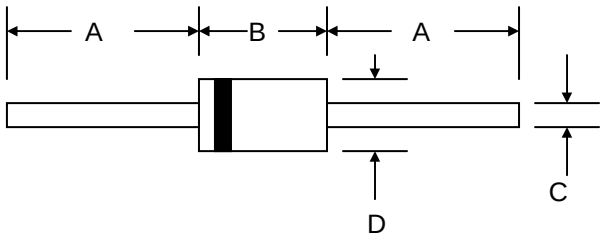
SA180 – SA220CA

500W TRANSIENT VOLTAGE SUPPRESSOR

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℃ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation at T_A = 25℃ (Note 1, 2, 5) Figure 3	P_{PPM}	500 Minimum	W
Peak Forward Surge Current (Note 3)	I_{FSM}	70	A
Peak Pulse Current on 10/1000μS Waveform (Note 1) Figure 1	I_{PPM}	See Table 1	A
Steady State Power Dissipation (Note 2, 4)	$P_{M(AV)}$	3.0	W
Typical Thermal Resistance ,Junction to Lead (Note 6)	$R_{\theta JL}$	33.3	℃/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +175	℃

Note: 1. Non-repetitive current pulse per Figure 1 and derated above T_A = 25℃ per Figure 4.
2. Mounted on 40mm^2 copper pad.
3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75℃.
5. Peak pulse power waveform is 10/1000μS.
6. Measured at lead length 3/8" (9.5mm) from body.

