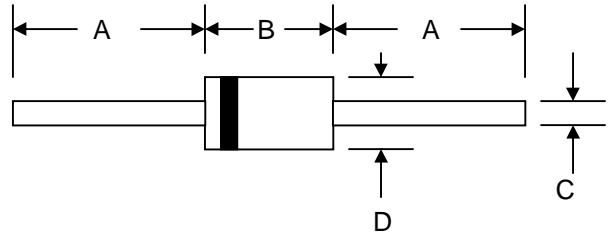


## Features

- Glass Passivated Die Construction
- 500W Peak Pulse Power Dissipation
- 180V – 220V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O



## Mechanical Data

- Case: DO-15, Molded Plastic
- Terminals: Axial Leads, Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band Except Bi-Directional
- Marking: Type Number
- Weight: 0.40 grams (approx.)
- **Lead Free: For RoHS / Lead Free Version, Add “-LF” Suffix to Part Number, See Page 5**

| DO-15                |      |       |
|----------------------|------|-------|
| Dim                  | Min  | Max   |
| A                    | 25.4 | —     |
| B                    | 5.50 | 7.62  |
| C                    | 0.71 | 0.864 |
| D                    | 2.60 | 3.60  |
| All Dimensions in mm |      |       |

“C” Suffix Designates Bi-directional Devices  
 “A” Suffix Designates 5% Tolerance Devices  
 No Suffix Designates 10% Tolerance Devices

## Maximum Ratings and Electrical Characteristics @ $T_A=25^\circ\text{C}$ unless otherwise specified

| Characteristic   | Symbol         | Value       | Unit             |
|--|----------------|-------------|------------------|
| Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ (Note 1, 2, 5) Figure 3 | PPPM           | 500 Minimum | W                |
| Peak Forward Surge Current (Note 3)  | IFSM           | 70          | A                |
| Peak Pulse Current on 10/1000 $\mu\text{S}$ Waveform (Note 1) Figure 1           | IPPM           | See Table 1 | A                |
| Steady State Power Dissipation (Note 2, 4)                                       | PM(AV)         | 1.0         | W                |
| Operating and Storage Temperature Range  | $T_j, T_{STG}$ | -65 to +175 | $^\circ\text{C}$ |

- Note: 1. Non-repetitive current pulse per Figure 1 and derated above  $T_A = 25^\circ\text{C}$  per Figure 4.  
 2. Mounted on 40mm<sup>2</sup> copper pad.  
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.  
 4. Lead temperature at 75 $^\circ\text{C}$ .  
 5. Peak pulse power waveform is 10/1000 $\mu\text{S}$ .



