

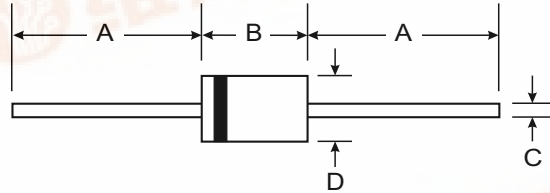


# SA5V0A - SA170A

## 500W TRANSIENT VOLTAGE SUPPRESSOR

### Features

- Constructed with Glass Passivated Die
- Excellent Clamping Capability
- 500W Peak Pulse Power Dissipation
- Fast Response Time
- 100% Tested at Rated Peak Pulse Power
- Voltage Range 5.0 - 170 Volts
- Unidirectional and Bi-directional Versions Available (Note 1)



### Mechanical Data

- Case: Transfer Molded Epoxy
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020A
- Leads: Plated Leads, Solderable per MIL-STD-202, Method 208
- Marking: Unidirectional: Type Number and Cathode Band
- Marking Bi-directional: Type Number Only
- Approx. Weight: 0.4 grams

DO-15		
Dim	Min	Max
A	25.40	—
B	5.50	7.62
C	0.686	0.889
D	2.60	3.6
All Dimensions in mm		

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

Characteristic	Symbol	Value	Unit
Peak Power Dissipation, $T_p = 1.0\text{ms}$ (Non repetitive current pulse, derated above $T_A = 25^\circ\text{C}$ )	$P_{pk}$	500	W
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 9.5 mm (Board mounted)	$P_d$	1.0	W
Peak Forward Surge Current, 8.3 Single Half Sine Wave Superimposed on Rated Load Duty Cycle = 4 pulses per minute maximum	$I_{FSM}$	70	A
Forward Voltage @ $I_F = 35\text{A}$ 300 $\mu\text{s}$ Square Wave Pulse, Unidirectional Only	$V_F$	3.5	V
Operating and Storage Temperature Range	$T_J, T_{STG}$	-65 to +175	$^\circ\text{C}$

- Notes:
1. Suffix "A" denotes unidirectional, suffix "CA" denotes bi-directional device.
  2. For bi-directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is doubled.