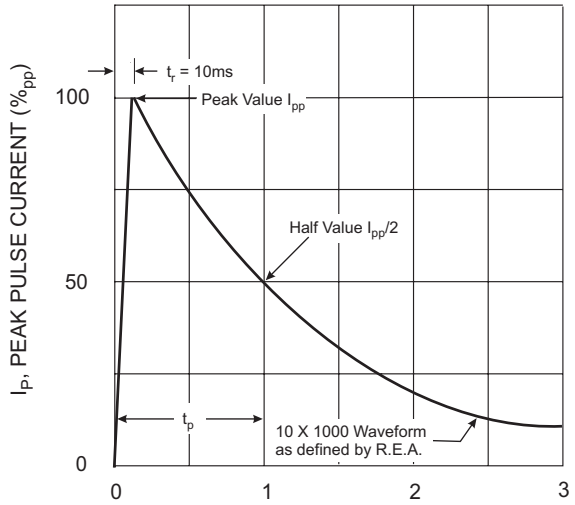


Fig. 1 Pulse Waveform

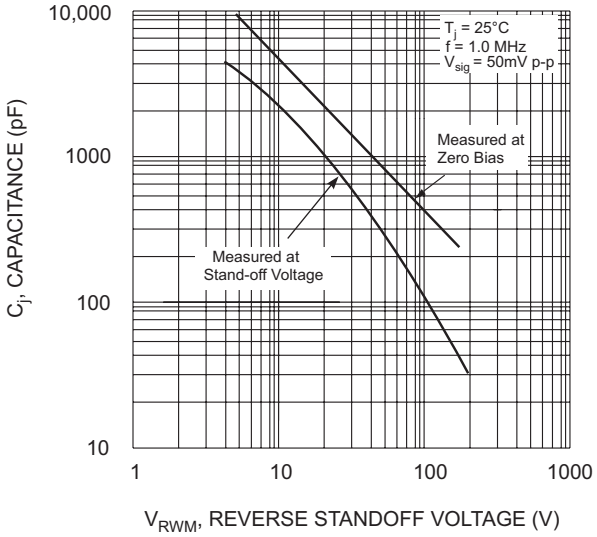


Fig. 2 Typical Junction Capacitance

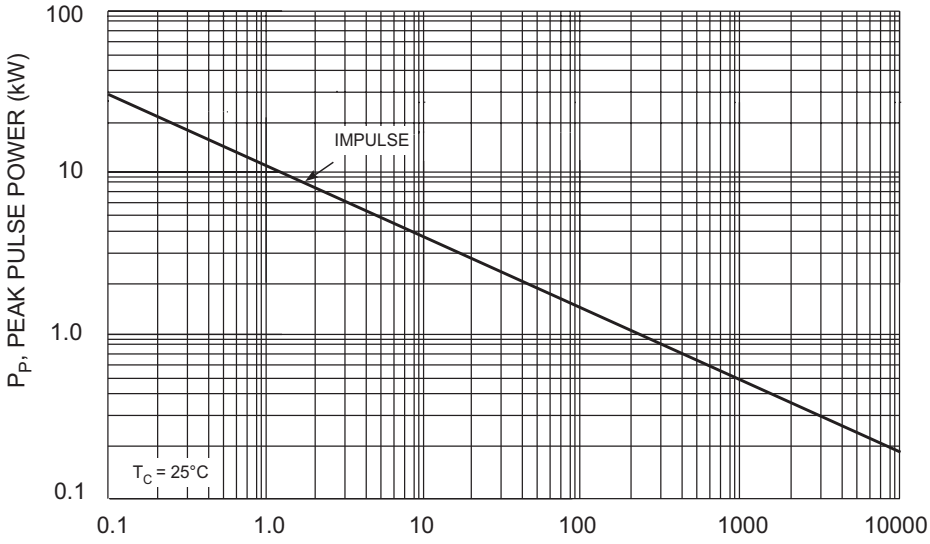


Fig. 3 Pulse Rating Curve

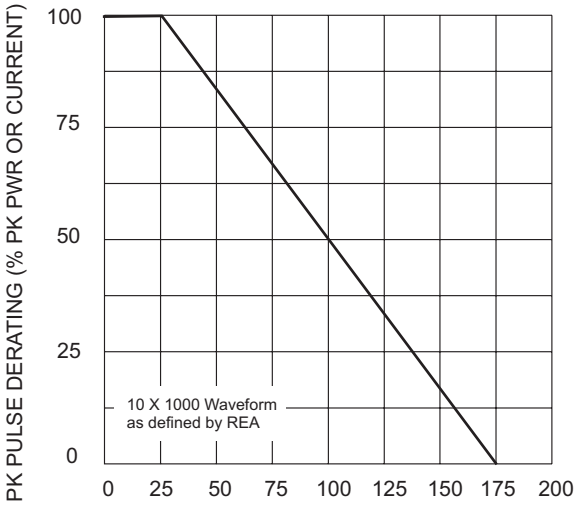


Fig. 4 Pulse Derating Curve

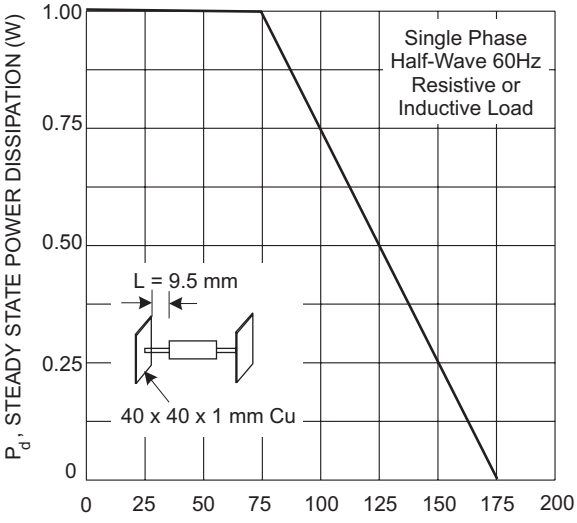


Fig. 5, Steady State Power Derating

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

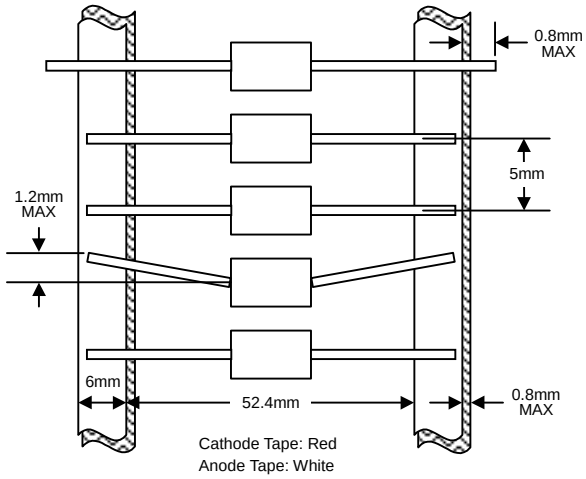
BI-DIRECTIONAL 500 WATT AXIAL LEAD TVS

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

MARKING INFORMATION

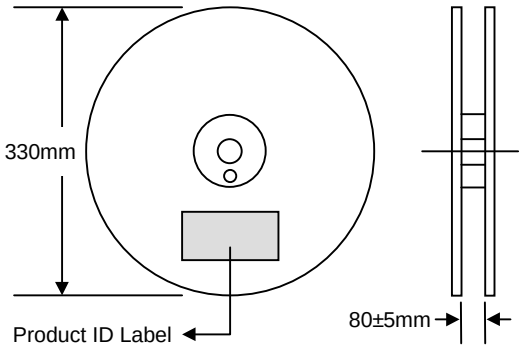
Cathode = Polarity Band Except Bi-Directional Types
SAxx = Device Number
WTE = Manufacturer's Logo

TAPING SPECIFICATIONS

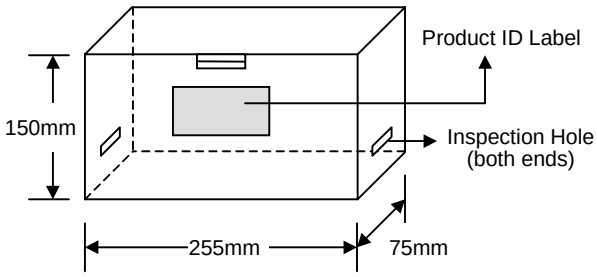


PACKAGING INFORMATION

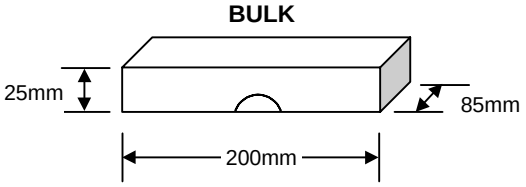
TAPE & REEL



TAPE & BOX



BULK



Packaging	Reel Diameter / Box Size (mm)	Quantity (PCS)	Carton Size (mm)	Quantity (PCS)	Approx. Gross Weight (KG)
TAPE & REEL	330	4,000	370 x 370 x 420	20,000	12.0
TAPE & BOX	255 x 75 x 150	3,000	400 x 273 x 415	30,000	15.0
BULK	200 x 85 x 25	1,000	459 x 214 x 256	40,000	17.5

Note: 1. Paper reel, white or gray color. Core material: plastic or metal.
2. Components are packed in accordance with EIA standard RS-296-E.

ORDERING INFORMATION

Product No.	Package Type	Shipping Quantity
SAxx-T3	DO-15	4000/Tape & Reel
SAxx-TB	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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