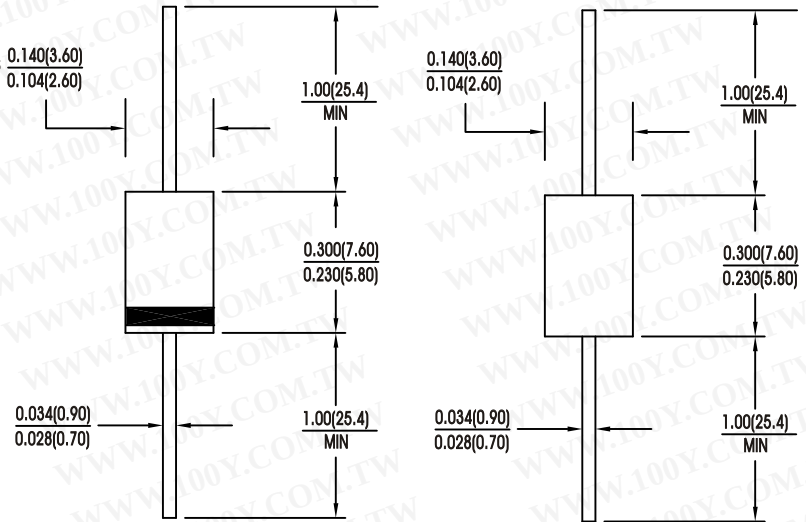


SA5.0(A) THRU SA170(A)
SA5.0A(CA) THRU SA170A(CA)
VOLTAGE - 5.0 TO 170 VOLTS 500 WATT PEAK POWER

FEATURES:

- Plastic package has Underwrites Laboratory Flammability Classification 94V-0
- 500W peak pulse power surge capability at 10/1000us
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time : typically less than 1.0 ps from 0 volts to V_{BR} for uni-directional and 5.0ns for bi-directional types
- For devices with $V_{BR} \geq 10V$, Typical I_R less than 1uA above 10V
- High temperature soldering guaranteed :
260°C /10 seconds/0.375"(9.5mm)
lead length/5lbs(2.3kg) tension

DO-201AC / DO-15



Suffix " ", "A"

UNDIRECTIONAL

Suffix "C", "CA"

DIRECTIONAL

Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: Molded plastic

Terminals: Axial leads, Solderable per
MIL-STD-202, Method 208

Polarity: Color band denoted positive end
except Bidirectionals

Mounting Position: Any

Weight: 0.40 grams

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25° C ambient temp. unless otherwise specified.

Single phase, half sine wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20 %.

Characteristic	Symbol	Value	Units
Minimum peak power dissipation on 10/1000us waveform (note1,fig.1) $T_a = 25^\circ C$	P_{PK}	500	W
Maximum peak pulse current of on 10/1000us waveform (note1,fig3)	I_{PPM}	SEE TABLE1 ~3	Amps
Steady state power dissipation at $T_L = 75^\circ C$ LEAD LENGTHS .375"(9.5mm)(note 2)	$PM(AV)$	1.0	Watts
Maximum forward Surge current, 8.3ms Single Half Sine-Wave Superimposed on rated load (Jedec Method) Unidirectional only (NOTE3)	I_{FSM}	70	Amps
Maximum instantaneous forward voltage at 35.0A for unidirectional only(note 3)	V_F	3.5	Volts
Operating and storage temperature range	T_J, T_{stg}	-55 to +175	°C

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above $T_a = 25^\circ C$ per Fig.2

2. Mounted on Copper Lead area of 1.60x1.60" (40x40mm)

3. 8.3ms Single half sine-wave or equivalent square, duty cycle=4pulse per minutes maximum

4. For bidirectional use "C" Suffix, "CA" suffix

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RATINGS AND CHARACTERISTIC CURVES SA5.0(A)(C)(CA) THRU SA170(A)(C)(CA)

