

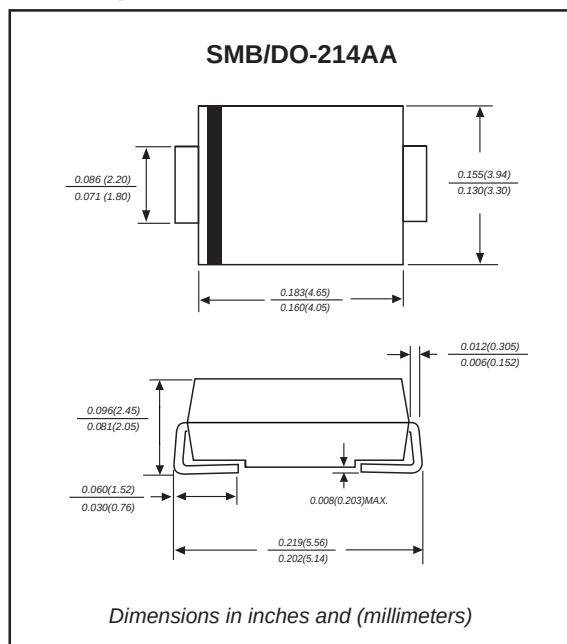
### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds at terminals
- ◆ Compliant to RoHS Directive 2011/65/EU

### Mechanical data

- ◆ **Case:** JEDEC DO-214AA molded plastic body
- ◆ **Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026
- ◆ **Polarity:** Color band denotes cathode end
- ◆ **Mounting Position:** Any

### Package outline



### Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER                                                                                                     | SYMBOLS         | SS1045-SMB  | UNITS                |
|---------------------------------------------------------------------------------------------------------------|-----------------|-------------|----------------------|
| Maximum repetitive peak reverse voltage                                                                       | $V_{RRM}$       | 45          | V                    |
| Maximum RMS voltage                                                                                           | $V_{RMS}$       | 32          | V                    |
| Maximum DC blocking voltage                                                                                   | $V_{DC}$        | 45          | V                    |
| Maximum average forward rectified current at $T_L$ (see fig.1)                                                | $I_{(AV)}$      | 10.0        | A                    |
| Peak forward surge current<br>8.3ms single half sine-wave superimposed on rated load                          | $I_{FSM}$       | 200         | A                    |
| Maximum instantaneous forward voltage at 10A                                                                  | $V_F$           | 0.55        | V                    |
| Maximum DC reverse current $T_A=25^{\circ}\text{C}$<br>at rated DC blocking voltage $T_A=100^{\circ}\text{C}$ | $I_R$           | 0.5<br>10.0 | mA                   |
| Typical junction capacitance (NOTE 1)                                                                         | $C_J$           | 550         | pF                   |
| Typical thermal resistance (NOTE 2)                                                                           | $R_{\theta JA}$ | 50          | $^{\circ}\text{C/W}$ |
| Operating junction temperature range                                                                          | $T_{JL}$        | -55 to +150 | $^{\circ}\text{C}$   |
| Storage temperature range                                                                                     | $T_{STG}$       | -55 to +150 | $^{\circ}\text{C}$   |

**Note:** 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
2. P.C.B. mounted with 2.0x2.0" (5.0x5.0cm) copper pad areas