Fig. 1 Pulse Waveform



Fig. 2 Typical Junction Capacitance



Fig. 3 Pulse Rating Curve



Fig. 4 Pulse Derating Curve

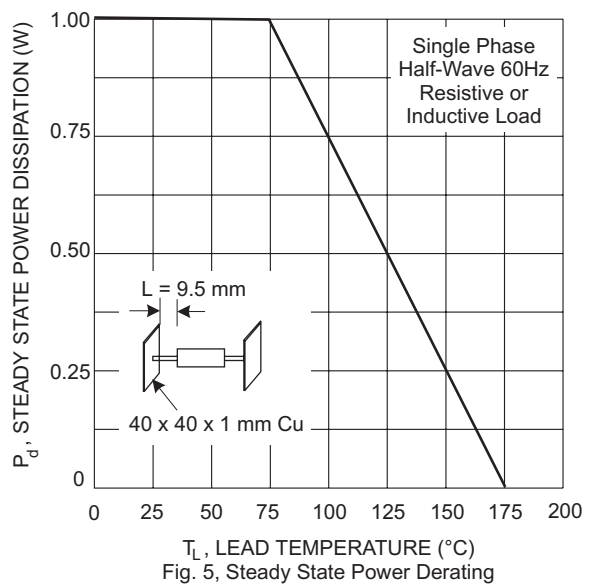


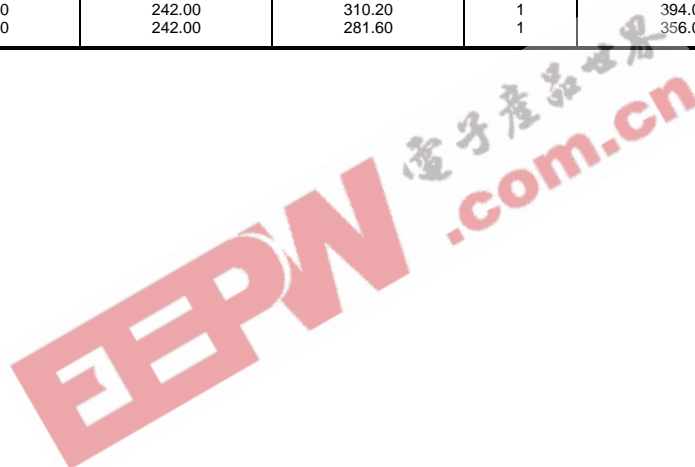
Fig. 5, Steady State Power Derating

## UNI-DIRECTIONAL 500 WATT AXIAL LEAD TVS

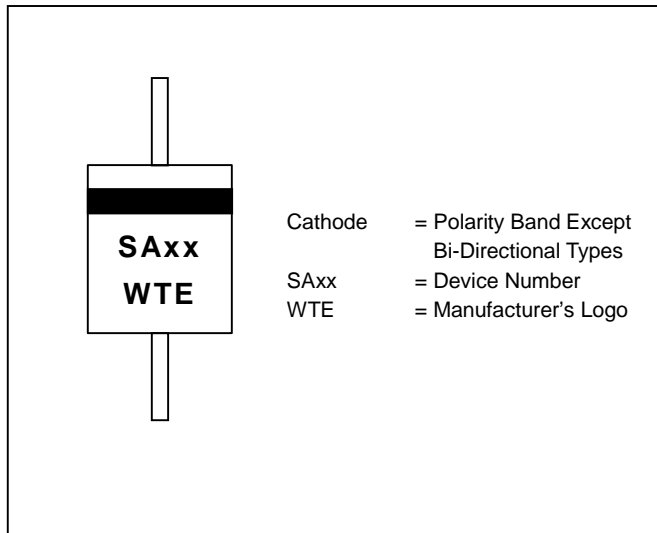
| UNI-DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|-----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| SA180                       | 180.00                             | 198.00                             | 253.80                             | 1                    | 322.0                                | 1.6                        | 1                             |
| SA180A                      | 180.00                             | 198.00                             | 230.40                             | 1                    | 292.0                                | 1.7                        | 1                             |
| SA190                       | 190.00                             | 209.00                             | 267.90                             | 1                    | 340.0                                | 1.5                        | 1                             |
| SA190A                      | 190.00                             | 209.00                             | 243.20                             | 1                    | 308.0                                | 1.6                        | 1                             |
| SA200                       | 200.00                             | 220.00                             | 282.00                             | 1                    | 358.0                                | 1.4                        | 1                             |
| SA200A                      | 200.00                             | 220.00                             | 256.00                             | 1                    | 324.0                                | 1.5                        | 1                             |
| SA210                       | 210.00                             | 231.00                             | 296.10                             | 1                    | 376.0                                | 1.3                        | 1                             |
| SA210A                      | 210.00                             | 231.00                             | 268.80                             | 1                    | 340.0                                | 1.5                        | 1                             |
| SA220                       | 220.00                             | 242.00                             | 310.20                             | 1                    | 394.0                                | 1.3                        | 1                             |
| SA220A                      | 220.00                             | 242.00                             | 281.60                             | 1                    | 356.0                                | 1.4                        | 1                             |

