

GLASS PASSIVAED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

Features

- ◆ 500w peak pulse power capability
- ◆ Excellent clamping capability
- ◆ Low incremental surge resistance
- ◆ Fast response time: typically less than 1.0ps from 0v to VBR for unidirectional and 5.0ns for bidirectional
- ◆ types. High temperature soldering guaranteed: 265°C /10S/9.5mm lead length at 5 lbs tension

DO-15



Dimensions in inches and (millimeters)

Maximum Ratings And Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

	SYMBOLS	VALUE	UNITS
Peak power dissipation	P _{ppm}	Minimum 500	W
Peak pulse reverse current	I _{PPM}	See Table 1	A
Steady state power dissipation (Note 2)	P _{M(AV)}	1.6	W
Peak forward surge current	I _{FSM}	70	A
Maximum instantaneous forward voltage at 35A for unidirectional only (Note 3)	V _F	3.5	V
Operating junction and storage temperature range	T _{STG} , T _J	-55 to + 175	°C

Notes:

1. 10/1000μs waveform non-repetitive current pulse, per Fig.3 and derated above T_a=25 °C per Fig.2
2. T_L=75°C, lead lengths 9.5mm, Mounted on copper pad area of (40x40mm) Fig.5
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

ELECTRICAL CHARACTERISTICS (at TA=25 C unless otherwise noted)

Device Type	Breakdown Voltage V _(BR) (Volts)(NOTES 1)		Test Current I _T (mA)	Stand-off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μA)	Maximum Peak Pulse Reverse Current I _{PPM} (NOTE2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _C (Volts)	Maximum Temperature Coefficient of V _(BR) (mv/ °C)
	MIN	MAX						
SA5.0A	6.40	7.00	10	5.0	600	54.3	9.2	5.0
SA5.0CA	6.40	7.00	10	5.0	600	54.3	9.2	5.0
SA6.0A	6.67	7.37	10	6.0	600	48.5	10.3	5.0
SA6.0CA	6.67	7.37	10	6.0	600	48.5	10.3	5.0
SA6.5A	7.22	7.98	10	6.5	400	44.7	11.2	5.0
SA6.5CA	7.22	7.98	10	6.5	400	44.7	11.2	5.0
SA7.0A	7.78	8.60	10	7.0	150	41.7	12.0	6.0
SA7.0CA	7.78	8.60	10	7.0	150	41.7	12.0	6.0
SA7.5A	8.33	9.21	1.0	7.5	50	38.8	12.9	7.0
SA7.5CA	8.33	9.21	1.0	7.5	50	38.8	12.9	7.0
SA8.0A	8.89	9.83	1.0	8.0	25	36.8	13.6	7.0
SA8.0CA	8.89	9.83	1.0	8.0	25	36.8	13.6	7.0
SA8.5A	9.44	10.40	1.0	8.5	10	34.7	14.4	8.0
SA8.5CA	9.44	10.40	1.0	8.5	10	34.7	14.4	8.0
SA9.0A	10.00	11.10	1.0	9.0	5.0	32.5	15.4	9.0
SA9.0CA	10.00	11.10	1.0	9.0	5.0	32.5	15.4	9.0
SA10A	11.10	12.30	1.0	10.00	1.0	29.4	17.0	10.0
SA10CA	11.10	12.30	1.0	10.00	1.0	29.4	17.0	10.0
SA11A	12.20	13.50	1.0	11.00	1.0	27.5	18.2	11.0
SA11CA	12.20	13.50	1.0	11.00	1.0	27.5	18.2	11.0
SA12A	13.30	14.70	1.0	12.00	1.0	25.1	19.9	12.0
SA12CA	13.30	14.70	1.0	12.00	1.0	25.1	19.9	12.0
SA13A	14.40	15.90	1.0	13.00	1.0	23.3	21.5	13.0
SA13CA	14.40	15.90	1.0	13.00	1.0	23.3	21.5	13.0
SA14A	15.60	17.20	1.0	14.00	1.0	21.6	23.2	14.0
SA14CA	15.60	17.20	1.0	14.00	1.0	21.6	23.2	14.0
SA15A	16.70	18.50	1.0	15.00	1.0	20.5	24.4	16.0
SA15CA	16.70	18.50	1.0	15.00	1.0	20.5	24.4	16.0
SA16A	17.80	19.70	1.0	16.00	1.0	19.2	26.0	17.0
SA16CA	17.80	19.70	1.0	16.00	1.0	19.2	26.0	17.0
SA17A	18.90	20.90	1.0	17.00	1.0	18.1	27.6	19.0
SA17CA	18.90	20.90	1.0	17.00	1.0	18.1	27.6	19.0
SA18A	20.00	22.10	1.0	18.00	1.0	17.1	29.2	20.0
SA18CA	20.00	22.10	1.0	18.00	1.0	17.1	29.2	20.0
SA20A	22.20	24.50	1.0	20.00	1.0	15.4	32.4	23.0
SA20CA	22.20	24.50	1.0	20.00	1.0	15.4	32.4	23.0
SA22A	24.40	26.90	1.0	22.00	1.0	14.1	35.5	25.0
SA22CA	24.40	26.90	1.0	22.00	1.0	14.1	35.5	25.0
SA24A	26.70	29.50	1.0	24.00	1.0	12.9	38.9	28.0
SA24CA	26.70	29.50	1.0	24.00	1.0	12.9	38.9	28.0
SA26A	28.90	31.90	1.0	26.00	1.0	11.9	42.1	30.0
SA26CA	28.90	31.90	1.0	26.00	1.0	11.9	42.1	30.0
SA28A	31.10	34.40	1.0	28.00	1.0	11.0	45.4	31.0
SA28CA	31.10	34.40	1.0	28.00	1.0	11.0	45.4	31.0
SA30A	33.30	36.80	1.0	30.00	1.0	10.0	48.4	36.0
SA30CA	33.30	36.80	1.0	30.00	1.0	10.0	48.4	36.0
SA33A	36.70	40.60	1.0	33.00	1.0	9.4	53.3	39.0
SA33CA	36.70	40.60	1.0	33.00	1.0	9.4	53.3	39.0

