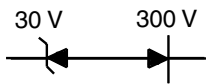


## Asymmetric Transient Voltage Suppressor



DO-214AA (SMB)



### FEATURES

- Glass passivated chip junction
- Ideal for automated placement
- Very fast response time
- Low incremental surge resistance, excellent clamping capability
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Solder dip 260 °C, 40 seconds
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



### TYPICAL APPLICATIONS

For use in wiper motor application, to replace varistor.

### MECHANICAL DATA

**Case:** DO-214AA (SMB)

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

**Polarity:** Color band denotes TVS 30 V cathode end, the cathode of 300 V is at the other terminal side

### PRIMARY CHARACTERISTICS

|                   |        |
|-------------------|--------|
| $I_{PPM}$         | 14.5 A |
| $V_C$             | 41.4 V |
| $V_{BR}$ at TVS   | 30 V   |
| $V_{BR}$ at Diode | 300 V  |
| $T_J$ max.        | 150 °C |

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER   | SYMBOL         | VALUE         | UNIT    |
|---|----------------|---------------|---------|
| Peak pulse current with a 10/1000 $\mu$ s waveform per (Fig. 1)                   | $I_{PPM}$      | 14.5          | A       |
| Maximum reverse current of 30 V TVS side at $V_{WM} = 25.6$ V <sup>(1)(2)</sup>   | $I_D$          | 5.0           | $\mu$ A |
| Maximum reverse current of 300 V diode side at $V_{WM} = 243$ V <sup>(1)(2)</sup> | $I_D$          | 1.0           | $\mu$ A |
| Operating junction and storage temperature range                                  | $T_J, T_{STG}$ | - 55 to + 150 | °C      |

#### Notes:

(1) All terms and symbols are consistent with ANSI/IEEE C62.35

(2)  $V_{WM}$  means stand-off voltage

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

| DEVICE TYPE | DEVICE MARKING CODE | BREAKDOWN VOLTAGE $V_{BR}$ AT $I_T$ <sup>(1)</sup> (V) |      | TEST CURRENT $I_T$ (mA) | TYPICAL JUNCTION CAPACITANCE AT 4.0 V, 1 MHz $C_J$ (pF) | MAXIMUM PEAK PULSE SURGE CURRENT $I_{PPM}$ <sup>(2)</sup> (A) | MAXIMUM CLAMPING VOLTAGE AT $I_{PPM}$ $V_C$ (V) |
|-------------|---------------------|--|------|-------------------------|---|---|---|
|             |                     | MIN  | MAX  |                         |   |   |   |
| SMB30A300   | 30F                 |  |      |                         |   |   |   |
| 30 V TVS    |                     | 28.5   | 31.5 | 1.0                     | 130   | 14.5  | 41.4  |
| 300 V Diode |                     | 270  | 360  | 1.0                     | 72  | -   | -   |

#### Notes:

(1) Pulse test:  $t_p \leq 50$  ms

(2) Surge current waveform per Fig. 1

| ORDERING INFORMATION (Example) |                 |                        |               |                                    |
|--------------------------------|-----------------|------------------------|---------------|------------------------------------|
| PREFERRED P/N                  | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE                      |
| SMB30A300-E3/52                | 0.096           | 52                     | 750           | 7" diameter plastic tape and reel  |
| SMB30A300-E3/5B                | 0.096           | 5B                     | 3200          | 13" diameter plastic tape and reel |
| SMB30A300HE3/52 <sup>(1)</sup> | 0.096           | 52                     | 750           | 7" diameter plastic tape and reel  |
| SMB30A300HE3/5B <sup>(1)</sup> | 0.096           | 5B                     | 3200          | 13" diameter plastic tape and reel |

**Note:**

(1) Automotive grade AEC Q101 qualified

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^\circ\text{C}$  unless otherwise noted)

