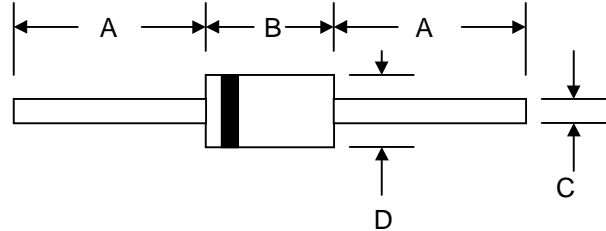


SA5.0(C)A -SA170(C)A

500 Watts Axial Leaded Transient Voltage Suppressors

- Glass Passivated Die Construction
- 500W Peak Pulse Power Dissipation
- 5.0V – 170V 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: JEDEC DO-15 Low Profile Molded Plastic
- Terminals: Axial Leads, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:
Unidirectional – Device Code and Cathode Band
Bidirectional – Device Code Only
- Weight: 0.40 grams (approx.)

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 μS Waveform (Note 1) Figure 1	IPPM	See Table 1	A
Steady State Power Dissipation (Note 2, 4)	$P_{M(AV)}$	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 40mm² copper pad.
 3. 8.3ms single half sine-wave duty cycle = 4 pulses per minutes maximum.
 4. Lead temperature at $75^{\circ}\text{C} = T_L$.
 5. Peak pulse power waveform is 10/1000 μS .



ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ It (Note 1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ VRWM	Maximum Reverse Current	Maximum Clamping Voltage @ IRSM	Maximum Voltage Temperature Variation of VBR
	VBR (V)		It					
	Min.	Max.	(mA)	(V)	(μ A)	(A)	(V)	(mV / °C)
SA5.0CA	6.40	7.3	10	5.0	600	52.0	9.6	5.0
SA5.0A	6.40	7.0	10	5.0	600	54.3	9.2	5.0
SA6.0CA	6.67	8.15	10	6.0	600	43.9	11.4	5.0
SA6.0A	6.67	7.37	10	6.0	600	48.5	10.3	5.0
SA6.5CA	7.22	8.82	10	6.5	400	40.7	12.3	5.0
SA6.5A	7.22	7.98	10	6.5	400	44.7	11.2	5.0
SA7.0CA	7.78	9.51	10	7.0	150	37.8	13.3	6.0
SA7.0A	7.78	8.60	10	7.0	150	41.7	12.0	6.0
SA7.5CA	8.33	10.2	1.0	7.5	50	35.0	14.3	7.0
SA7.5A	8.33	9.21	1.0	7.5	50	38.8	12.9	7.0
SA8.0CA	8.89	10.9	1.0	8.0	25	33.3	15.0	7.0
SA8.0A	8.89	9.83	1.0	8.0	25	36.7	13.6	
SA8.5CA	9.44	11.5	1.0	8.5	5.0	31.4	15.9	8.0
SA8.5A	9.44	10.4	1.0	8.5	5.0	34.7	14.4	8.0
SA9.0CA	10.0	12.2	1.0	9.0	1.0	29.5	16.9	9.0
SA9.0A	10.0	11.1	1.0	9.0	1.0	32.5	15.4	9.0
SA10CA	11.1	13.6	1.0	10.0	1.0	26.6	18.8	10.0
SA10A	11.1	12.3	1.0	10.0	1.0	29.4	17.0	10.0
SA11CA	12.2	14.9	1.0	11.0	1.0	24.9	20.1	11.0
SA11A	12.2	13.5	1.0	11.0	1.0	27.4	18.2	11.0
SA12CA	13.3	16.3	1.0	12.0	1.0	22.7	22.0	12.0
SA12A	13.3	14.7	1.0	12.0	1.0	25.1	19.9	12.0
SA13CA	14.4	17.6	1.0	13.0	1.0	21.0	23.8	13.0
SA13A	14.4	15.9	1.0	13.0	1.0	23.2	21.5	13.0
SA14CA	15.6	19.1	1.0	14.0	1.0	19.4	25.8	14.0
SA14A	15.6	17.2	1.0	14.0	1.0	21.5	23.2	14.0
SA15CA	16.7	20.4	1.0	15.0	1.0	18.8	26.9	16.0
SA15A	16.7	18.5	1.0	15.0	1.0	20.6	24.4	16.0
SA16CA	17.8	21.8	1.0	16.0	1.0	17.6	28.8	19.0
SA16A	17.8	19.7	1.0	16.0	1.0	19.2	26.0	17.0
SA17CA	18.9	23.1	1.0	17.0	1.0	16.4	30.5	20.0
SA17A	18.9	20.9	1.0	17.0	1.0	18.1	27.6	19.0
SA18CA	20.0	24.4	1.0	18.0	1.0	15.5	32.2	21.0
SA18A	20.0	22.1	1.0	18.0	1.0	17.2	29.2	20.0
SA20CA	22.2	27.1	1.0	20.0	1.0	13.9	35.8	25.0
SA20A	22.2	24.5	1.0	20.0	1.0	15.4	32.4	23.0
SA22CA	24.4	29.8	1.0	22.0	1.0	12.7	39.4	28.0
SA22A	24.4	26.9	1.0	22.0	1.0	14.1	35.5	25.0
SA24CA	26.7	32.6	1.0	24.0	1.0	11.6	43.0	31.0
SA24A	26.7	29.5	1.0	24.0	1.0	12.8	38.9	28.0
SA26CA	28.9	35.3	1.0	26.0	1.0	10.7	46.6	31.0
SA26A	28.9	31.9	1.0	26.0	1.0	11.9	42.1	30.0
SA28CA	31.1	38.0	1.0	28.0	1.0	9.9	50.0	35.0
SA28A	31.1	34.4	1.0	28.0	1.0	11.0	45.4	
SA30CA	33.3	40.7	1.0	30.0	1.0	9.3	53.5	39.0
SA30A	33.3	36.8	1.0	30.0	1.0	10.3	48.4	36.0
SA33CA	36.7	44.9	1.0	33.0	1.0	8.5	59.0	42.0
SA33A	36.7	40.6	1.0	33.0	1.0	9.4	53.3	39.0