The electrical characteristics above is for reference only.

ELECTRICAL CHARACTERISTICS (at TA=25°C unless otherwise noted)

Device Type	Breakdown Voltage V _(BR) (Volts)(NOTES 1)		Test Current I _T (mA)	Stand-off Voltage V _{WM} (Volts)	Maximum Reverse Leakage at V _{WM} I _D (NOTE3)(μA)	Maximum Peak Pulse Reverse Current I _{PPM} (NOTE2) (Amps)	Maximum Clamping Voltage at I _{PPM} V _c (Volts)	Maximum Temperature Coefficient of V _(BR) (mv/°C)
	MIN	MAX						
SA36A	40.00	44.20	1.0	36.00	1.0	58.1	8.6	41.0
SA36CA	40.00	44.20	1.0	36.00	1.0	58.1	8.6	41.0
SA40A	44.40	49.10	1.0	40.00	1.0	64.5	7.8	46.0
SA40CA	44.40	49.10	1.0	40.00	1.0	64.5	7.8	46.0
SA43A	47.80	52.80	1.0	43.00	1.0	69.4	7.2	50.0
SA43CA	47.80	52.80	1.0	43.00	1.0	69.4	7.2	50.0
SA45A	50.00	55.30	1.0	45.00	1.0	72.7	6.9	52.0
SA45CA	50.00	55.30	1.0	45.00	1.0	72.7	6.9	52.0
SA48A	53.30	58.90	1.0	48.00	1.0	77.4	6.5	56.0
SA48CA	53.30	58.90	1.0	48.00	1.0	77.4	6.5	56.0
SA51A	56.70	62.70	1.0	51.00	1.0	82.4	6.1	61.0
SA51CA	56.70	62.70	1.0	51.00	1.0	82.4	6.1	61.0
SA54A	60.00	66.30	1.0	54.00	1.0	87.1	5.7	65.0
SA54CA	60.00	66.30	1.0	54.00	1.0	87.1	5.7	65.0
SA58A	64.40	71.20	1.0	58.00	1.0	93.6	5.3	70.0
SA58CA	64.40	71.20	1.0	58.00	1.0	93.6	5.3	70.0
SA60A	66.70	73.70	1.0	60.00	1.0	96.8	5.2	71.0
SA60CA	66.70	73.70	1.0	60.00	1.0	96.8	5.2	71.0
SA64A	71.10	78.60	1.0	64.00	1.0	103.0	4.9	76.0
SA64CA	71.10	78.60	1.0	64.00	1.0	103.0	4.9	76.0
SA70A	77.80	86.00	1.0	70.00	1.0	113.0	4.4	85.0
SA70CA	77.80	86.00	1.0	70.00	1.0	113.0	4.4	85.0
SA75A	83.30	92.10	1.0	75.00	1.0	121.0	4.1	91.0
SA75CA	83.30	92.10	1.0	75.00	1.0	121.0	4.1	91.0
SA78A	86.70	95.80	1.0	78.00	1.0	126.0	4.0	95.0
SA78CA	86.70	95.80	1.0	78.00	1.0	126.0	4.0	95.0
SA85A	94.40	104.00	1.0	85.00	1.0	137.0	3.6	103
SA85CA	94.40	104.00	1.0	85.00	1.0	137.0	3.6	103
SA90A	100.00	111.00	1.0	90.00	1.0	146.0	3.4	111
SA90CA	100.00	111.00	1.0	90.00	1.0	146.0	3.4	111
SA100A	111.00	123.00	1.0	100.00	1.0	162.0	3.1	123
SA100CA	111.00	123.00	1.0	100.00	1.0	162.0	3.1	123
SA110A	122.00	135.00	1.0	110.00	1.0	177.0	2.8	133
SA110CA	122.00	135.00	1.0	110.00	1.0	177.0	2.8	133
SA120A	133.00	147.00	1.0	120.00	1.0	193.0	2.6	146
SA120CA	133.00	147.00	1.0	120.00	1.0	193.0	2.6	146
SA130A	144.00	159.00	1.0	130.00	1.0	209.0	2.4	158
SA130CA	144.00	159.00	1.0	130.00	1.0	209.0	2.4	158
SA150A	167.00	185.00	1.0	150.00	1.0	243.0	2.1	184
SA150CA	167.00	185.00	1.0	150.00	1.0	243.0	2.1	184
SA160A	178.00	197.00	1.0	160.00	1.0	259.0	1.9	196
SA160CA	178.00	197.00	1.0	160.00	1.0	259.0	1.9	196
SA170A	189.00	209.00	1.0	170.00	1.0	275.0	1.8	208
SA170CA	189.00	209.00	1.0	170.00	1.0	275.0	1.8	208

