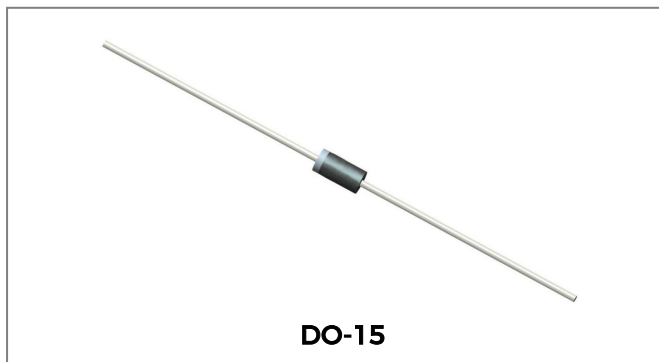


## SA SERIES TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 500W Peak Pulse Power Dissipation
- 5V- 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb - Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



**Unipolar**



**Bipolar**

### Mechanical Data

- Case: JEDEC DO-15 Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band or Cathode Notch
- Weight:0.41 grams(approx.)

### Maximum Ratings and Thermal Characteristics@T<sub>A</sub>=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C (Fig.1)(Note 1, 2, 5)	P <sub>PPM</sub>	500	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Fig.6 (Note 3)	I <sub>FSM</sub>	70	A
Steady State Power Dissipation( Note 2, 4)	P <sub>M(AV)</sub>	3.0	W
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	20	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	75	°C/W
Operating Junction and Storage Temperature Range	T <sub>J</sub> ,T <sub>STG</sub>	-65 to + 175	°C

- Notes:**
1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.
  2. Mounted on 40mm<sup>2</sup> copper pad.
  3. 8.3ms Single Half Sine Wave duty cycle = 4 pulses per minutes maximum
  4. Lead temperature at 75°C= T<sub>L</sub>
  5. Peak pulse power waveform is 10/1000µs.

Technical Data  
Data Sheet N0221, Rev. A



**Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	BI-POLAR	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)
SA5.0A	SA5.0CA	5	6.4	7	10	9.2	55.4	600
SA6.0A	SA6.0CA	6	6.67	7.37	10	10.3	49.5	600
SA6.5A	SA6.5CA	6.5	7.22	7.98	10	11.2	45.5	400
SA7.0A	SA7.0CA	7	7.78	8.6	10	12	42.5	150
SA7.5A	SA7.5CA	7.5	8.33	9.21	1	12.9	39.5	50
SA8.0A	SA8.0CA	8	8.89	9.83	1	13.6	37.5	25
SA8.5A	SA8.5CA	8.5	9.44	10.4	1	14.4	35.4	10
SA9.0A	SA9.0CA	9	10	11.1	1	15.4	33.1	5
SA10A	SA10CA	10	11.1	12.3	1	17	30	3
SA11A	SA11CA	11	12.2	13.5	1	18.2	28	3
SA12A	SA12CA	12	13.3	14.7	1	19.9	25.6	3
SA13A	SA13CA	13	14.4	15.9	1	21.5	23.7	3
SA14A	SA14CA	14	15.6	17.2	1	23.2	22	3
SA15A	SA15CA	15	16.7	18.5	1	24.4	20.9	3
SA16A	SA16CA	16	17.8	19.7	1	26	19.6	3
SA17A	SA17CA	17	18.9	20.9	1	27.6	18.5	3
SA18A	SA18CA	18	20	22.1	1	29.2	17.5	3
SA20A	SA20CA	20	22.2	24.5	1	32.4	15.7	3
SA22A	SA22CA	22	24.4	26.9	1	35.5	14.4	3
SA24A	SA24CA	24	26.7	29.5	1	38.9	13.1	3
SA26A	SA26CA	26	28.9	31.9	1	42.1	12.1	3
SA28A	SA28CA	28	31.1	34.4	1	45.4	11.2	3
SA30A	SA30CA	30	33.3	36.8	1	48.4	10.5	3
SA33A	SA33CA	33	36.7	40.6	1	53.3	9.6	3
SA36A	SA36CA	36	40	44.2	1	58.1	8.8	3
SA40A	SA40CA	40	44.4	49.1	1	64.5	7.9	3
SA43A	SA43CA	43	47.8	52.8	1	69.4	7.3	3
SA45A	SA45CA	45	50	55.3	1	72.7	7	3
SA48A	SA48CA	48	53.3	58.9	1	77.4	6.6	3
SA51A	SA51CA	51	56.7	62.7	1	82.4	6.2	3
SA54A	SA54CA	54	60	66.3	1	87.1	5.9	3
SA58A	SA58CA	58	64.4	71.2	1	93.6	5.4	3
SA60A	SA60CA	60	66.7	73.7	1	96.8	5.3	3
SA64A	SA64CA	64	71.1	78.6	1	103	5	3
SA70A	SA70CA	70	77.8	86	1	113	4.5	3
SA75A	SA75CA	75	83.3	92.1	1	121	4.2	3
SA78A	SA78CA	78	86.7	95.8	1	126	4	3
SA85A	SA85CA	85	94.4	104	1	137	3.7	3
SA90A	SA90CA	90	100	111	1	146	3.5	3
SA100A	SA100CA	100	111	123	1	162	3.1	3
SA110A	SA110CA	111	122	135	1	177	2.9	3
SA120A	SA120CA	120	133	147	1	193	2.6	3
SA130A	SA130CA	130	144	159	1	209	2.4	3
SA150A	SA150CA	150	167	185	1	243	2.1	3
SA160A	SA160CA	160	178	197	1	259	2	3
SA170A	SA170CA	170	189	209	1	275	1.9	3

