



## Features

- 600W Peak Pulse Power Dissipation
- Uni- and Bi-Directional Versions Available  
Excellent Clamping Capability
- Glass Passivated Die Construction
- Low inductance
- Fast Response Time
- Plastic Material: UL Flammability Classification  
Rating 94V-0



SMB  
(DO-214AA)

## Mechanical Data

- Case: SMB Molded plastic body
- Terminals: Solderable per MIL-STD-750, Method 2026

## Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line  
(RS232, RS485, etc.)

## Maximum Ratings (Ta=25°C unless otherwise noted)

|                                                                                                                      |                                   |             |      |
|----------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------|------|
| Peak pulse power dissipation at 10/1000μs waveform<br>(Note1, Note2, Fig.1)                                          | P <sub>PPM</sub>                  | 600         | W    |
| Peak pulse current                                                                                                   | I <sub>PP</sub>                   | 41.7        | A    |
| Steady state power dissipation at T <sub>A</sub> =50°C (Fig.5)                                                       | P <sub>M(AV)</sub>                | 1           | W    |
| Peak forward surge current, 8.3ms single half sine-wave<br>superimposed on rated load, (JEDEC Method) (Note3, Fig.6) | I <sub>FSM</sub>                  | 100         | A    |
| Operating junction and Storage Temperature Range.                                                                    | T <sub>J</sub> , T <sub>STG</sub> | -55 to +150 | °C   |
| Typical thermal resistance junction to lead                                                                          | R <sub>θJL</sub>                  | 30          | °C/W |
| Typical thermal resistance junction to ambient                                                                       | R <sub>θJA</sub>                  | 100         | °C/W |

Notes:1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2.

2. Mounted on 5.0mm×5.0mm (0.03mm thick) copper pads to each terminal.

3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

## Electrical Characteristics (Ta=25°C)

| Part Number    |                | Device Marking Code |    | Reverse Stand- Off Voltage | Breakdown Voltage @I <sub>T</sub> | Test Current        | Maximum Clamping Voltage @I <sub>PP</sub> | Peak Pulse Current  | Reverse Leakage @V <sub>RWM</sub> |
|----------------|----------------|---------------------|----|----------------------------|-----------------------------------|---------------------|-------------------------------------------|---------------------|-----------------------------------|
| Unidirectional | Bidirectional  | UNI                 | BI | V <sub>RWM</sub> (V)       | V <sub>BR</sub> (V)               | I <sub>T</sub> (mA) | V <sub>C</sub> (V)                        | I <sub>PP</sub> (A) | I <sub>R</sub> (μA)               |
| SMBJ8.5A/TR13  | SMBJ8.5CA/TR13 | KT                  | AT | 8.5                        | 9.44-10.40                        | 1                   | 14.4                                      | 41.7                | 20                                |



## Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

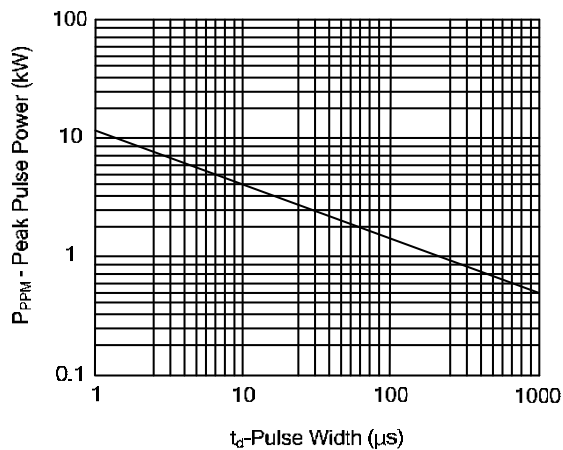


Figure 2. Pulse Derating Curve

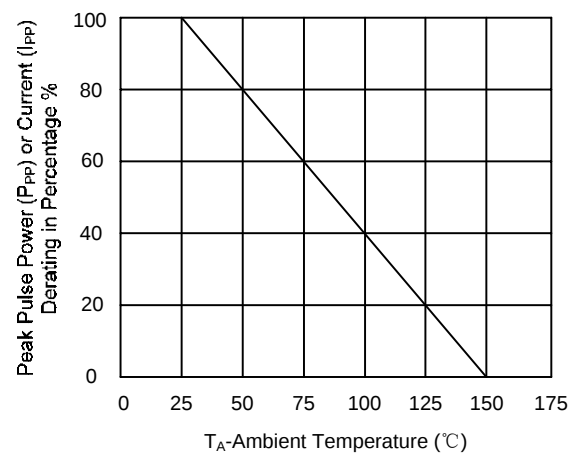


Figure 3. Pulse Waveform

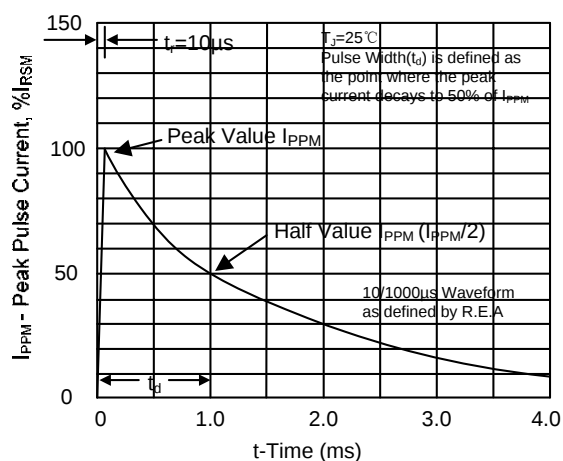


Figure 4. Typical Junction Capacitance

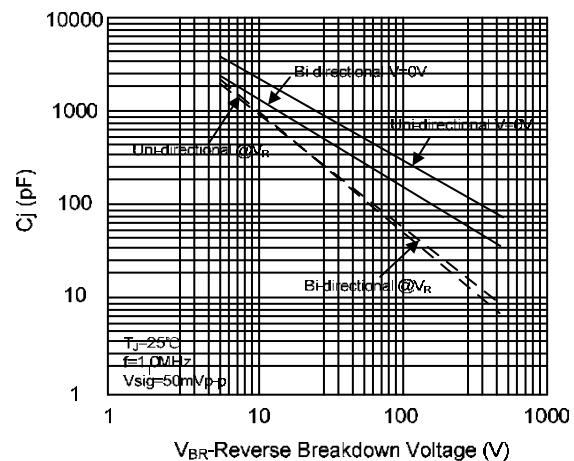


Figure 5. Steady State Power Dissipation Derating Curve