ELECTRICAL CHARACTERISTICS

Rating at = 25 °C ambient temperature unless otherwise specified

TYPE	Breakdown Voltage @ I_t (Note 1)		Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{RWM}	Maximum Reverse Current	Maximum Clamping Voltage @ I_{RSM}	Maximum Voltage Temperature Variation of V_{BR}	
	V_{BR} (V)							I_t
	Min.	Max.	(mA)	(V)	(μ A)	(A)	(V)	(mV / °C)
SA36CA	40.0	48.9	1.0	36.0	1.0	7.8	64.3	46.0
SA36A	40.0	44.2	1.0	36.0	1.0	8.6	58.1	41.0
SA40CA	44.4	54.3	1.0	40.0	1.0	7.0	71.4	51.0
SA40A	44.4	49.1	1.0	40.0	1.0	7.8	64.5	46.0
SA43CA	47.8	58.4	1.0	43.0	1.0	6.5	76.7	55.0
SA43A	47.8	52.8	1.0	43.0	1.0	7.2	69.4	50.0
SA45CA	50.0	61.1	1.0	45.0	1.0	6.2	80.3	58.0
SA45A	50.0	55.3	1.0	45.0	1.0	6.9	72.7	52.0
SA48CA	53.3	65.1	1.0	48.0	1.0	5.8	85.5	63.0
SA48A	53.3	58.9	1.0	48.0	1.0	6.5	77.4	56.0
SA51CA	56.7	69.3	1.0	51.0	1.0	5.5	91.1	66.0
SA51A	56.7	62.7	1.0	51.0	1.0	6.1	82.4	61.0
SA54CA	60.0	73.3	1.0	54.0	1.0	5.2	96.3	71.0
SA54A	60.0	66.3	1.0	54.0	1.0	5.7	87.1	65.0
SA58CA	64.4	78.7	1.0	58.0	1.0	4.9	103	78.0
SA58A	64.4	71.2	1.0	58.0	1.0	5.3	93.6	70.0
SA60CA	66.7	81.5	1.0	60.0	1.0	4.7	107	80.0
SA60A	66.7	73.7	1.0	60.0	1.0	5.2	96.8	71.0
SA64CA	71.1	86.9	1.0	64.0	1.0	4.4	114	86.0
SA64A	71.1	78.6	1.0	64.0	1.0	4.9	103	76.0
SA70CA	77.8	95.1	1.0	70.0	1.0	4.0	125	94.0
SA70A	77.8	86.0	1.0	70.0	1.0	4.4	113	85.0
SA75CA	83.3	102	1.0	75.0	1.0	3.7	134	101
SA75A	83.3	92.1	1.0	75.0	1.0	4.1	121	91.0
SA78CA	86.7	106	1.0	78.0	1.0	3.6	139	105
SA78A	86.7	95.8	1.0	78.0	1.0	4.0	126	95.0
SA85CA	94.4	115	1.0	85.0	1.0	3.3	151	114
SA85A	94.4	104	1.0	85.0	1.0	3.6	137	103
SA90CA	100	122	1.0	90.0	1.0	3.1	160	121
SA90A	100	111	1.0	90.0	1.0	3.4	146	110
SA100CA	111	136	1.0	100	1.0	2.8	179	135
SA100A	111	123	1.0	100	1.0	3.1	162	123
SA110CA	122	149	1.0	110	1.0	2.6	196	148
SA110A	122	135	1.0	110	1.0	2.8	177	133
SA120CA	133	163	1.0	120	1.0	2.3	214	162
SA120A	133	147	1.0	120	1.0	2	193	146
SA130CA	144	176	1.0	130	1.0	2.2	231	175
SA130A	144	159	1.0	130	1.0	2.4	209	158
SA150CA	167	204	1.0	150	1.0	1.9	268	203
SA150A	167	185	1.0	150	1.0	2.1	243	184
SA160CA	178	218	1.0	160	1.0	1.7	287	217
SA160A	178	197	1.0	160	1.0	1.9	259	196
SA170CA	189	231	1.0	170	1.0	1.6	304	230
SA170A	189	209	1.0	170	1.0	1.8	275	208

