

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 Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 60 | V |
| Average Rectified Forward Current (At Rated V_R , $T_L = 95^\circ\text{C}$) | I_O | 2.0 | A |
| Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions Halfwave, Single Phase, 60 Hz) | I_{FSM} | 40 | A |
| Storage/Operating Case Temperature | T_{stg}, T_C | -55 to +150 | °C |
| Operating Junction Temperature | T_J | -55 to +125 | °C |
| Voltage Rate of Change (Rated V_R , $T_J = 25^\circ\text{C}$) | dv/dt | 10,000 | V/ μs |



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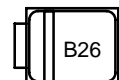
<http://onsemi.com>

**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 | $^{\circ}\text{C}/\text{W}$ |
| Thermal Resistance – Junction–to–Ambient (Note 2.) | $R_{\theta JA}$ | 80 | $^{\circ}\text{C}/\text{W}$ |

ELECTRICAL CHARACTERISTICS

| | | | | |
|---|-------|----------------------------|-----------------------------|-------|
| Maximum Instantaneous Forward Voltage (Note 3.) ($i_F = 1.0 \text{ A}$) ($i_F = 2.0 \text{ A}$) | V_F | $T_J = 25^{\circ}\text{C}$ | $T_J = 125^{\circ}\text{C}$ | Volts |
| | | 0.51 0.63 | 0.475 0.55 | |
| Maximum Instantaneous Reverse Current (Note 3.) ($V_R = 60 \text{ V}$) | 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 $\leq 2.0\%$.