### Rating and characteristic curves

FIG. 1- FORWARD CURRENT DERATING CURVE

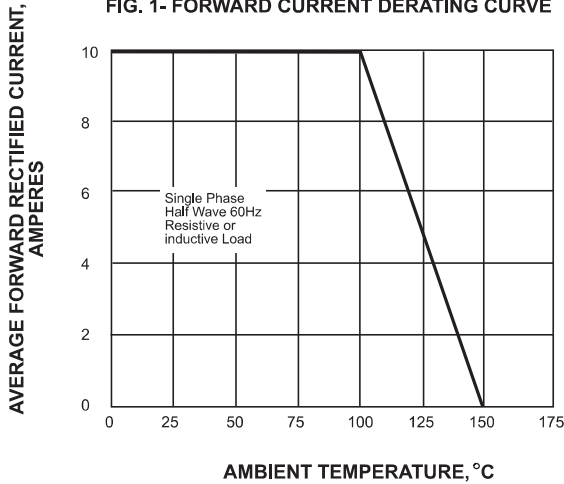


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

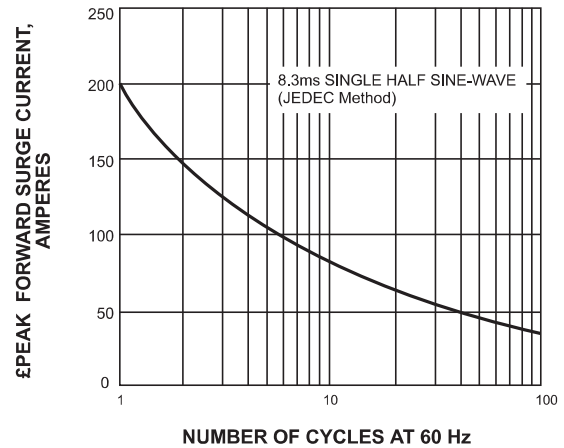


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

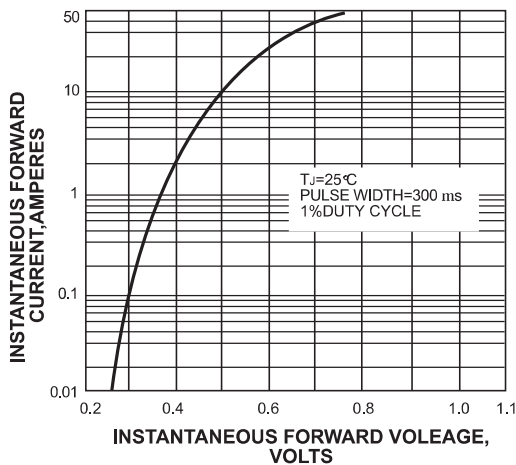


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

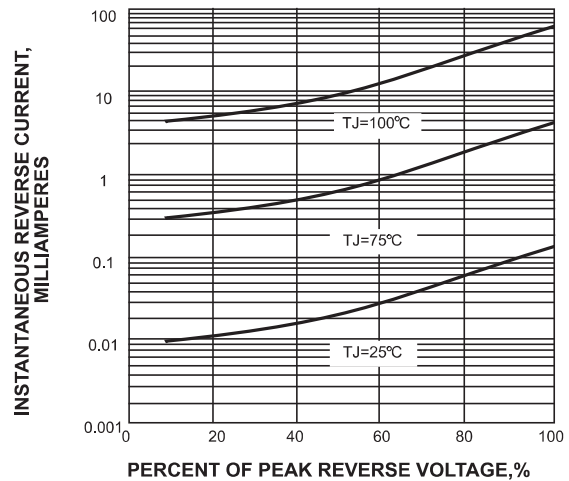


FIG. 5-TYPICAL JUNCTION CAPACITANCE

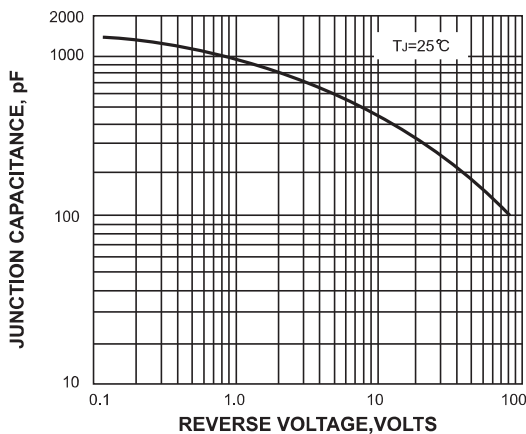
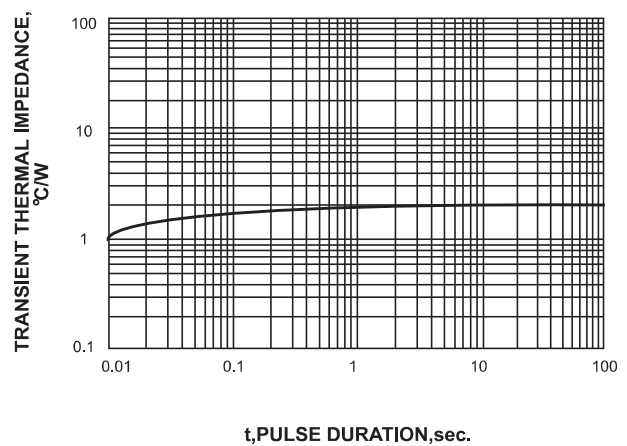


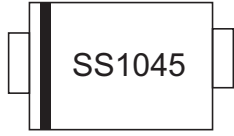
FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