TABLE 1

Device Type	Breakdown V _{BR} Voltage at I _T (Voltage)		Test Current I _T	Working Peak Reverse Voltage V _{RWM}	Maximum Reverse Leakage at V _{RWM} I _R (μ A)	Maximum Peak Pulse Current I _{PPM}	Maximum Clamping Voltage V _C	Maximum Temperature coefficient of V _{BR}	Device
	Min	Max							
SA5.0(C)	6.40	7.30	10	5.50	600	52.0	9.60	5.00	
SA5.0A(CA)	6.40	7.00	10	5.50	600	54.3	9.20	5.00	
SA6.0(C)	6.67	8.15	10	6.00	600	43.9	11.4	5.00	
SA6.0A(CA)	6.67	7.37	10	6.00	600	48.5	10.3	5.00	
SA6.5(C)	7.22	8.82	10	6.50	400	40.7	12.3	5.00	
SA6.5A(CA)	7.22	7.98	10	6.50	400	44.7	11.2	5.00	
SA7.0(C)	7.78	9.51	10	7.00	150	37.8	13.3	6.00	
SA7.0A(CA)	7.78	8.60	10	7.00	150	41.7	12.0	6.00	
SA7.5(C)	8.33	10.2	1.0	7.50	50	35.0	14.3	7.00	
SA7.5A(CA)	8.33	9.21	1.0	7.50	50	38.8	12.9	7.00	
SA8.0(C)	8.89	10.9	1.0	8.00	25	33.3	15.0	7.00	
SA8.0A(CA)	8.89	9.83	1.0	8.00	25	36.8	13.6	7.00	
SA8.5(C)	9.44	11.5	1.0	8.50	10	31.4	15.9	8.00	
SA8.5A(CA)	9.44	10.4	1.0	8.50	10	34.7	14.4	8.00	
SA9.0(C)	10.0	12.2	1.0	9.00	5.0	29.5	16.9	9.00	
SA9.0A(CA)	10.0	11.1	1.0	9.00	5.0	32.5	15.4	9.00	
SA10(C)	11.1	13.6	1.0	10.0	1.0	26.6	18.8	10.0	
SA10A(CA)	11.1	12.3	1.0	10.0	1.0	29.4	17.0	10.0	
SA11(C)	12.2	14.9	1.0	11.0	1.0	24.9	20.1	11.0	
SA11A(CA)	12.2	13.5	1.0	11.0	1.0	27.4	18.2	11.0	
SA12(C)	13.3	16.3	1.0	12.0	1.0	22.7	22.0	12.0	
SA12A(CA)	13.3	14.7	1.0	12.0	1.0	25.1	19.9	12.0	
SA13(C)	14.4	17.6	1.0	13.0	1.0	21.0	23.8	13.0	
SA13A(CA)	14.4	15.9	1.0	13.0	1.0	23.2	21.5	13.0	
SA14(C)	15.6	19.1	1.0	14.0	1.0	19.4	25.8	14.0	
SA14A(CA)	15.6	17.2	1.0	14.0	1.0	21.5	23.2	14.0	
SA15(C)	16.7	20.4	1.0	15.0	1.0	18.8	26.9	16.0	
SA15A(CA)	16.7	18.5	1.0	15.0	1.0	20.6	24.4	16.0	
SA16(C)	17.8	21.8	1.0	16.0	1.0	17.6	28.8	19.0	
SA16A(CA)	17.8	19.7	1.0	16.0	1.0	19.2	26.0	17.0	
SA17(C)	18.9	23.1	1.0	17.0	1.0	16.4	30.5	20.0	
SA17A(CA)	18.9	20.9	1.0	17.0	1.0	18.1	27.6	19.0	
SA18(C)	20.0	24.4	1.0	18.0	1.0	15.5	32.2	21.0	
SA18A(CA)	20.0	22.1	1.0	18.0	1.0	17.2	29.2	20.0	
SA20(C)	22.2	27.1	1.0	20.0	1.0	13.9	35.8	25.0	
SA20A(CA)	22.2	24.5	1.0	20.0	1.0	15.4	32.4	23.0	
SA22(C)	24.4	29.8	1.0	22.0	1.0	12.7	39.4	28.0	
SA22A(CA)	24.4	26.9	1.0	22.0	1.0	14.1	35.5	25.0	
SA24(C)	26.7	32.6	1.0	24.0	1.0	11.6	43.0	31.0	
SA24A(CA)	26.7	29.5	1.0	24.0	1.0	12.8	38.9	28.0	
SA26(C)	28.9	35.5	1.0	26.0	1.0	10.7	46.6	31.0	
SA26A(CA)	28.9	31.9	1.0	26.0	1.0	11.9	42.1	30.0	

