

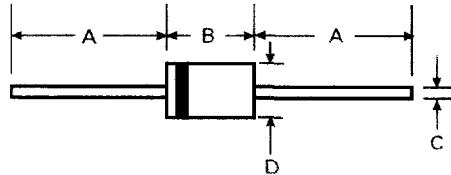


SA5.0A / CA - SA170A / CA

500W TRANSIENT VOLTAGE SUPPRESSORS

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 Bidirectional Versions Available



Mechanical Data

- Case: Transfer Molded Epoxy
- Leads: Plated Leads, Solderable per MIL-STD-202, Method 208
- Marking: Unidirectional - Type Number and Cathode Band
Bidirectional - Type Number Only
- Approx. Weight: 0.4 grams
- Mounting Position: Any

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 $T_p = 1$ ms (Non repetitive current pulse, and 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_L	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 μs Square Wave Pulse, Unidirectional Only	V_F	3.5	V
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$

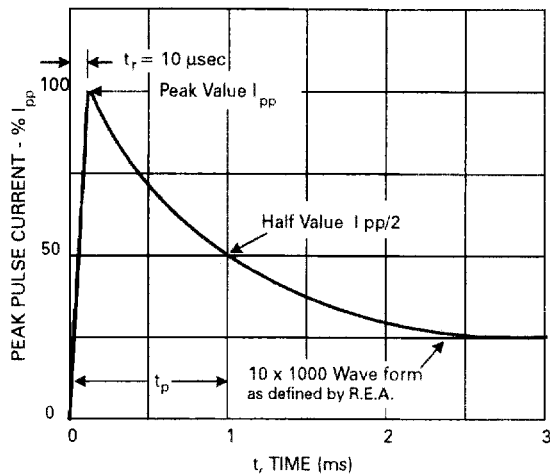


Fig. 1, Pulse Waveform

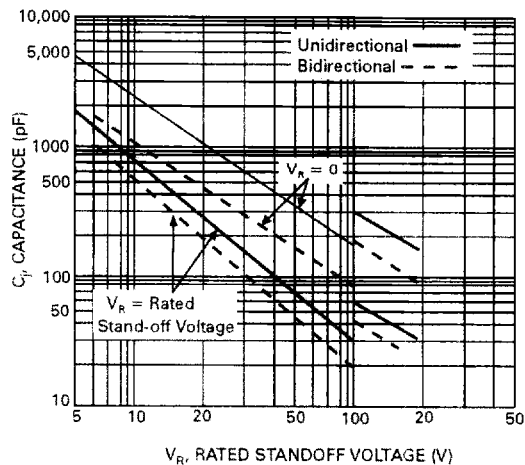


Fig. 2, Typical Junction Capacitance

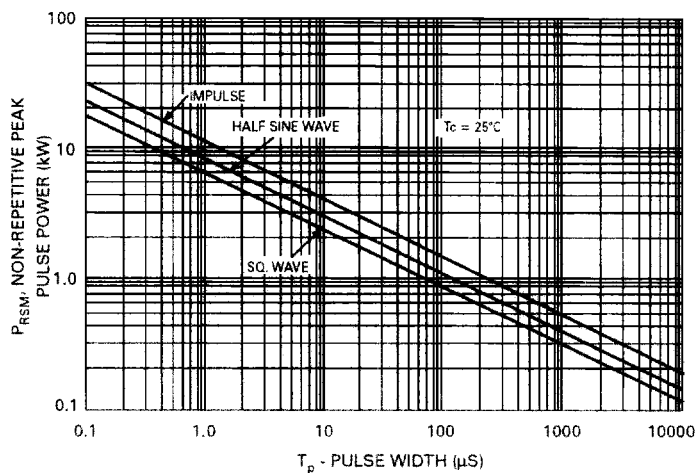


Fig. 3, Peak Pulse Power Derating

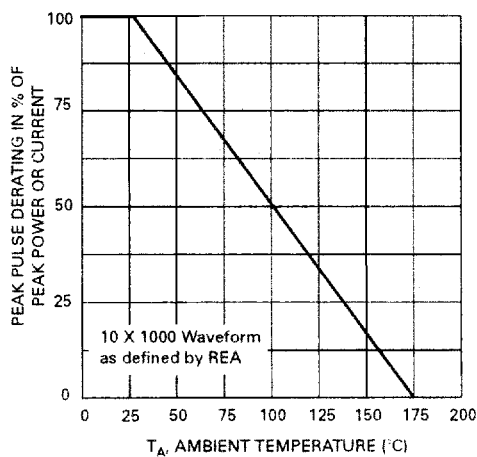


Fig. 4, Derating Curve

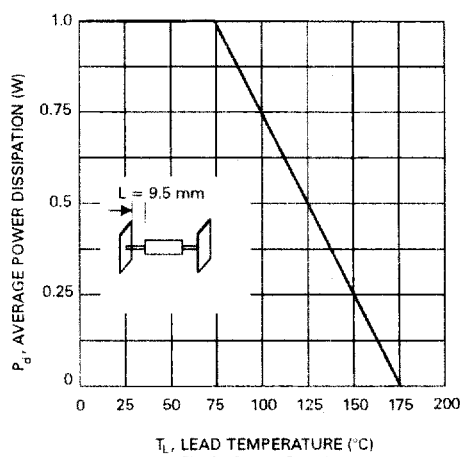


Fig. 5, Power Derating

Type Number (Suffix C = Bidirectional)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR} @ I_t$		Test Current	Max. Clamping Voltage	Max. Peak Pulse Current	Max. Reverse Leakage	Max. Voltage Temp. Variation of V_{BR}
		Min (V)	Max (V)		@ I_{PP}		@ V_R	
	V_R (V)			I_t (mA)	V_C (V)	I_{PP} (A)	I_R (μ A)	mV/°C
SA5.0	5.0	6.40	7.30	10	9.6	52.0	600	5.0
SA5.0A	5.0	6.40	7.00	10	9.2	54.3	600	5.0
SA6.0	6.0	6.67	8.15	10	11.4	43.9	600	5.0
SA6.0A	6.0	6.67	7.37	10	10.3	48.5	600	5.0
SA6.5	6.5	7.22	8.82	10	12.3	40.7	400	5.0
SA6.5A	6.5	7.22	7.98	10	11.2	44.7	400	5.0