For bidirectional type having VR of 10 volts and less, the IR limit is double.  
For parts without A, the VBR is + 10% and Vc is 5% higher than with A parts.

**Ratings and Characteristics Curves**

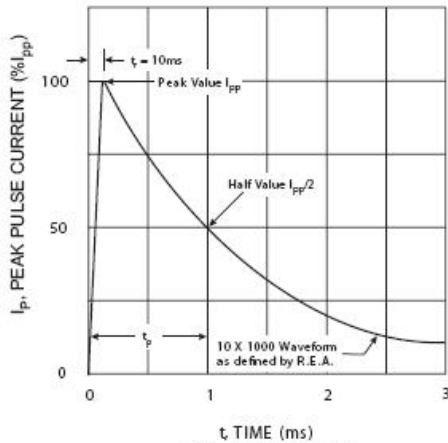


Fig. 1 Pulse Waveform

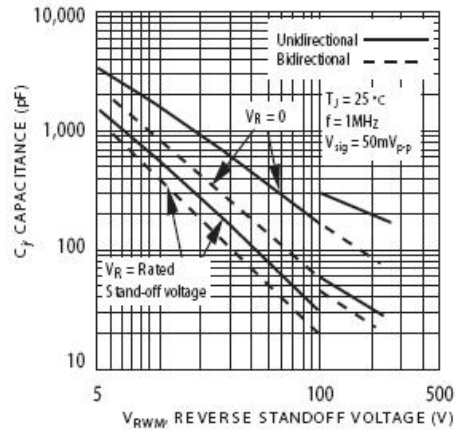


Fig. 2 Typical Junction Capacitance

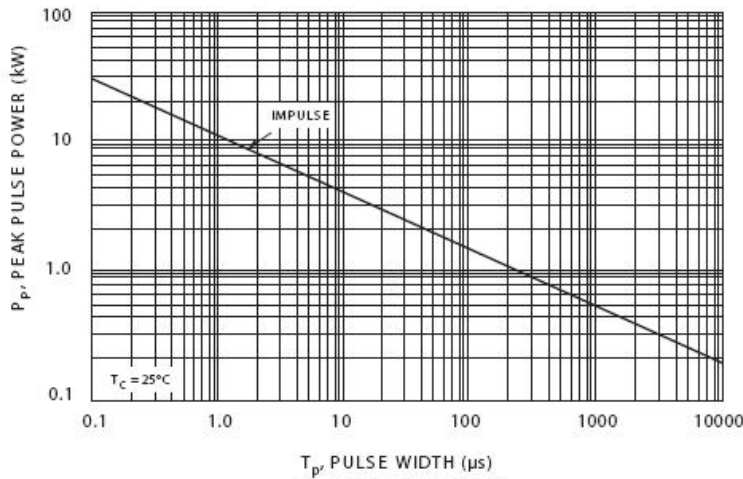


Fig. 3 Pulse Rating Curve

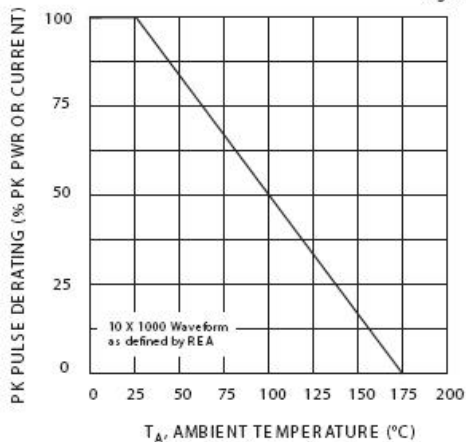


Fig. 4 Pulse Derating Curve

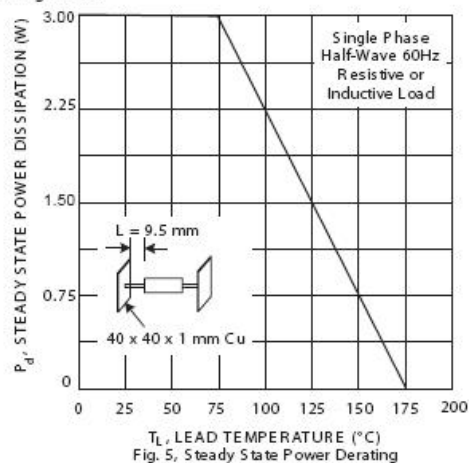
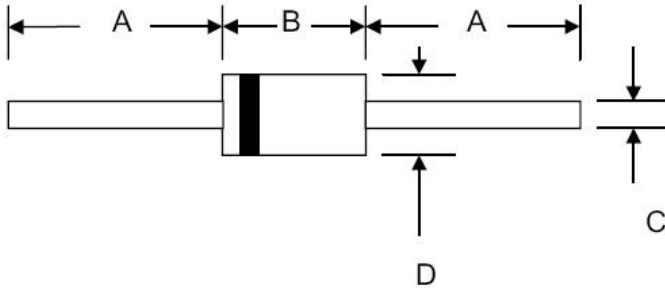


Fig. 5, Steady State Power Derating