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RATINGS AND CHARACTERISTIC CURVES SA5.0(A)(C)(CA) THRU SA170(A)(C)(CA)

TABLE 2

Device Type	Breakdown V _{BR} Voltage at I _T (Voltage)		Test Current I _T	Working Peak Reverse Voltage V _{RWM}	Maximum Reverse Leakage at V _{RWM} I _R (μ A)	Maximum Peak Pulse Current I _{PPM}	Maximum Clamping Voltage V _C	Maximum Temperature coefficient of V _{BR}	Device
	Min	Max							
SA28(C)	31.1	38.0	1.0	28.0	1.0	9.90	50.1	35.0	
SA28A(CA)	31.1	34.4	1.0	28.0	1.0	11.0	45.4	31.0	
SA30(C)	33.3	40.7	1.0	30.0	1.0	9.30	53.5	39.0	
SA30A(CA)	33.3	36.8	1.0	30.0	1.0	10.3	48.4	36.0	
SA33(C)	36.7	44.9	1.0	33.0	1.0	8.60	59.0	42.0	
SA33A(CA)	36.7	40.6	1.0	33.0	1.0	9.40	53.3	39.0	
SA36(C)	40.0	48.9	1.0	36.0	1.0	7.80	64.3	46.0	
SA36A(CA)	40.0	44.2	1.0	36.0	1.0	8.60	58.1	41.0	
SA40(C)	44.4	54.3	1.0	40.0	1.0	7.00	71.4	51.0	
SA40A(CA)	44.4	49.1	1.0	40.0	1.0	7.80	64.5	46.0	
SA43(C)	47.8	58.4	1.0	43.0	1.0	6.50	76.7	55.0	
SA43A(CA)	47.8	52.8	1.0	43.0	1.0	7.20	69.4	50.0	
SA45(C)	50.0	61.1	1.0	45.0	1.0	6.20	80.3	58.0	
SA45A(CA)	50.0	55.3	1.0	45.0	1.0	6.90	72.7	52.0	
SA48(C)	53.3	65.2	1.0	48.0	1.0	5.80	85.5	63.0	
SA48A(CA)	53.3	58.9	1.0	48.0	1.0	6.50	77.4	56.0	
SA51(C)	56.7	69.3	1.0	51.0	1.0	5.50	91.1	66.0	
SA51A(CA)	56.7	62.7	1.0	51.0	1.0	6.10	82.4	61.0	
SA54(C)	60.0	73.3	1.0	54.0	1.0	5.20	96.3	71.0	
SA54A(CA)	60.0	66.3	1.0	54.0	1.0	5.70	87.1	65.0	
SA58(C)	64.4	78.7	1.0	58.0	1.0	4.90	103	78.0	
SA58A(CA)	64.4	71.2	1.0	58.0	1.0	5.30	93.6	70.0	
SA60(C)	66.7	81.5	1.0	60.0	1.0	4.70	107	80.0	
SA60A(CA)	66.7	73.7	1.0	60.0	1.0	5.20	96.8	71.0	
SA64(C)	71.1	86.9	1.0	64.0	1.0	4.40	114	86.0	
SA64A(CA)	71.1	78.6	1.0	64.0	1.0	4.90	103	76.0	
SA70(C)	77.8	95.1	1.0	70.0	1.0	4.00	125	94.0	
SA70A(CA)	77.8	86.0	1.0	70.0	1.0	4.40	113	85.0	
SA75(C)	83.3	102	1.0	75.0	1.0	3.70	134	101	
SA75A(CA)	83.3	92.1	1.0	75.0	1.0	4.10	121	91.0	
SA78(C)	86.7	106	1.0	78.0	1.0	3.60	139	105	
SA78A(CA)	86.7	95.8	1.0	78.0	1.0	4.00	126	95.0	
SA85(C)	94.4	115	1.0	85.0	1.0	3.30	151	114	
SA85A(CA)	94.4	104	1.0	85.0	1.0	3.60	137	103	
SA90(C)	100	122	1.0	90.0	1.0	3.10	160	121	
SA90A(CA)	100	111	1.0	90.0	1.0	3.40	146	110	
SA100(C)	111	136	1.0	100	1.0	2.80	179	135	
SA100A(CA)	111	123	1.0	100	1.0	3.10	162	123	
SA110(C)	122	149	1.0	110	1.0	2.60	196	148	
SA110A(CA)	122	135	1.0	110	1.0	2.80	177	133	
SA120(C)	133	163	1.0	120	1.0	2.30	214	162	
SA120A(CA)	133	147	1.0	120	1.0	2.60	193	146	