SA7.0	7.0	7.78	9.51	10	13.3	37.8	150	6.0
SA7.0A	7.0	7.78	8.60	10	12.0	41.7	150	6.0
SA7.5	7.5	8.33	10.2	1.0	14.3	35.0	50	7.0
SA7.5A	7.5	8.33	9.21	1.0	12.9	38.8	50	7.0
SA8.0	8.0	8.89	10.9	1.0	15.0	33.3	25	7.0
SA8.0A	8.0	8.89	9.83	1.0	13.6	36.7	25	7.0
SA8.5	8.5	9.44	11.5	1.0	15.9	31.4	10	8.0
SA8.5A	8.5	9.44	10.4	1.0	14.4	34.7	10	8.0
SA9.0	9.0	10.0	12.2	1.0	16.9	29.5	5.0	9.0
SA9.0A	9.0	10.0	11.1	1.0	15.4	32.5	5.0	9.0
SA10	10	11.1	13.6	1.0	18.8	26.6	3.0	10
SA10A	10	11.1	12.3	1.0	17.0	29.4	3.0	10
SA11	11	12.2	14.9	1.0	20.1	24.9	3.0	11
SA11A	11	12.2	13.5	1.0	18.2	27.4	3.0	11
SA12	12	13.3	16.3	1.0	22.0	22.7	3.0	12
SA12A	12	13.3	14.7	1.0	19.9	25.1	3.0	12
SA13	13	14.4	17.6	1.0	23.8	21.0	3.0	13
SA13A	13	14.4	15.9	1.0	21.5	23.2	3.0	13
SA14	14	15.6	19.1	1.0	25.8	19.4	3.0	14
SA14A	14	15.6	17.2	1.0	23.2	21.5	3.0	14
SA15	15	16.7	20.4	1.0	26.9	18.8	3.0	16
SA15A	15	16.7	18.5	1.0	24.4	20.6	3.0	16
SA16	16	17.8	21.8	1.0	28.8	17.6	3.0	19
SA16A	16	17.8	19.7	1.0	26.0	19.2	3.0	17
SA17	17	18.9	23.1	1.0	30.5	16.4	3.0	20
SA17A	17	18.9	20.9	1.0	27.6	18.1	3.0	19
SA18	18	20.0	24.4	1.0	32.2	15.5	3.0	21
SA18A	18	20.0	22.1	1.0	29.2	17.2	3.0	20
SA20	20	22.2	27.1	1.0	35.8	13.9	3.0	25
SA20A	20	22.2	24.5	1.0	32.4	15.4	3.0	23
SA22	22	24.4	29.8	1.0	39.4	12.7	3.0	28
SA22A	22	24.4	26.9	1.0	35.5	14.1	3.0	25
SA24	24	26.7	32.6	1.0	43.0	11.6	3.0	31
SA24A	24	26.7	29.5	1.0	38.9	12.8	3.0	28
SA26	26	28.9	35.3	1.0	46.6	10.7	3.0	31
SA26A	26	28.9	31.9	1.0	42.1	11.9	3.0	30
SA28	28	31.1	38.0	1.0	50.0	9.9	3.0	35
SA28A	28	31.1	34.4	1.0	45.4	11.0	3.0	31
SA30	30	33.3	40.7	1.0	53.5	9.3	3.0	39
SA30A	30	33.3	36.8	1.0	48.4	10.3	3.0	36
SA33	33	36.7	44.9	1.0	59.0	8.5	3.0	42
SA33A	33	36.7	40.6	1.0	53.3	9.4	3.0	39