## BI-DIRECTIONAL 500 WATT AXIAL LEAD TVS

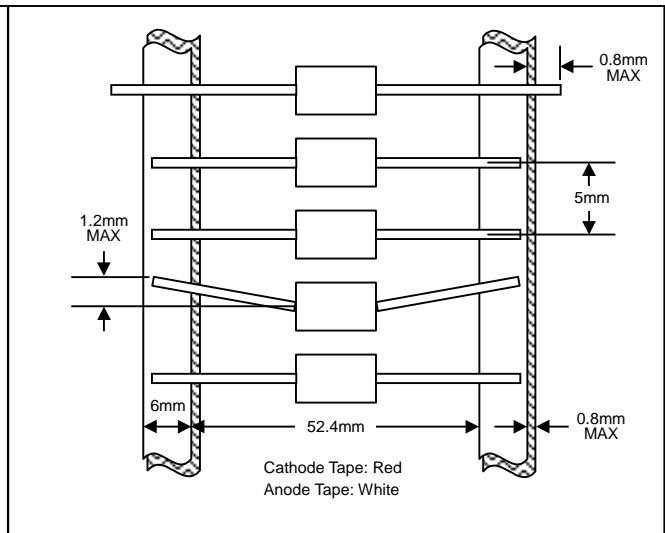
| BI-DIRECTIONAL PART NUMBER | REVERSE STAND-OFF VOLTAGE VRWM (V) | BREAKDOWN VOLTAGE VBR (V) MIN. @IT | BREAKDOWN VOLTAGE VBR (V) MAX. @IT | TEST CURRENT IT (mA) | MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V) | PEAK PULSE CURRENT Ipp (A) | REVERSE LEAKAGE @VRWM IR (uA) |
|----------------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|--------------------------------------|----------------------------|-------------------------------|
| SA180C                     | 180.00                             | 198.00                             | 253.80                             | 1                    | 322.0                                | 1.6                        | 1                             |
| SA180CA                    | 180.00                             | 198.00                             | 230.40                             | 1                    | 292.0                                | 1.7                        | 1                             |
| SA190C                     | 190.00                             | 209.00                             | 267.90                             | 1                    | 340.0                                | 1.5                        | 1                             |
| SA190CA                    | 190.00                             | 209.00                             | 243.20                             | 1                    | 308.0                                | 1.6                        | 1                             |
| SA200C                     | 200.00                             | 220.00                             | 282.00                             | 1                    | 358.0                                | 1.4                        | 1                             |
| SA200CA                    | 200.00                             | 220.00                             | 256.00                             | 1                    | 324.0                                | 1.5                        | 1                             |
| SA210C                     | 210.00                             | 231.00                             | 296.10                             | 1                    | 376.0                                | 1.3                        | 1                             |
| SA210CA                    | 210.00                             | 231.00                             | 268.80                             | 1                    | 340.0                                | 1.5                        | 1                             |
| SA220C                     | 220.00                             | 242.00                             | 310.20                             | 1                    | 394.0                                | 1.3                        | 1                             |
| SA220CA                    | 220.00                             | 242.00                             | 281.60                             | 1                    | 356.0                                | 1.4                        | 1                             |