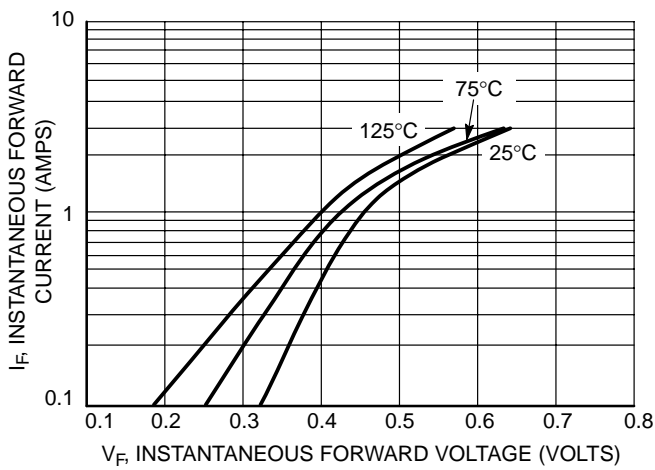


Figure 1. Typical Forward Voltage

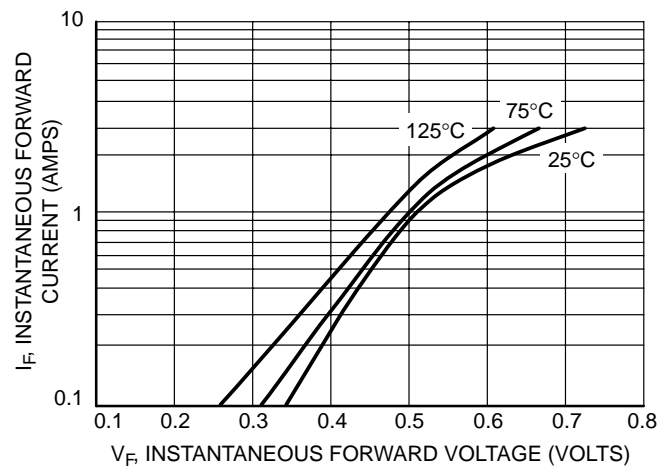


Figure 2. Maximum Forward Voltage

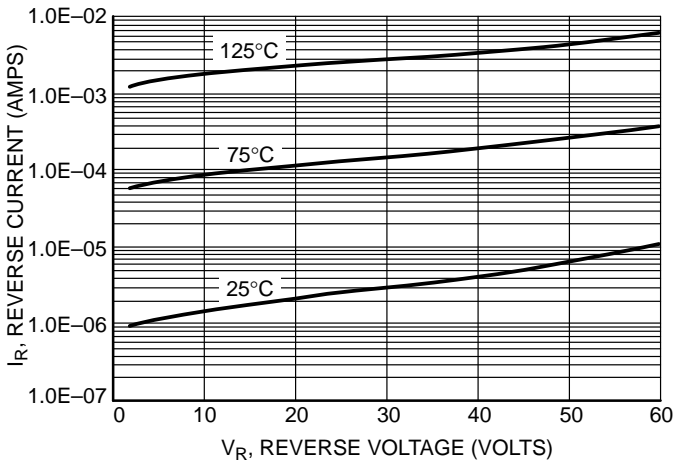


Figure 3. Typical Reverse Current

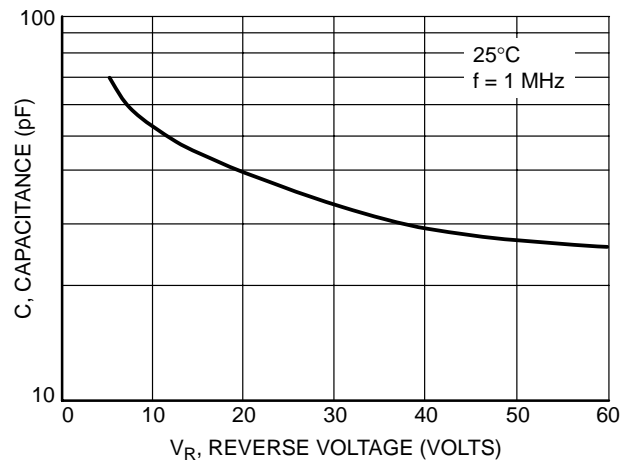


Figure 4. Typical Capacitance

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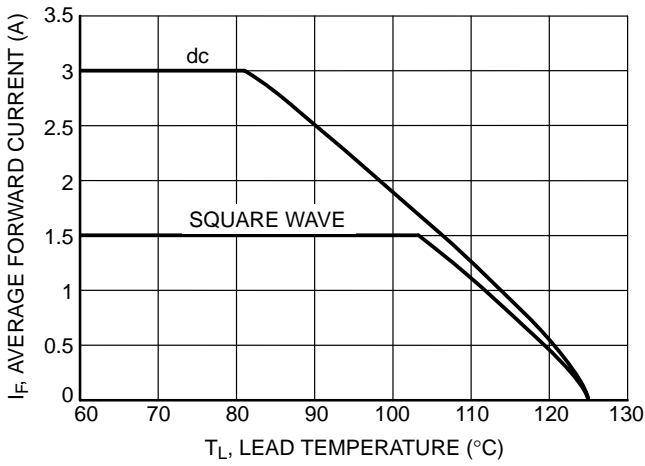


