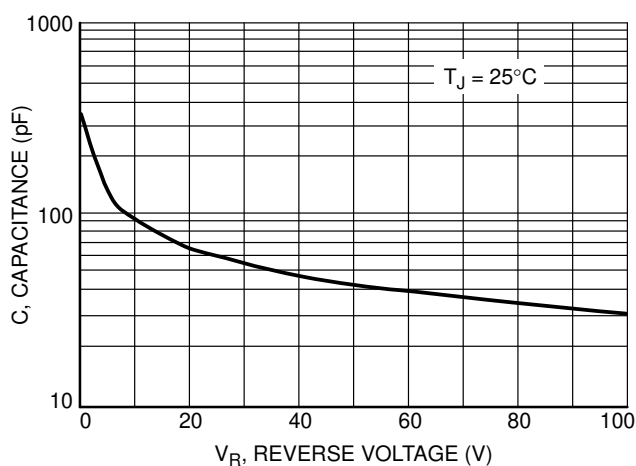


Figure 4. Typical Capacitance

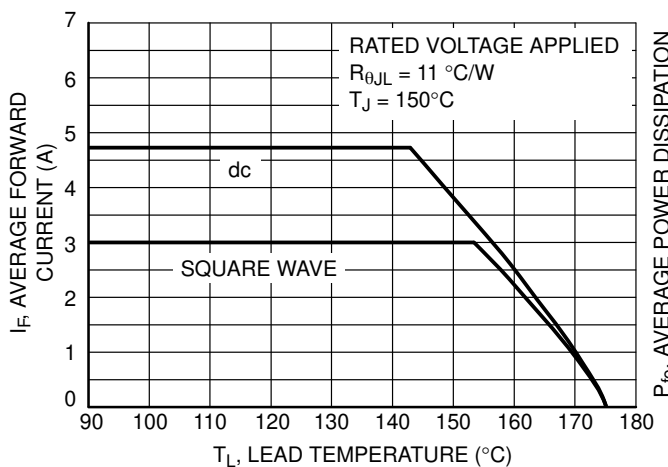


Figure 5. Current Derating - Lead

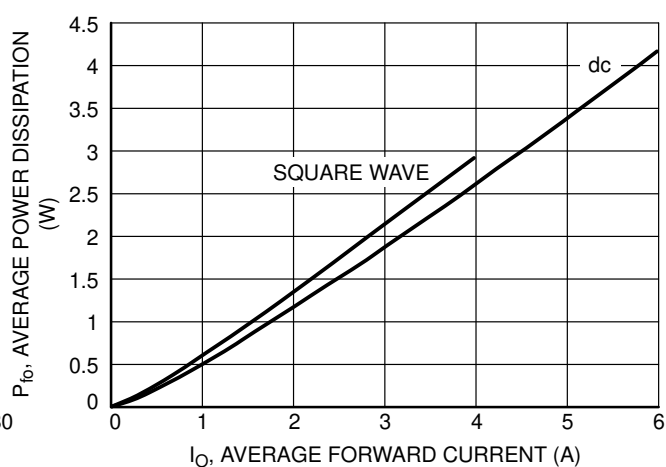
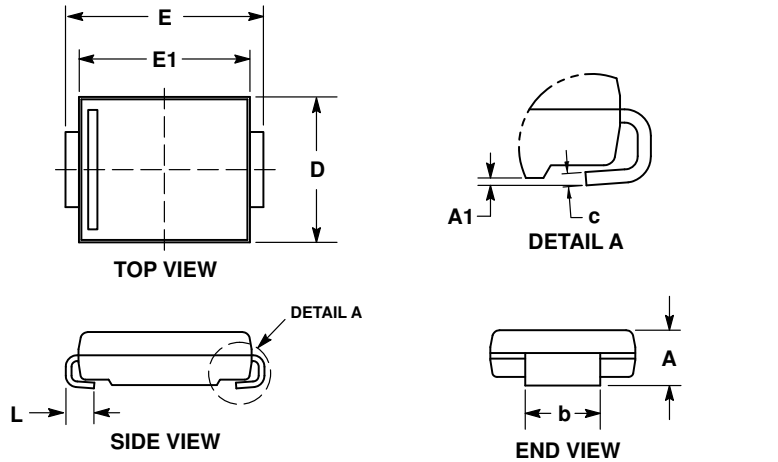


Figure 6. Forward Power Dissipation

MBRS3100P

PACKAGE DIMENSIONS

SMC 2-LEAD CASE 403AC ISSUE O

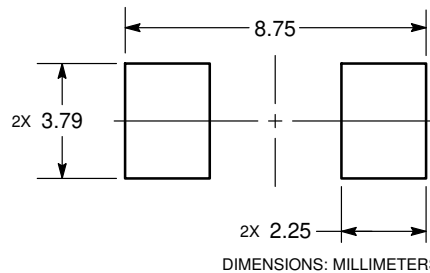


NOTES:


1. DIMENSIONING AND TOLERANCING PER ANME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH. MOLD FLASH SHALL NOT EXCEED 0.13 PER SIDE.
4. DIMENSIONS D AND E1 TO BE DETERMINED AT DATUM H.
5. DIMENSION b SHALL BE MEASURED WITHIN THE AREA DETERMINED BY DIMENSION L.

| DIM | MILLIMETERS | |
|-----|-------------|------|
| | MIN | MAX |
| A | 1.95 | 2.65 |
| A1 | 0.05 | 0.20 |
| b | 2.90 | 3.20 |
| c | 0.15 | 0.41 |
| D | 5.55 | 6.25 |
| E | 7.75 | 8.15 |
| E1 | 6.60 | 7.15 |
| L | 0.75 | 1.60 |

RECOMMENDED SOLDERING 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.

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