  
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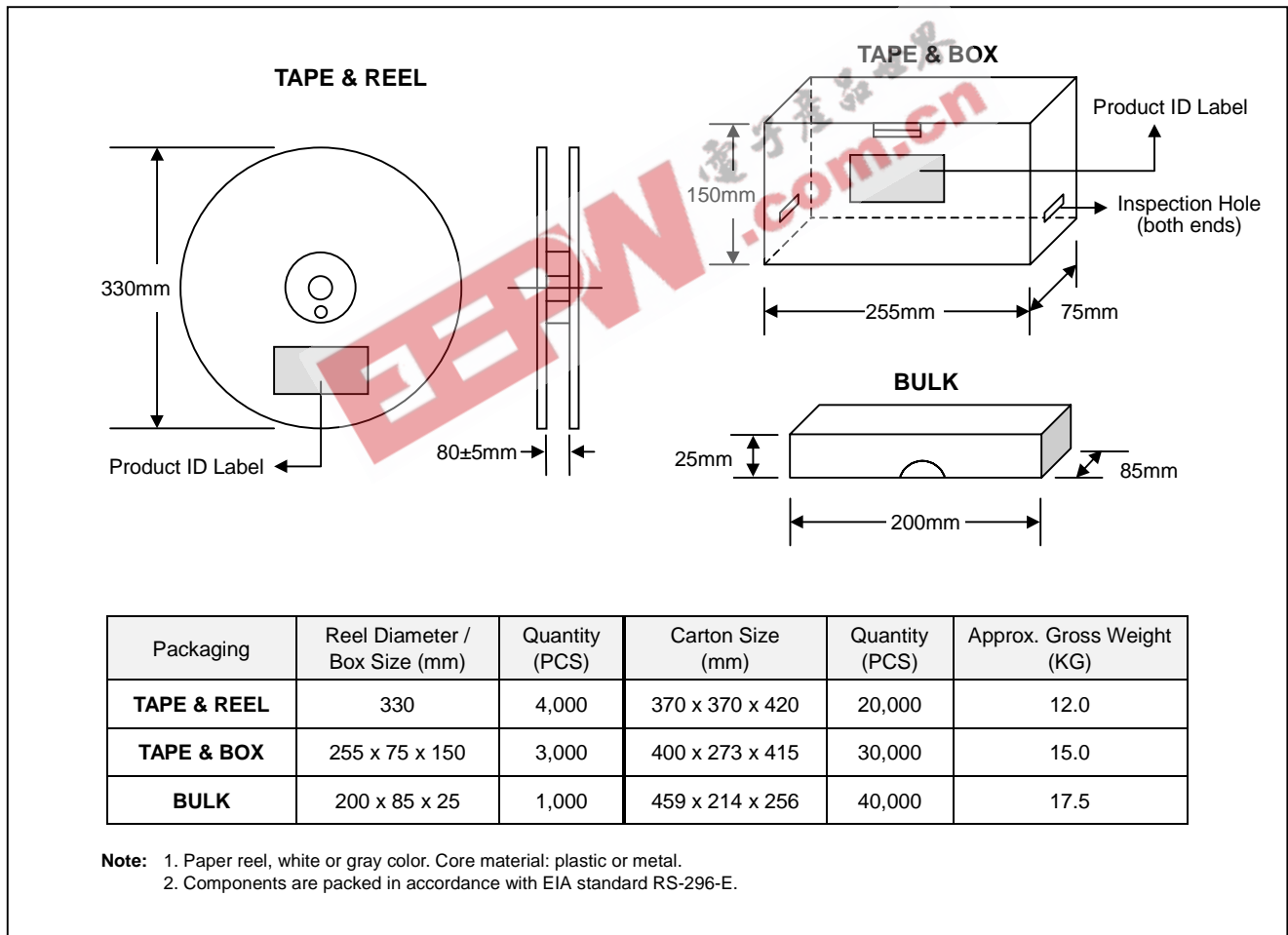
## MARKING INFORMATION



## TAPING SPECIFICATIONS



## PACKAGING INFORMATION



## ORDERING INFORMATION

| Product No.    | Package Type | Shipping Quantity |
|----------------|--------------|-------------------|
| SAxx-T3        | DO-15        | 4000/Tape & Reel  |
| <b>SAxx-TB</b> | DO-15        | 3000/Tape & Box   |
| SAxx           | DO-15        | 1000 Units/Box    |

1. Products listed in **bold** are WTE **Preferred** devices.
2. Shipping quantity given is for minimum packing quantity only. For minimum order quantity, please consult the Sales Department.
3. **To order RoHS / Lead Free version, add "-LF" suffix to part number above. For example, SA180-TB-LF.**

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**WARNING:** DO NOT USE IN LIFE SUPPORT EQUIPMENT. WTE power semiconductor products are not authorized for use as critical components in life support devices or systems without the express written approval.

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**Internet:** <http://www.wontop.com>

*We power your everyday.*