Type Number (Suffix C = Bidirectional) (Note 1)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR}$ @ $I_t$		Test Current	Max. Clamping Voltage @ $I_{PP}$	Max. Peak Pulse Current	Max. Reverse Leakage @ $V_R$ (Note 2)	Max. Voltage Temp. Variation of $V_{BR}$
		$V_R$ (V)	Min (V)					
SA5V0(C)A	5.0	6.40	7.00	10	9.2	54.3	600	5.0
SA6V0(C)A	6.0	6.67	7.37	10	10.3	48.5	600	5.0
SA6V5(C)A	6.5	7.22	7.98	10	11.2	44.7	400	5.0
SA7V0(C)A	7.0	7.78	8.60	10	12.0	41.7	150	6.0
SA7V5(C)A	7.5	8.33	9.21	1.0	12.9	38.8	50	7.0
SA8V0(C)A	8.0	8.89	9.83	1.0	13.6	36.7	25	7.0
SA8V5(C)A	8.5	9.44	10.4	1.0	14.4	34.7	10	8.0
SA9V0(C)A	9.0	10.0	11.1	1.0	15.4	32.5	5.0	9.0
SA10(C)A	10	11.1	12.3	1.0	17.0	29.4	3.0	10
SA11(C)A	11	12.2	13.5	1.0	18.2	27.4	3.0	11
SA12(C)A	12	13.3	14.7	1.0	19.9	25.1	3.0	12
SA13(C)A	13	14.4	15.9	1.0	21.5	23.2	3.0	13
SA14(C)A	14	15.6	17.2	1.0	23.2	21.5	3.0	14
SA15(C)A	15	16.7	18.5	1.0	24.4	20.6	3.0	16
SA16(C)A	16	17.8	19.7	1.0	26.0	19.2	3.0	17
SA17(C)A	17	18.9	20.9	1.0	27.6	18.1	3.0	19
SA18(C)A	18	20.0	22.1	1.0	29.2	17.2	3.0	20
SA20(C)A	20	22.2	24.5	1.0	32.4	15.4	3.0	23
SA22(C)A	22	24.4	26.9	1.0	35.5	14.1	3.0	25
SA24(C)A	24	26.7	29.5	1.0	38.9	12.8	3.0	28
SA26(C)A	26	28.9	31.9	1.0	42.1	11.9	3.0	30
SA28(C)A	28	31.1	34.4	1.0	45.4	11.0	3.0	31
SA30(C)A	30	33.3	36.8	1.0	48.4	10.3	3.0	36
SA33(C)A	33	36.7	40.6	1.0	53.3	9.4	3.0	39
SA36(C)A	36	40.0	44.2	1.0	58.1	8.6	3.0	41
SA40(C)A	40	44.4	49.1	1.0	64.5	7.8	3.0	46
SA43(C)A	43	47.8	52.8	1.0	69.4	7.2	3.0	50
SA45(C)A	45	50.0	55.3	1.0	72.7	6.9	3.0	52
SA48(C)A	48	53.3	58.9	1.0	77.4	6.5	3.0	56
SA51(C)A	51	56.7	62.7	1.0	82.4	6.1	3.0	61
SA54(C)A	54	60.0	66.3	1.0	87.1	5.7	3.0	65
SA58(C)A	58	64.4	71.2	1.0	93.6	5.3	3.0	70
SA60(C)A	60	66.7	73.7	1.0	96.8	5.2	3.0	71
SA64(C)A	64	71.1	78.6	1.0	103.0	4.9	3.0	76
SA70(C)A	70	77.8	86.0	1.0	113.0	4.4	3.0	85
SA75(C)A	75	83.3	92.1	1.0	121.0	4.1	3.0	91
SA78(C)A	78	86.7	95.8	1.0	126.0	4.0	3.0	95
SA85(C)A	85	94.4	104.0	1.0	137.0	3.6	3.0	103
SA90(C)A	90	100	111.0	1.0	146.0	3.4	3.0	110
SA100(C)A	100	111	123.0	1.0	162.0	3.1	3.0	123
SA110(C)A	110	122	135.0	1.0	177.0	2.8	3.0	133
SA120(C)A	120	133	147.0	1.0	193.0	2.6	3.0	146
SA130(C)A	130	144	159.0	1.0	209.0	2.4	3.0	158
SA150(C)A	150	167	185.0	1.0	243.0	2.1	3.0	184
SA160(C)A	160	178	197.0	1.0	259.0	1.9	3.0	196
SA170(C)A	170	189	209.0	1.0	275.0	1.8	3.0	208

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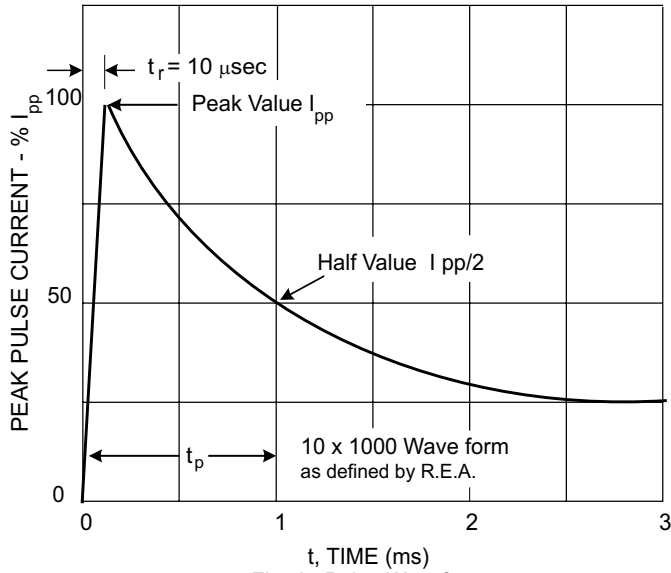


