



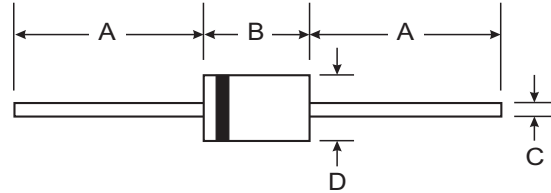
THE DATASHEET OF SA12A-T



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)
- Available in Lead Free Finish/RoHS Compliant Version (Note 3)

NOT RECOMMENDED FOR NEW DESIGN
SUGGESTED REPLACEMENT P6KE6V8A - P6KE200A



Mechanical Data

- Case: DO-15
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Leads: Plated Leads, Solderable per MIL-STD-202, Method 208
- Also Available in Lead Free Plating (Matte Tin Finish).
- Marking: Unidirectional: Type Number and Cathode Band
- Marking Bi-directional: Type Number Only
- Weight: 0.4 grams (approximate)

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 μs Square Wave Pulse, Unidirectional Only	V_F	3.5	V
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$

- 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.
 3. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.

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)	Max (V)	I_t (mA)	V_C (V)	I_{PP} (A)	I_R (A)	mV/°C
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

Notes: 1. Suffix "A" denotes unidirectional, suffix "CA" denotes bi-directional device.
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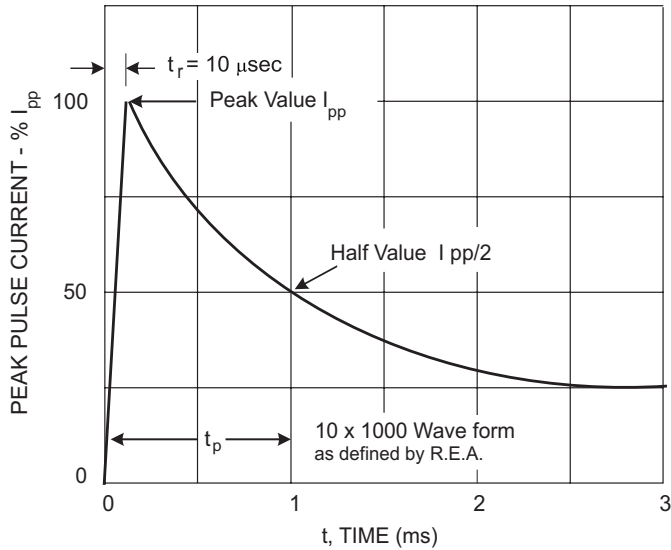