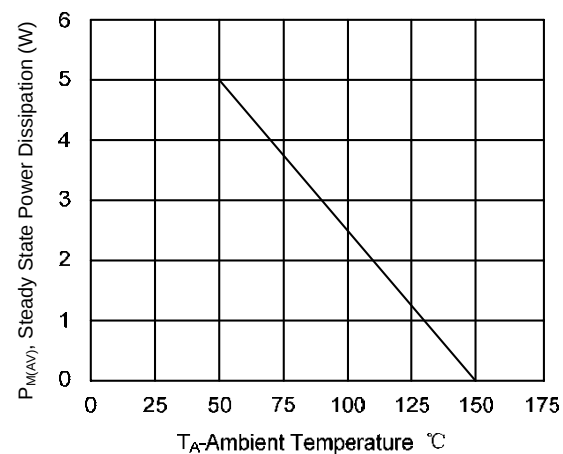
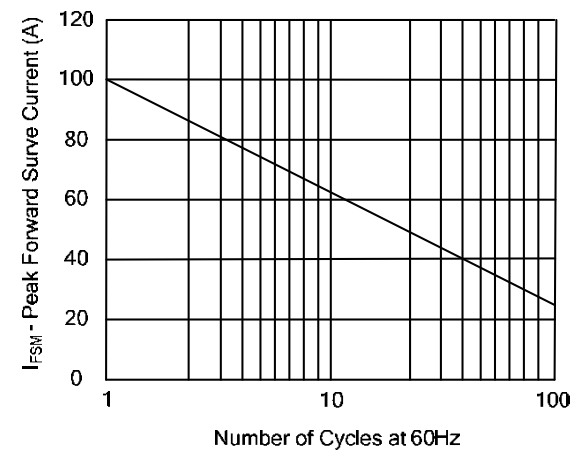
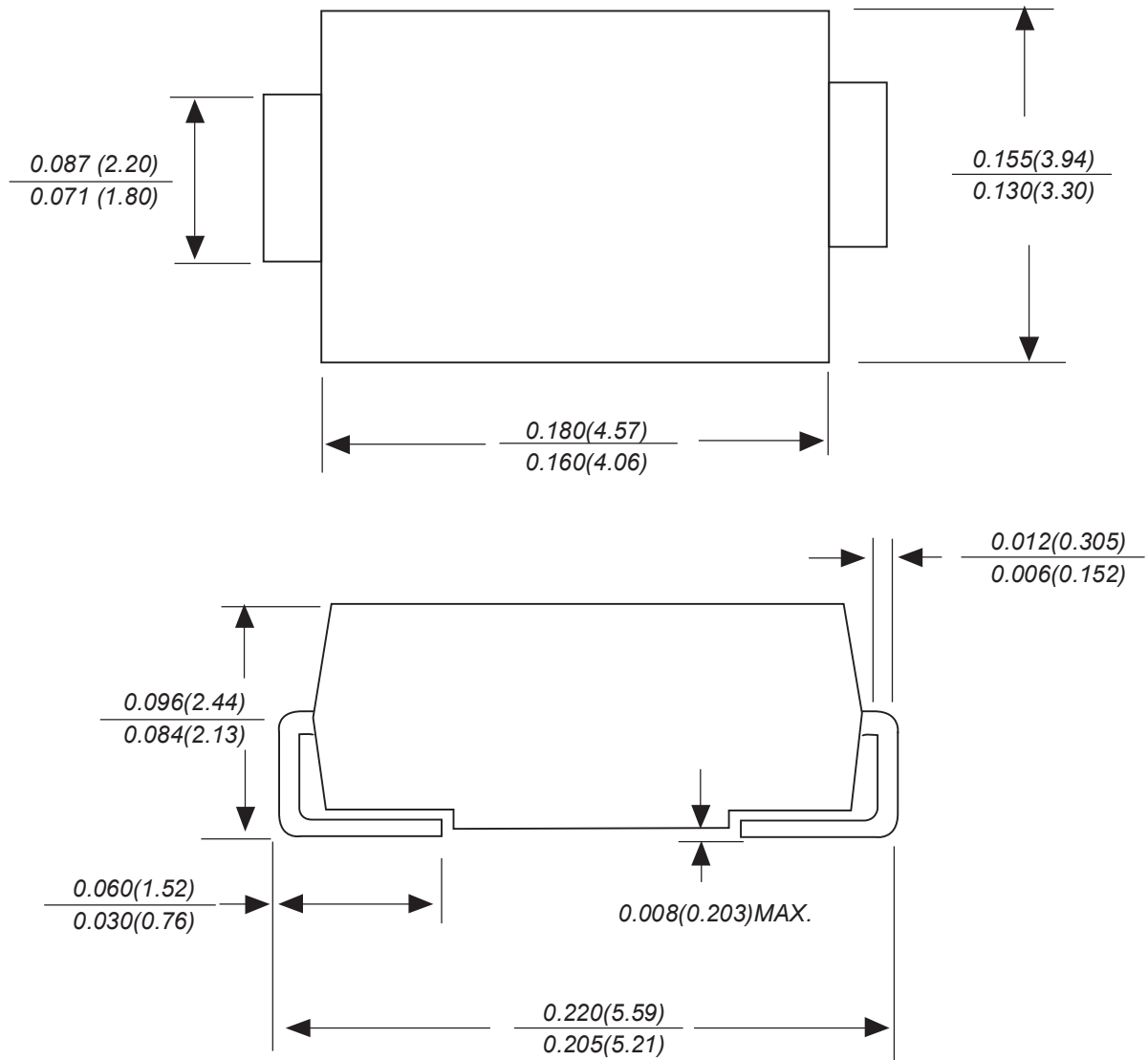


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only





**Package Outline Dimensions**  
**SMB(DO-214AA)**



*Dimensions in inches and (millimeters)*



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