Fig. 1, Pulse Waveform

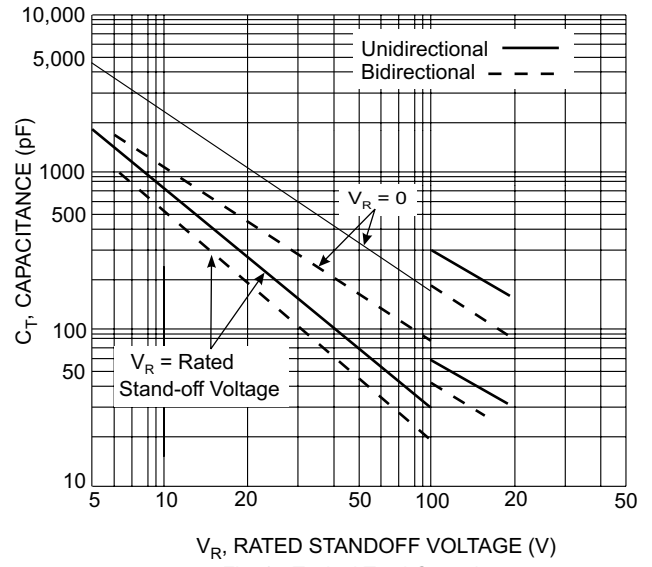


Fig. 2, Typical Total Capacitance

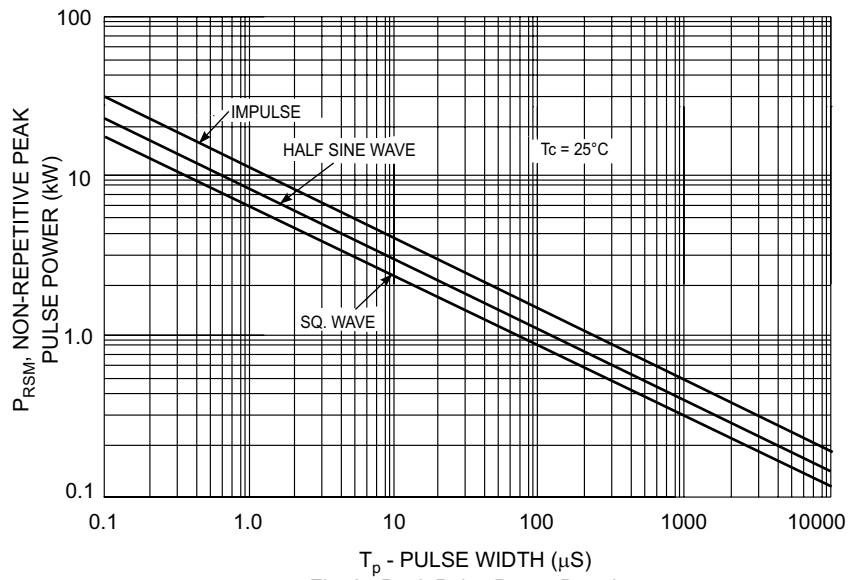


Fig. 3, Peak Pulse Power Derating

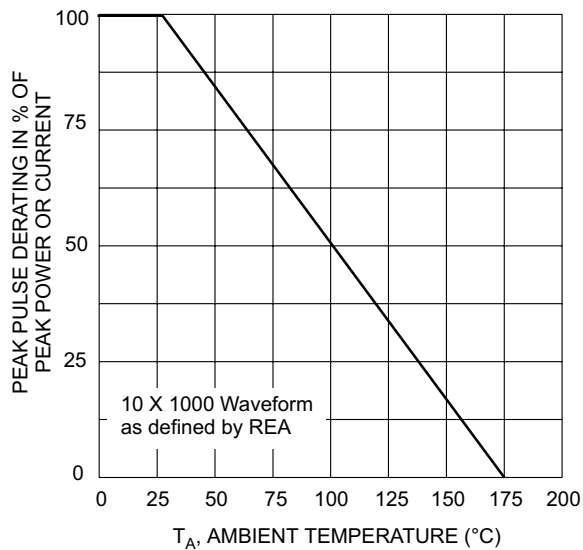


Fig. 4, Derating Curve

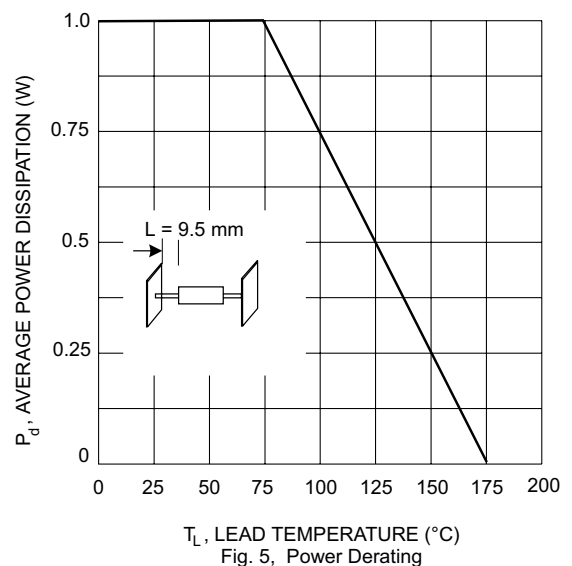


Fig. 5, Power Derating