Figure 5. Current Derating – Junction to Lead

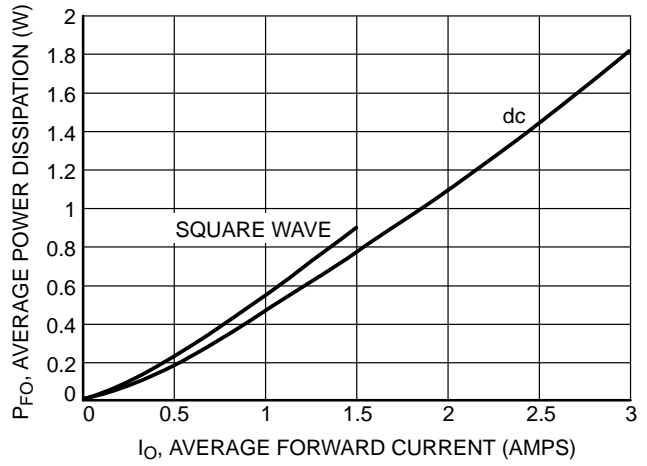


Figure 6. Forward Power Dissipation

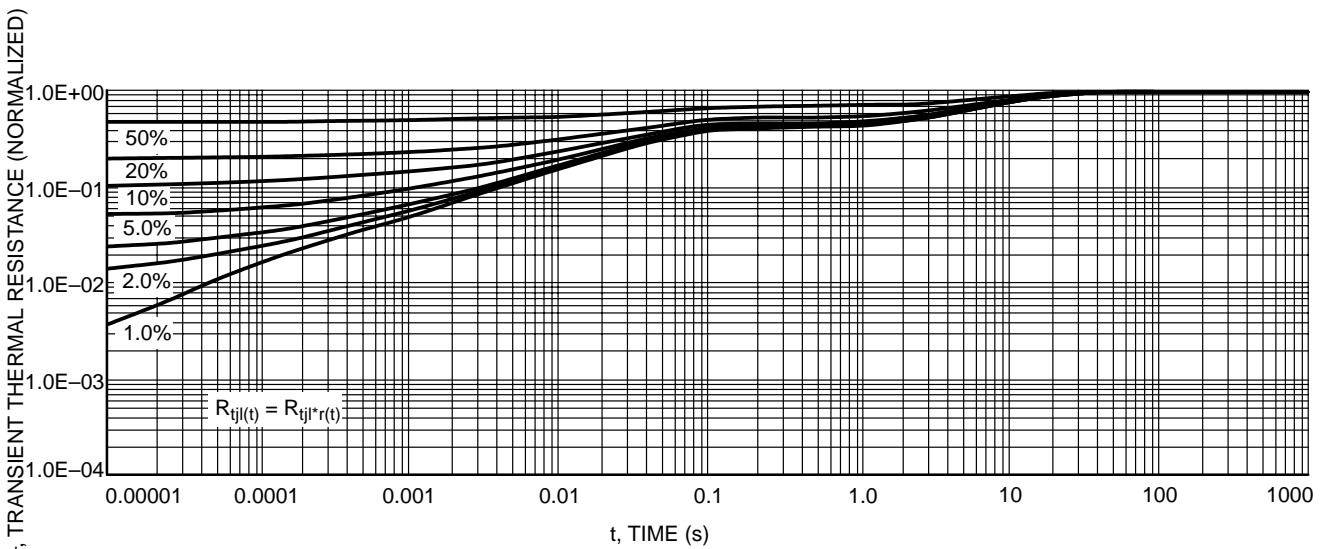


Figure 7. Thermal Response – Junction to Case

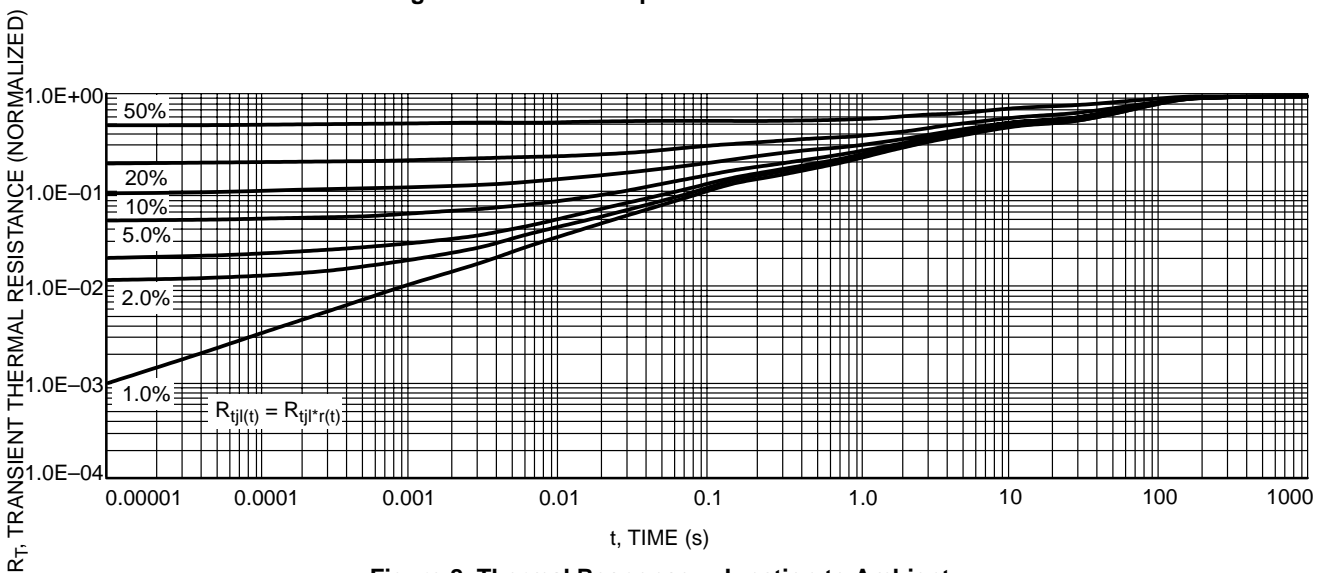
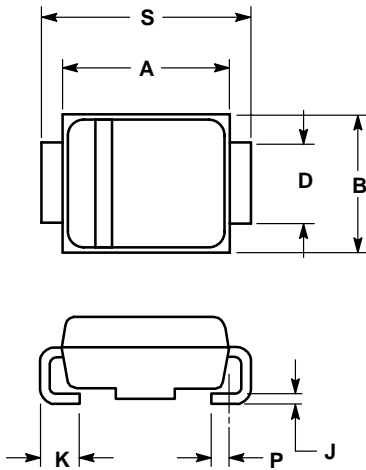


Figure 8. Thermal Response – Junction to Ambient

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PACKAGE DIMENSIONS

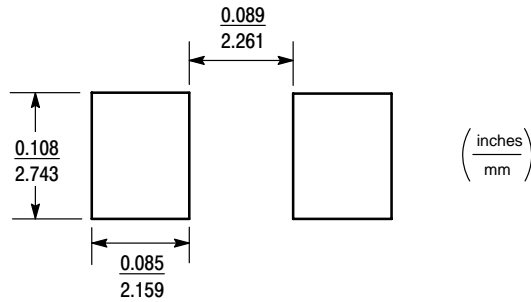
SMB
PLASTIC PACKAGE
CASE 403A-03
ISSUE D




- 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



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