

# MBRS260T3

## Surface Mount Schottky Power Rectifier

### SMB 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, VO at 1/8"
- Weight: 95 mg (approximately)
- Cathode Polarity Band
- Lead and Mounting Surface Temperature for Soldering Purposes: 260°C Max. for 10 Seconds
- Available in 12 mm Tape, 2500 Units per 13" Reel, Add "T3" Suffix to Part Number
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- ESD Ratings: Machine Model = C  
Human Body Model = 3B
- Marking: B26

#### MAXIMUM RATINGS

| Rating                                                                                                            | Symbol                          | Value       | Unit             |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                            | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 60          | V                |
| Average Rectified Forward Current<br>(At Rated $V_R$ , $T_J = 95^\circ\text{C}$ )                                 | $I_O$                           | 2.0         | A                |
| Non-Repetitive Peak Surge Current<br>(Surge Applied at Rated Load<br>Conditions Halfwave, Single<br>Phase, 60 Hz) | $I_{FSM}$                       | 60          | A                |
| Storage/Operating Case<br>Temperature                                                                             | $T_{stg}$ , $T_C$               | -55 to +150 | $^\circ\text{C}$ |
| Operating Junction Temperature                                                                                    | $T_J$                           | -55 to +125 | $^\circ\text{C}$ |
| Voltage Rate of Change<br>(Rated $V_R$ , $T_J = 25^\circ\text{C}$ )                                               | $dv/dt$                         | 10,000      | V/ $\mu\text{s}$ |



ON Semiconductor®

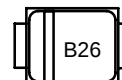
<http://onsemi.com>

**SCHOTTKY BARRIER  
RECTIFIER  
2.0 AMPERES  
60 VOLTS**



**SMB  
CASE 403A  
PLASTIC**

#### MARKING DIAGRAM



B26 = Device Code

#### ORDERING INFORMATION

| Device    | Package | Shipping         |
|-----------|---------|------------------|
| MBRS260T3 | SMB     | 2500/Tape & Reel |

# MBRS260T3

## THERMAL CHARACTERISTICS

| Characteristic                                    | Symbol          | Value | Unit                 |
|---------------------------------------------------|-----------------|-------|----------------------|
| Thermal Resistance - Junction-to-Lead (Note 1)    | $R_{\theta JL}$ | 24    | $^{\circ}\text{C/W}$ |
| Thermal Resistance - Junction-to-Ambient (Note 2) | $R_{\theta JA}$ | 80    | $^{\circ}\text{C/W}$ |

## ELECTRICAL CHARACTERISTICS

|                                                                                                          |       |                            |                             |       |
|----------------------------------------------------------------------------------------------------------|-------|----------------------------|-----------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 3)<br>( $i_F = 1.0 \text{ A}$ )<br>( $i_F = 2.0 \text{ A}$ ) | $V_F$ | $T_J = 25^{\circ}\text{C}$ | $T_J = 125^{\circ}\text{C}$ | Volts |
|                                                                                                          |       | 0.51<br>0.63               | 0.475<br>0.55               |       |
| Maximum Instantaneous Reverse Current (Note 3)<br>( $V_R = 60 \text{ V}$ )                               | $I_R$ | $T_J = 25^{\circ}\text{C}$ | $T_J = 125^{\circ}\text{C}$ | mA    |
|                                                                                                          |       | 0.2                        | 10                          |       |

1. Mounted with minimum recommended pad size, PC Board FR4.
2. 1 inch square pad size (1 x 0.5 inch for each lead) on FR4 board.
3. Pulse Test: Pulse Width  $\leq 250 \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .

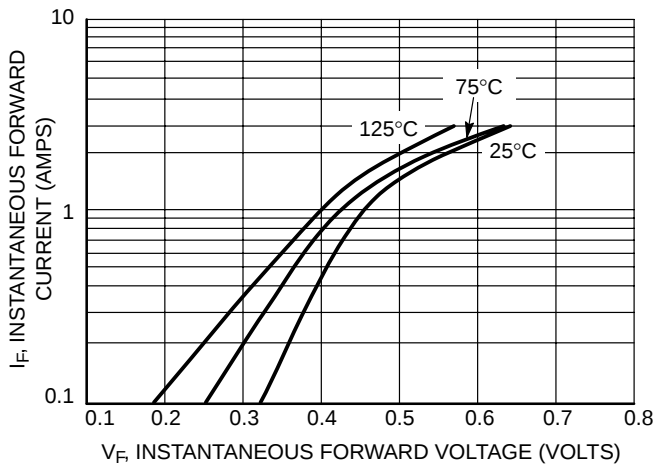


Figure 1. Typical Forward Voltage

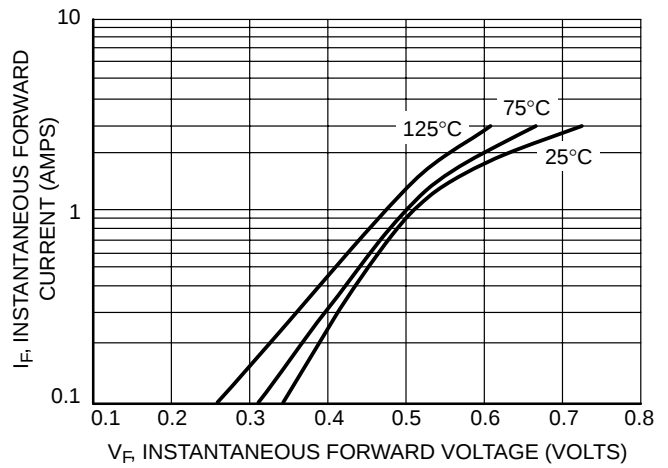


Figure 2. Maximum Forward Voltage

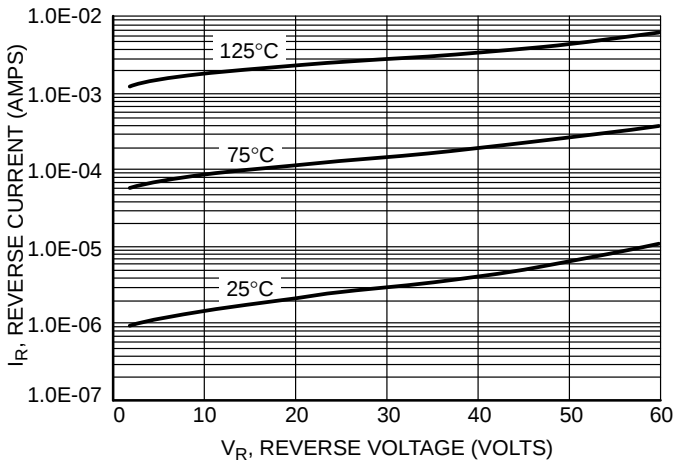


Figure 3. Typical Reverse Current

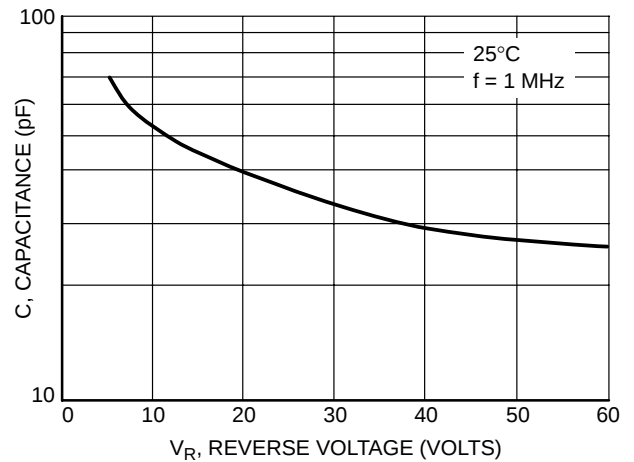


Figure 4. Typical Capacitance

# MBRS260T3

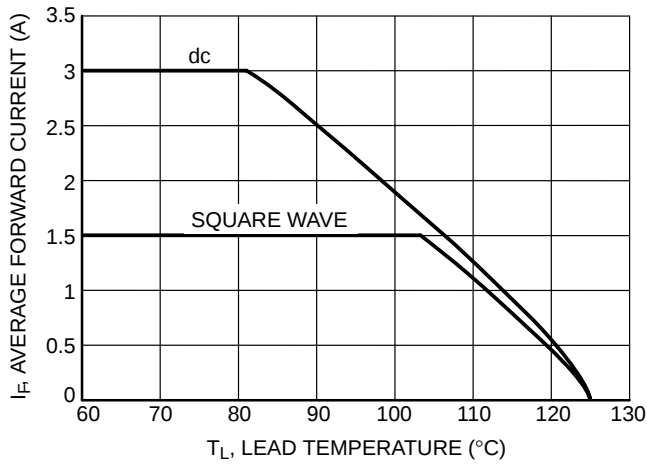


Figure 5. Current Derating - Junction to Lead

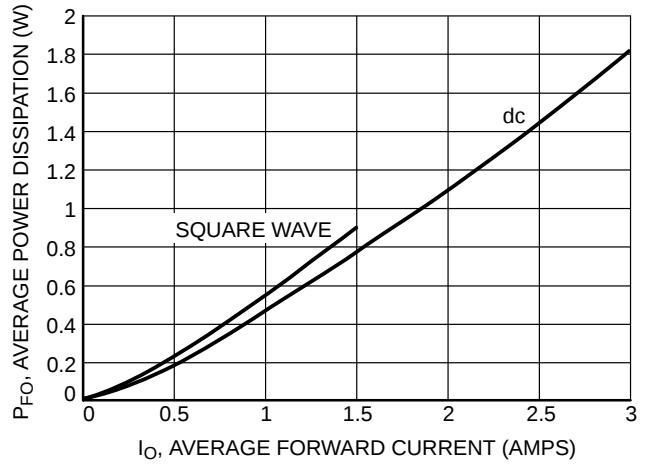


Figure 6. Forward Power Dissipation

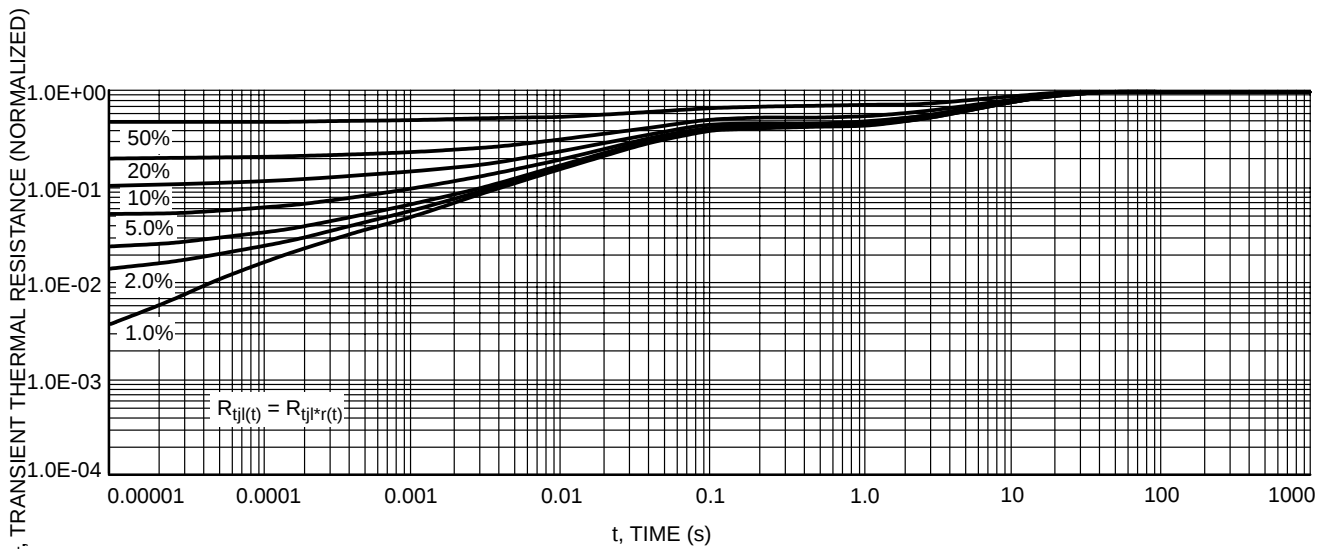


Figure 7. Thermal Response - Junction to Case

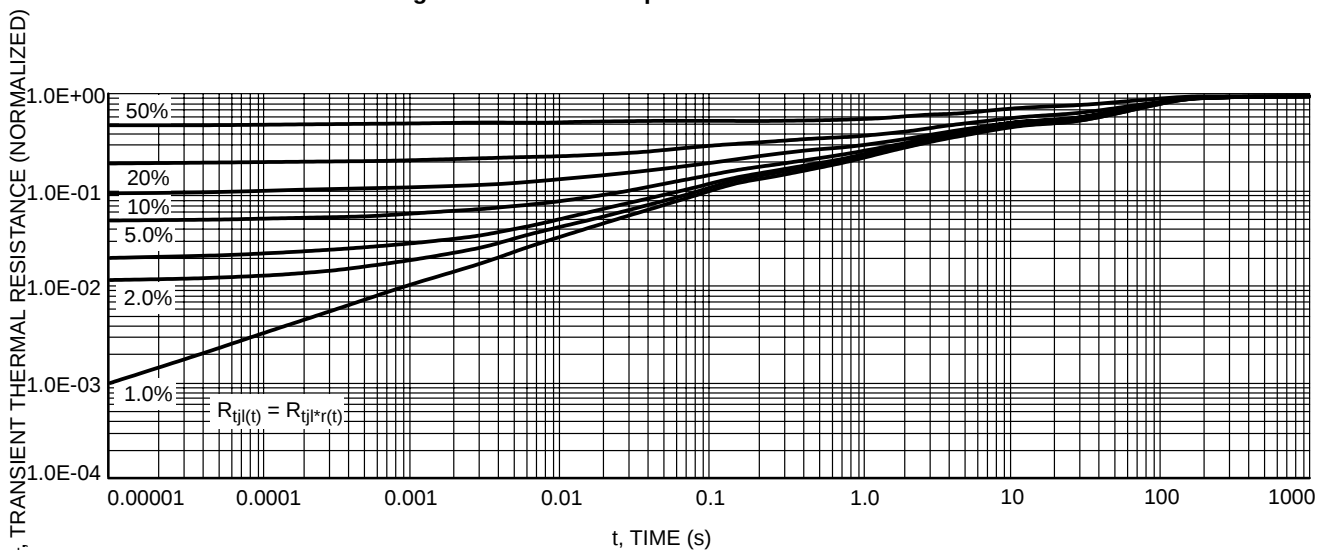
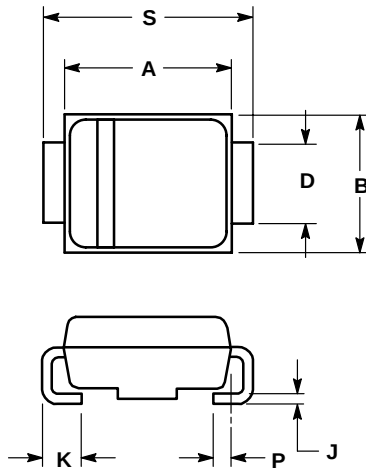


Figure 8. Thermal Response - Junction to Ambient

# MBRS260T3

## PACKAGE DIMENSIONS

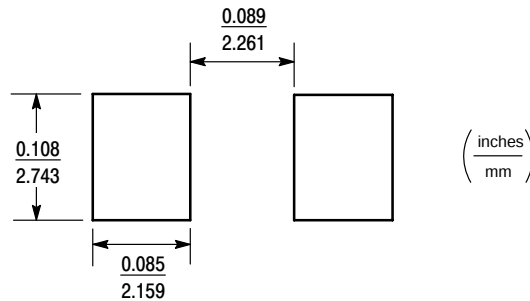
**SMB**  
PLASTIC PACKAGE  
CASE 403A-03  
ISSUE D



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