Fig. 1, Pulse Waveform

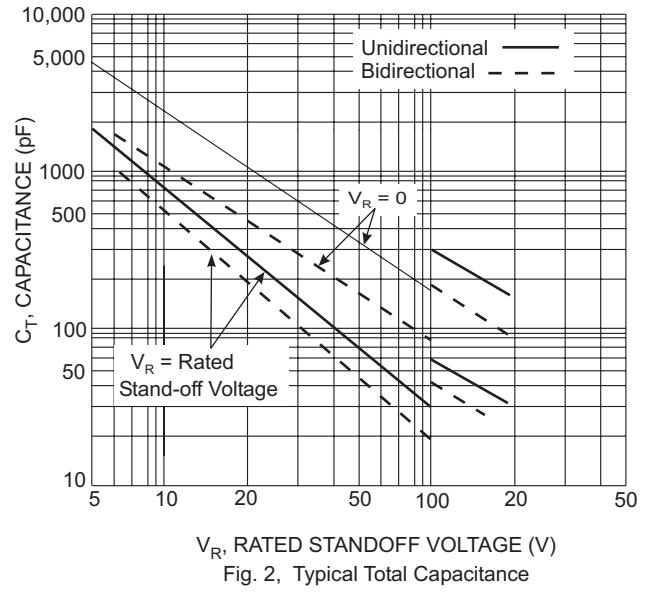


Fig. 2, Typical Total Capacitance

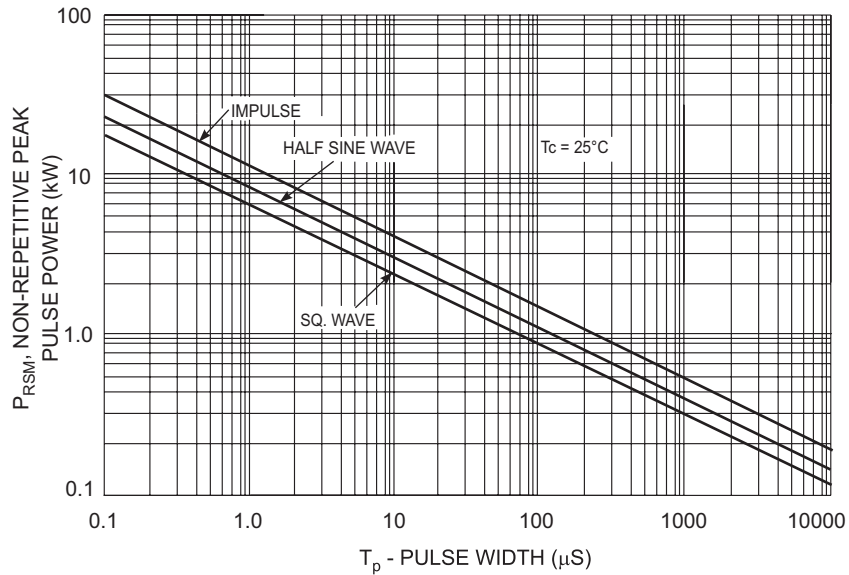


Fig. 3, Peak Pulse Power Derating

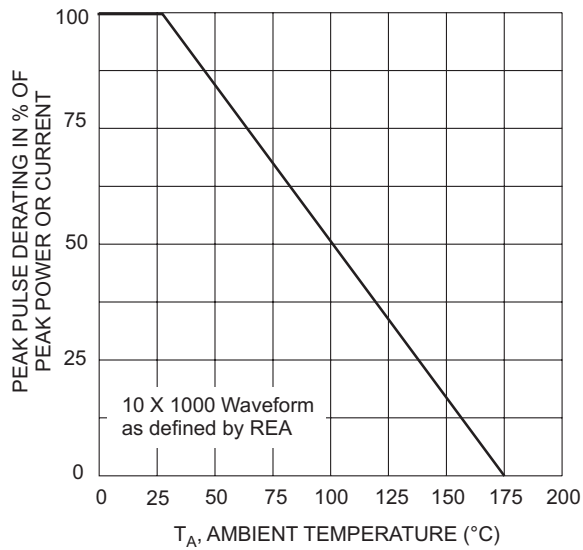


Fig. 4, Derating Curve

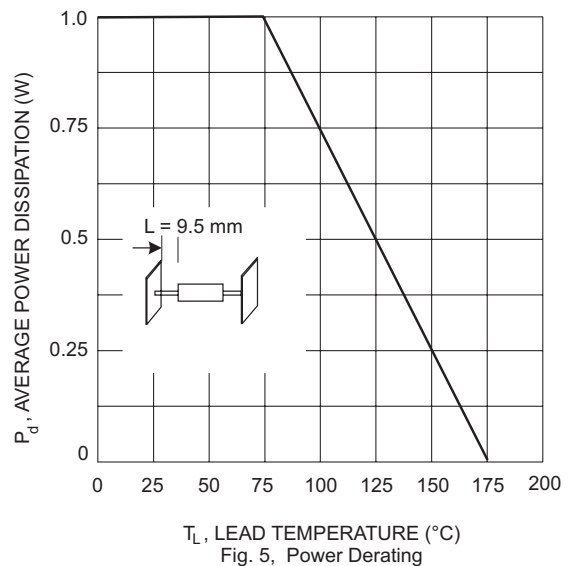


Fig. 5, Power Derating

Ordering Information (Note 5)

Device	Packaging	Shipping
(Type Number)-B*	DO-15	1K/Bulk
(Type Number)-T*	DO-15	4K/Tape & Reel, 13-inch

- Notes:
- *Add "-B" or "-T" to the appropriate type number in Table 1 on Page 2. Example: 6.5V TVS = SA6V5(C)A-B.
 - For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

Looking for pricing, stock, or lifecycle information?

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