**Mechanical Dimensions DO-15**



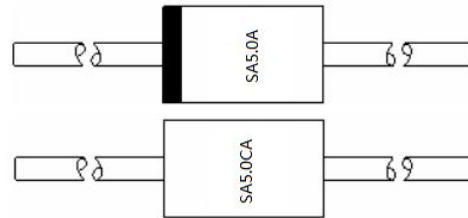
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	-	1.000	-
B	5.5	7.62	0.217	0.300
C	0.7	0.9	0.028	0.034
D	2.6	3.6	0.104	0.140

**Ordering Information**

Device	Package	Shipping
SA SERIES	DO-15 (Pb-Free)	3000pcs / tape
SA SERIES TA	DO-15 (Pb-Free)	3000pcs / tape

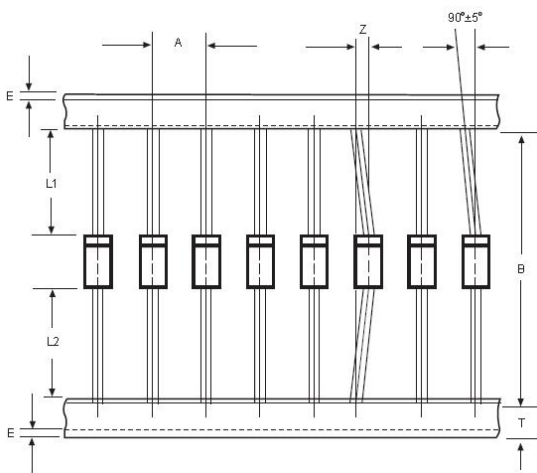
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**



SA5.0A/SA5.0CA = Part Name

**Carrier Tape Specification DO-15**



SYMBOL	Millimeters	
	Min.	Max.
A	4.50	5.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0



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