Type Number (Suffix C = Bidirectional)	Reverse Standoff Voltage	Breakdown Voltage $V_{BR} @ I_R$		Test Current	Max. Clamping Voltage @ I_{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V_R	Max. Voltage Temp. Variation of V_{BR}
	V_R (V)	Min (V)	Max (V)	I_R (mA)	V_C (V)	I_{PP} (A)	I_R (μ A)	mV/°C
SA36	36	40.0	48.9	1.0	64.3	7.8	3.0	46
SA36A	36	40.0	44.2	1.0	58.1	8.6	3.0	41
SA40	40	44.4	54.3	1.0	71.4	7.0	3.0	51
SA40A	40	44.4	49.1	1.0	64.5	7.8	3.0	46
SA43	43	47.8	58.4	1.0	76.7	6.5	3.0	55
SA43A	43	47.8	52.8	1.0	69.4	7.2	3.0	50
SA45	45	50.0	61.1	1.0	80.3	6.2	3.0	58
SA45A	45	50.0	55.3	1.0	72.7	6.9	3.0	52
SA48	48	53.3	65.1	1.0	85.5	5.8	3.0	63
SA48A	48	53.3	58.9	1.0	77.4	6.5	3.0	56
SA51	51	56.7	69.3	1.0	91.1	5.5	3.0	66
SA51A	51	56.7	62.7	1.0	82.4	6.1	3.0	61
SA54	54	60.0	73.3	1.0	96.3	5.2	3.0	71
SA54A	54	60.0	66.3	1.0	87.1	5.7	3.0	65
SA58	58	64.4	78.7	1.0	103.0	4.9	3.0	78
SA58A	58	64.4	71.2	1.0	93.6	5.3	3.0	70
SA60	60	66.7	81.5	1.0	107.0	4.7	3.0	80
SA60A	60	66.7	73.7	1.0	96.8	5.2	3.0	71
SA64	64	71.1	86.9	1.0	114.0	4.4	3.0	86
SA64A	64	71.1	78.6	1.0	103.0	4.9	3.0	76
SA70	70	77.8	95.1	1.0	125.0	4.0	3.0	94
SA70A	70	77.8	86.0	1.0	113.0	4.4	3.0	85
SA75	75	83.3	102.0	1.0	134.0	3.7	3.0	101
SA75A	75	83.3	92.1	1.0	121.0	4.1	3.0	91
SA78	78	86.7	106.0	1.0	139.0	3.6	3.0	105
SA78A	78	86.7	95.8	1.0	126.0	4.0	3.0	95
SA85	85	94.4	115.0	1.0	151.0	3.3	3.0	114
SA85A	85	94.4	104.0	1.0	137.0	3.6	3.0	103
SA90	90	100	122.0	1.0	160.0	3.1	3.0	121
SA90A	90	100	111.0	1.0	146.0	3.4	3.0	110
SA100	100	111	136.0	1.0	179.0	2.9	3.0	135
SA100A	100	111	123.0	1.0	162.0	3.1	3.0	123
SA110	110	122	149.0	1.0	196.0	2.6	3.0	148
SA110A	110	122	135.0	1.0	177.0	2.8	3.0	133
SA120	120	133	163.0	1.0	214.0	2.3	3.0	162
SA120A	120	133	147.0	1.0	193.0	2.0	3.0	146
SA130	130	144	176.0	1.0	231.0	2.2	3.0	175
SA130A	130	144	159.0	1.0	209.0	2.4	3.0	158
SA150	150	167	204.0	1.0	268.0	1.9	3.0	203
SA150A	150	167	185.0	1.0	243.0	2.1	3.0	184
SA160	160	178	218.0	1.0	287.0	1.7	3.0	217
SA160A	160	178	197.0	1.0	259.0	1.9	3.0	196
SA170	170	189	231.0	1.0	304.0	1.6	3.0	230
SA170A	170	189	209.0	1.0	275.0	1.8	3.0	208

Notes: 1. Suffix 'C' denotes Bi-directional device. Suffix 'A' denotes 5% tolerance device, no suffix denotes 10% tolerance device.
2. For Bi-directional devices having V_R of 10 volts and under, the I_R limit is doubled.
3. Type Number marking may contain a "V" or dash in place of decimal point.