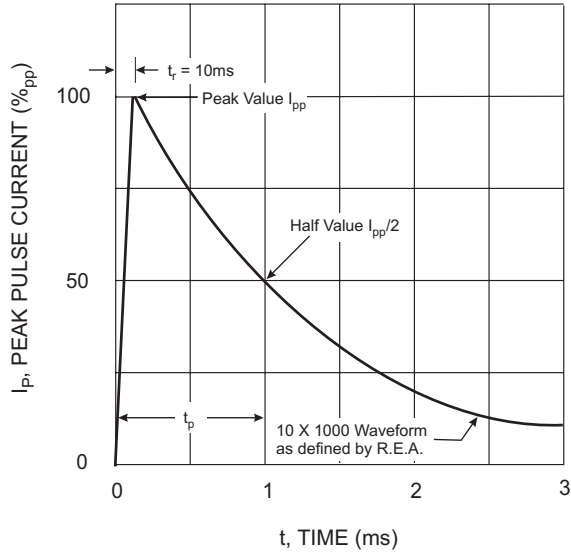


Fig. 1 Pulse Waveform

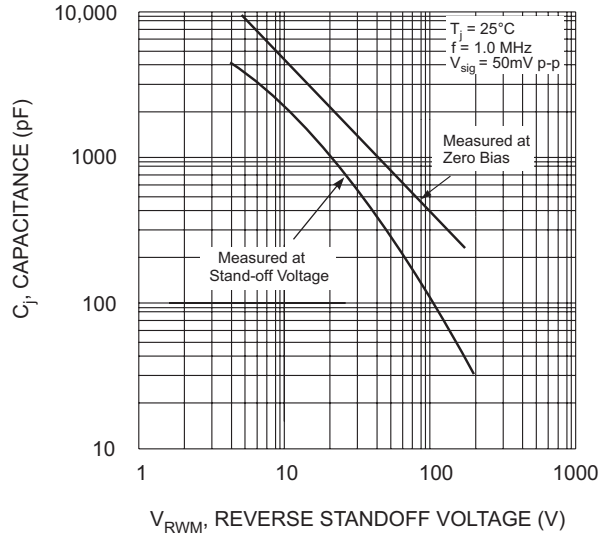


Fig. 2 Typical Junction Capacitance

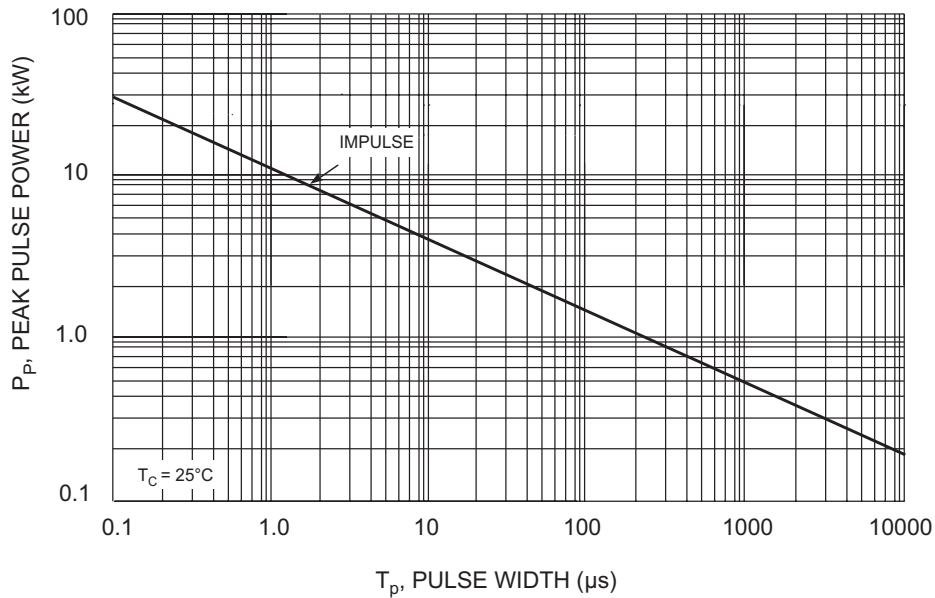