RATINGS AND CHARACTERISTIC CURVES SA5.0(A)(C)(CA) THRU SA170(A)(C)(CA)

TABLE 2

Device Type	Breakdown V _{BR} Voltage at I _T (Voltage)		Test Current I _T	Working Peak Reverse Voltage V _{RWM}	Maximum Reverse Leakage at V _{RWM} I _R (μ A)	Maximum Peak Pulse Current I _{PPM}	Maximum Clamping Voltage V _C	Maximum Temperature coefficient of V _{BR}	Device
	Min	Max							
SA130(C)	144	176	1.0	130.0	1.0	2.20	230.0	175	
SA130A(CA)	144	159	1.0	130.0	1.0	2.40	209.0	158	
SA150(C)	167	204	1.0	150.0	1.0	1.90	268.0	203	
SA150A(CA)	167	185	1.0	150.0	1.0	2.10	243.0	184	
SA160(C)	178	218	1.0	160.0	1.0	1.70	257.0	217	
SA160A(CA)	178	197	1.0	160.0	1.0	1.90	259.0	196	
SA170(C)	189	231	1.0	170.0	1.0	1.60	304.0	230	
SA170A(CA)	189	209	1.0	170.0	1.0	1.80	275.0	208	

NOTES :

1. V_{BR} Measured after I_T applied for 300 μ s, I_T=square wave pulse or equivalent
2. Surge current waveform per figure.3 and derate per figure.2
3. For bidirectional types with V_R or 10Volts and less, the I_R limit is doubled
4. All terms and symbols are consistent with ANSI/IEC 62.35

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RATINGS AND CHARACTERISTIC CURVES SA5.0(A)(C)(CA) THRU SA170(A)(C)(CA)