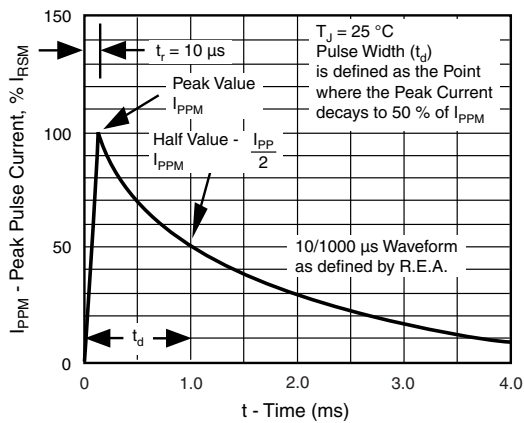


Figure 1. Pulse Waveform

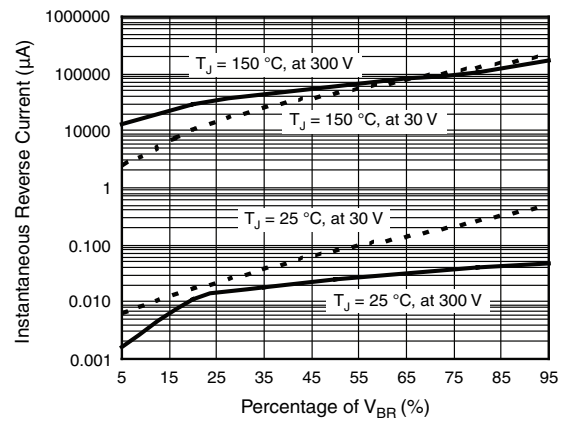


Figure 3. Typical Reverse Leakage Current

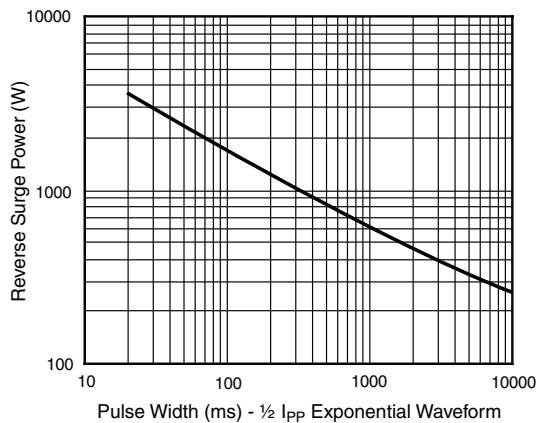


Figure 2. Reverse Power Capability for TVS

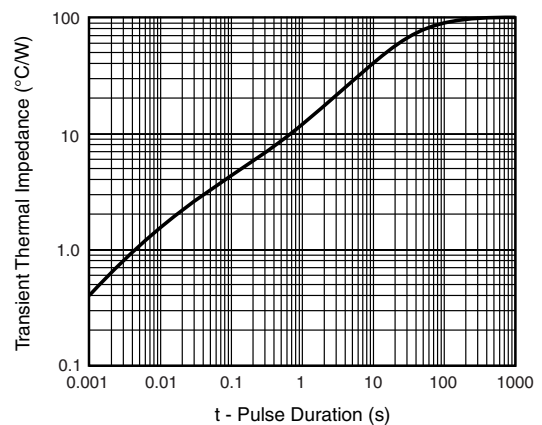
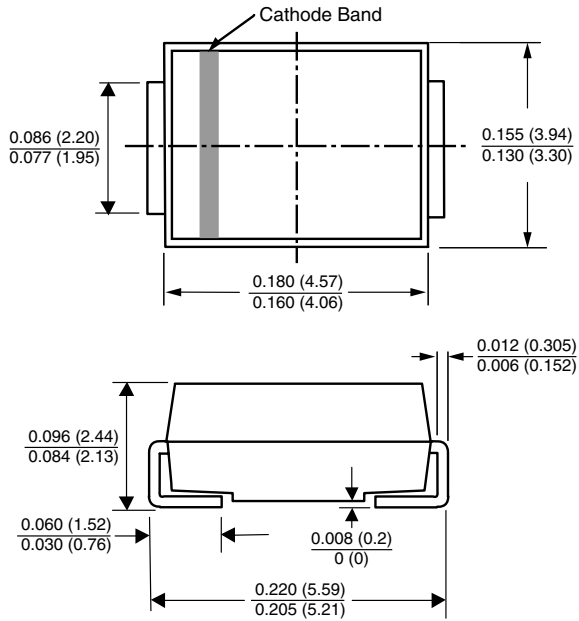


Figure 4. Typical Transient Thermal Impedance

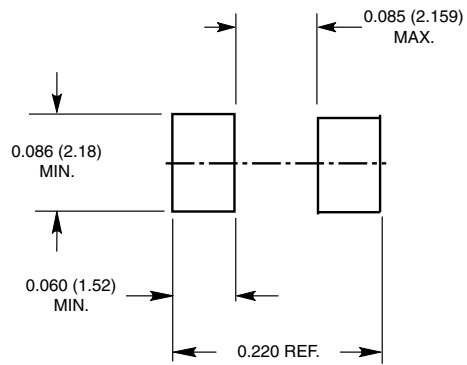


**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**DO-214AA (SMB)**



**Mounting Pad Layout**





## Disclaimer

All product specifications and data are subject to change without notice.

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