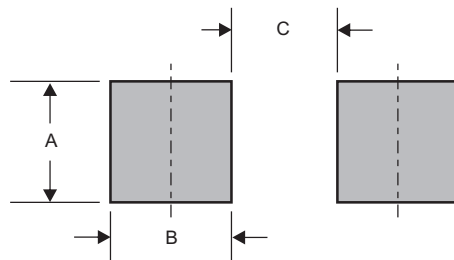
### Pinning information

| Pin                        | Simplified outline                                                                 | Symbol                                                                              |
|----------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Pin1 cathode<br>Pin2 anode |  |  |

### Marking

| Type number | Marking code                                                                      |
|-------------|-----------------------------------------------------------------------------------|
| SS1045-SMB  |  |

### Suggested solder pad layout

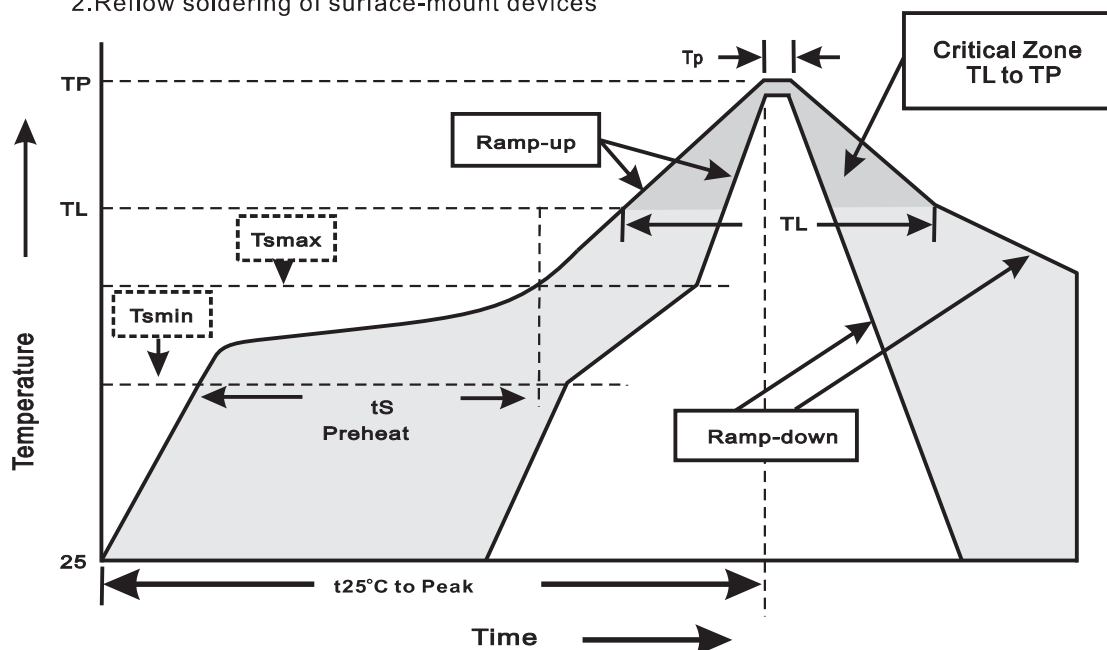


Dimensions in inches and (millimeters)

| PACKAGE | A            | B            | C            |
|---------|--------------|--------------|--------------|
| SMB     | 0.078 (2.00) | 0.059 (1.50) | 0.110 (2.80) |

### Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



### 3.Reflow soldering

| Profile Feature                                                                                                               | Soldering Condition         |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Average ramp-up rate(T <sub>L</sub> to T <sub>P</sub> )                                                                       | <3°C/sec                    |
| Preheat<br>-Temperature Min(T <sub>smin</sub> )<br>-Temperature Max(T <sub>smax</sub> )<br>-Time(min to max)(t <sub>s</sub> ) | 150°C<br>200°C<br>60~120sec |
| T <sub>smax</sub> to T <sub>L</sub><br>-Ramp-upRate                                                                           | <3°C/sec                    |
| Time maintained above:<br>-Temperature(T <sub>L</sub> )<br>-Time(t <sub>L</sub> )                                             | 217°C<br>60~260sec          |
| Peak Temperature(T <sub>P</sub> )                                                                                             | 255°C-0/+5°C                |
| Time within 5°C of actual Peak Temperature(t <sub>P</sub> )                                                                   | 10~30sec                    |
| Ramp-down Rate                                                                                                                | <6°C/sec                    |
| Time 25°C to Peak Temperature                                                                                                 | <6minutes                   |