Figure 1.-Pulse Rating Cure

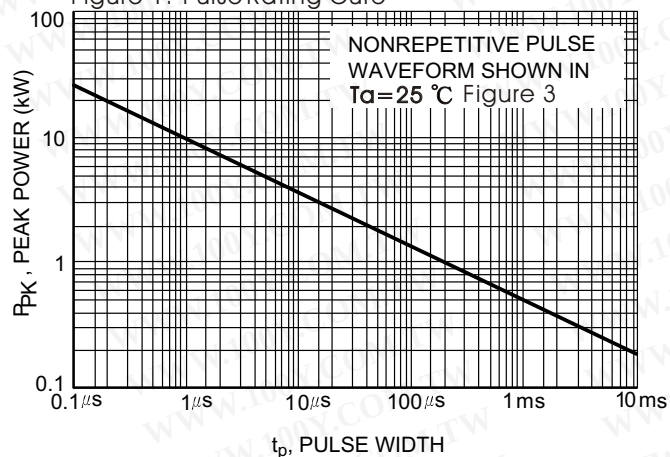


Figure 2.-Pulse Derating Cure

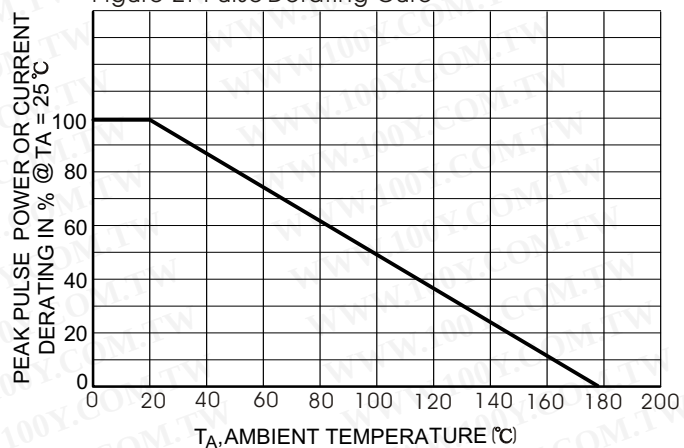


Figure 3.-Pulse Waveform

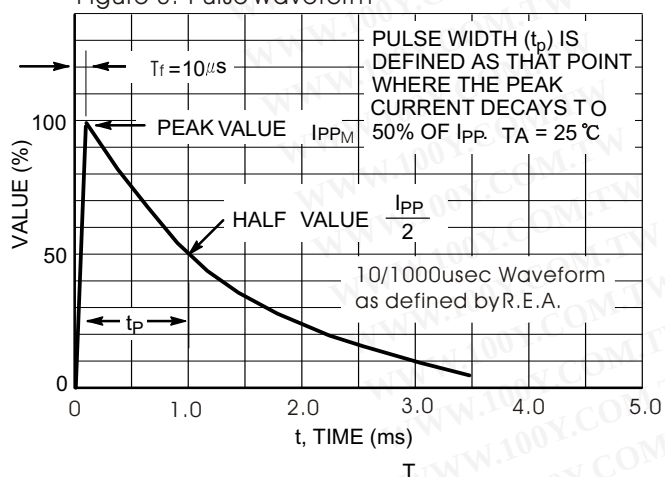


Figure 4.-Maximum Non-Repetitive Peak Forward Surge Current Unidirectional

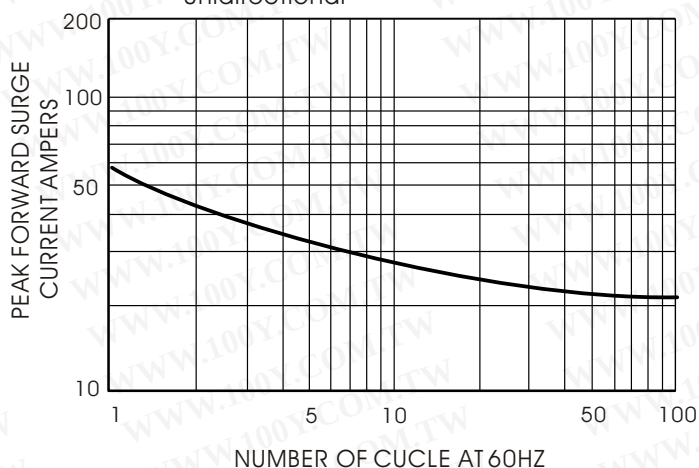


Figure 5.-STEADY STATE POWER DERATING

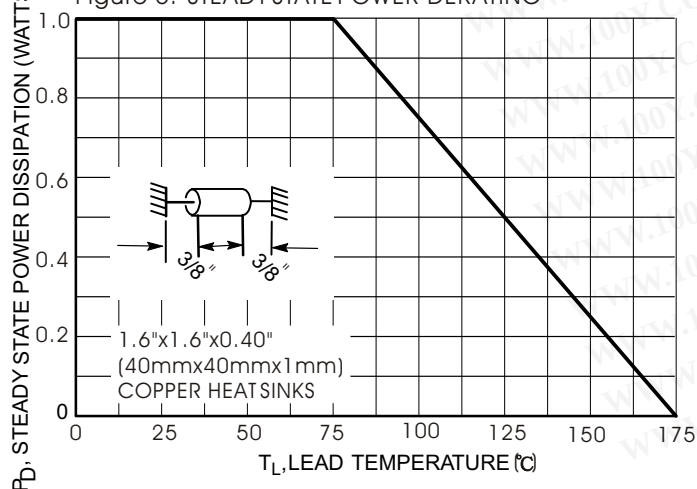


Figure 6.-INSTANTANEOUS FORWARDS VOLTAGE CHARACTERISTICS CURVE