| DIM | INCHES    |        | MILLIMETERS |       |
|-----|-----------|--------|-------------|-------|
|     | MIN       | MAX    | MIN         | MAX   |
| A   | 0.160     | 0.180  | 4.06        | 4.57  |
| B   | 0.130     | 0.150  | 3.30        | 3.81  |
| C   | 0.075     | 0.095  | 1.90        | 2.41  |
| D   | 0.077     | 0.083  | 1.96        | 2.11  |
| 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   | 0.205     | 0.220  | 5.21        | 5.59  |

## MINIMUM SOLDER PAD SIZES



**ON Semiconductor** and  are registered trademarks of Semiconductor Components Industries, LLC (SCILLC). SCILLC reserves the right to make changes without further notice to any products herein. SCILLC makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does SCILLC assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. "Typical" parameters which may be provided in SCILLC data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. SCILLC does not convey any license under its patent rights nor the rights of others. SCILLC products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the SCILLC product could create a situation where personal injury or death may occur. Should Buyer purchase or use SCILLC products for any such unintended or unauthorized application, Buyer shall indemnify and hold SCILLC and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that SCILLC was negligent regarding the design or manufacture of the part. SCILLC is an Equal Opportunity/Affirmative Action Employer.

## 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:** ONlit@hibbertco.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

**Email:** r14525@onsemi.com

**ON Semiconductor Website:** <http://onsemi.com>

For additional information, please contact your local Sales Representative.