Fig. 3 Pulse Rating Curve

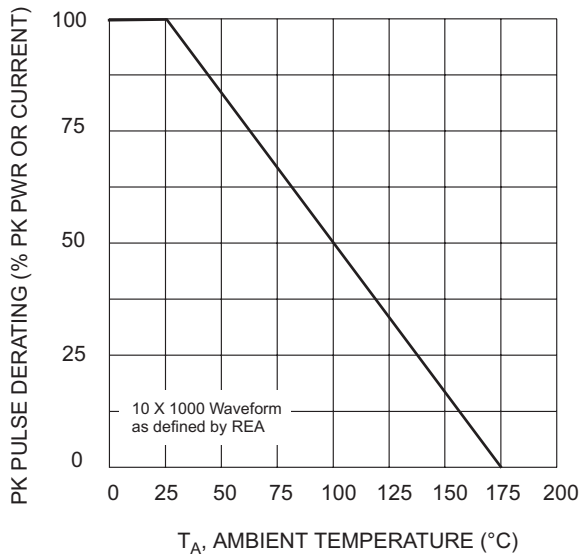


Fig. 4 Pulse Derating Curve

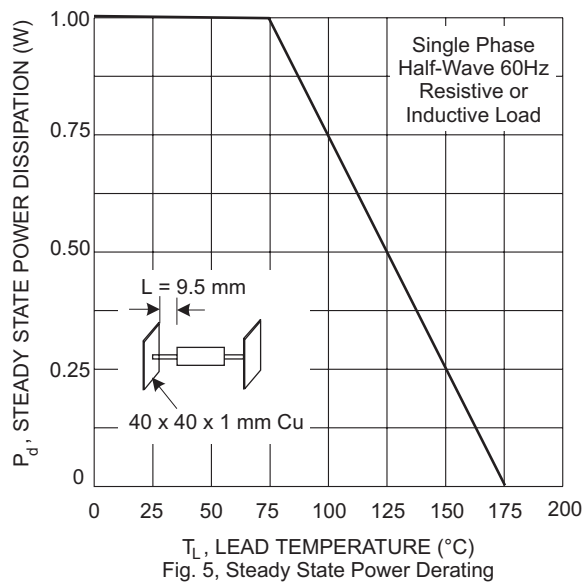


Fig. 5, Steady State Power Derating