

# SA5.0 THRU SA180CA

## GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-5.0 to 180 Volts 500 Watt Peak Pulse Power

### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated chip junction
- 500W Peak Pulse Power
- capability on 10/1000us waveform
- Excellent clamping capability
- Repetition rate (duty cycle):0.01%
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0 Volts to BV for unidirectional and 5.0ns for bidirectional types
- Typical ID less than 1uA above 10V
- High temperature soldering guaranteed:
- 300°C/10 seconds/.375", (9.5mm) lead length, 5lbs., (2.3kg) tension

### MECHANICAL DATA

Case: JEDEC DO-15 Molded Plastic over passivated junction

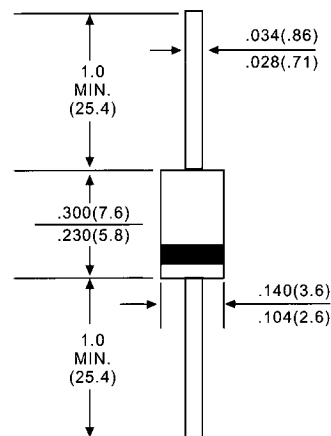
Terminal: Plated Axial leads, solderable per MIL-STD-750, Method 2026

Polarity: Color band denoted positive end (cathode) except Bidirectionals

Mounting Position: Any

Weight: 0.015 ounce, 0.4 gram

DO-15



Dimension in inches and (millimeters)

### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SA5.0 thru types SA180 (e.g. SA5.0C , SA180CA)  
Electrical characteristics apply in both directions

### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (NOTE 1,FIG.1)	PPPM	Minimum 500	Watts
Peak Pulse Current of on 10/1000 $\mu$ s waveform (NOTE 1,FIG.3)	IPPM	SEE TABLE 1	Amps
Steady State Power Dissipation at $T_L=75^\circ\text{C}$ Lead Lengths .375", (9.5mm)(NOTE 2)	PM(AV)	3.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load, Unidirectional only (JEDEC Method) (NOTE 3)	IFSM	70	Amps
Operating junction and Storage Temperature Range	TJ, TSTG	-55 to +175	$^\circ\text{C}$

#### NOTES :

1. Non-repetitive current pulse , per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 2 .
2. Mounted on Copper Pad area of  $1.6 \times 1.6$ " (40 $\times$ 40mm) per Fig. 6.
3. 8.3ms single half sine-wave , or equivalent square wave, Duty cycle = 4 pulses per minutes maximum.

**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 (μA)
SA5.0(C)A	5.00	6.40	7.00	10	9.2	55.4	600
SA6.0(C)A	6.00	6.67	7.37	10	10.3	49.5	600
SA6.5(C)A	6.50	7.22	7.98	10	11.2	45.5	400
SA7.0(C)A	7.00	7.78	8.60	10	12.0	42.5	150
SA7.5(C)A	7.50	8.33	9.21	1	12.9	39.5	50
SA8.0(C)A	8.00	8.89	9.83	1	13.6	37.5	25
SA8.5(C)A	8.50	9.44	10.40	1	14.4	35.4	10
SA9.0(C)A	9.00	10.00	11.10	1	15.4	33.1	5
SA10(C)A	10.00	11.10	12.30	1	17.0	30.0	3
SA11(C)A	11.00	12.20	13.50	1	18.2	28.0	3
SA12(C)A	12.00	13.30	14.70	1	19.9	25.6	3
SA13(C)A	13.00	14.40	15.90	1	21.5	23.7	3
SA14(C)A	14.00	15.60	17.20	1	23.2	22.0	3
SA15(C)A	15.00	16.70	18.50	1	24.4	20.9	3
SA16(C)A	16.00	17.80	19.70	1	26.0	19.6	3
SA17(C)A	17.00	18.90	20.90	1	27.6	18.5	3
SA18(C)A	18.00	20.00	22.10	1	29.2	17.5	3
SA20(C)A	20.00	22.20	24.50	1	32.4	15.7	3
SA22(C)A	22.00	24.40	26.90	1	35.5	14.4	3
SA24(C)A	24.00	26.70	29.50	1	38.9	13.1	3
SA26(C)A	26.00	28.90	31.90	1	42.1	12.1	3
SA28(C)A	28.00	31.10	34.40	1	45.4	11.2	3
SA30(C)A	30.00	33.30	36.80	1	48.4	10.5	3
SA33(C)A	33.00	36.70	40.60	1	53.3	9.6	3
SA36(C)A	36.00	40.00	44.20	1	58.1	8.8	3
SA40(C)A	40.00	44.40	49.10	1	64.5	7.9	3
SA43(C)A	43.00	47.80	52.80	1	69.4	7.3	3
SA45(C)A	45.00	50.00	55.30	1	72.7	7.0	3
SA48(C)A	48.00	53.30	58.90	1	77.4	6.6	3
SA51(C)A	51.00	56.70	62.70	1	82.4	6.2	3
SA54(C)A	54.00	60.00	66.30	1	87.1	5.9	3
SA58(C)A	58.00	64.40	71.20	1	93.6	5.4	3
SA60(C)A	60.00	66.70	73.70	1	96.8	5.3	3
SA64(C)A	64.00	71.10	78.60	1	103.0	5.0	3
SA70(C)A	70.00	77.80	86.00	1	113.0	4.5	3
SA75(C)A	75.00	83.30	92.10	1	121.0	4.2	3
SA78(C)A	78.00	86.70	95.80	1	126.0	4.0	3
SA85(C)A	85.00	94.40	104.00	1	137.0	3.7	3
SA90(C)A	90.00	100.00	111.00	1	146.0	3.5	3
SA100(C)A	100.00	111.00	123.00	1	162.0	3.1	3
SA110(C)A	110.00	122.00	135.00	1	177.0	2.9	3
SA120(C)A	120.00	133.00	147.00	1	193.0	2.6	3
SA130(C)A	130.00	144.00	159.00	1	209.0	2.4	3
SA150(C)A	150.00	167.00	185.00	1	243.0	2.1	3
SA160(C)A	160.00	178.00	197.00	1	259.0	2.0	3
SA170(C)A	170.00	189.00	209.00	1	275.0	1.9	3
SA180(C)A	180.00	200.00	233.00	1	289.0	1.73	3

For Bidirectional type having Vrwm of 10 volts and less, the IR limit is double.

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