NOTES:

1. V_(BR) measured after I_T applied for 300μs, I_T=square wave pulse or equivalent
2. Surge current waveform per Fig.3 and derated per Fig.2
3. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled
4. All items and symbols are consistent with ANSI/IEEE C62.35
5. For parts without A, the V_{BR} is ± 10% and V_C is 5% higher than with A parts, the parts without A are currently available, but not recommended for new designs. The parts with A are preferred.

The electrical characteristics above is for reference only.

FIG. 1-PEAK PULSE POWER RATING CURVE

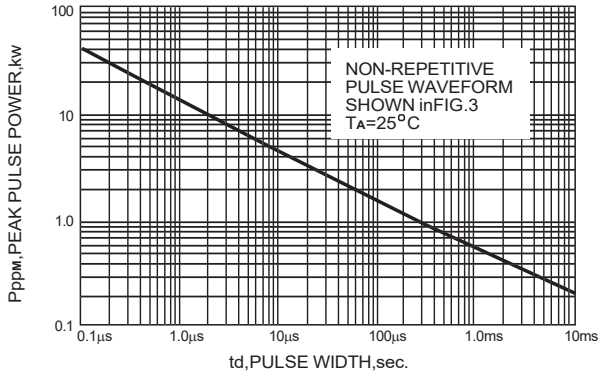


FIG. 3-PULSE WAVEFORM



FIG. 5-STEADY STATE POWER DERATING CURVE

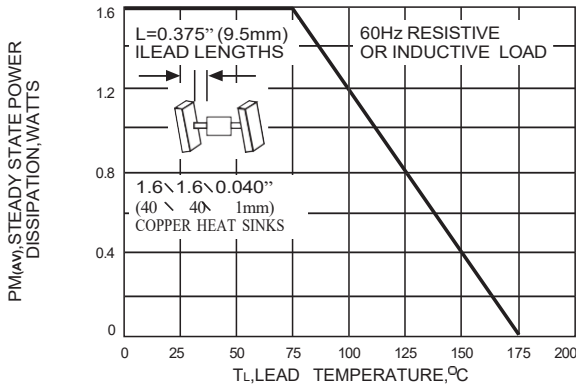


FIG. 7-TYPICAL REVERSE LEAKAGE CHARACTERISTICS



FIG. 2-PULSE DERATING CURVE

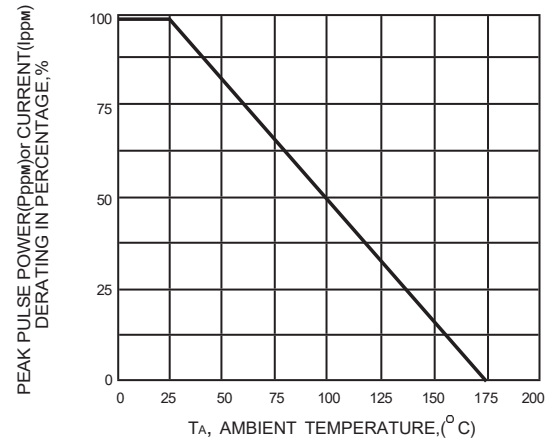


FIG. 4-TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

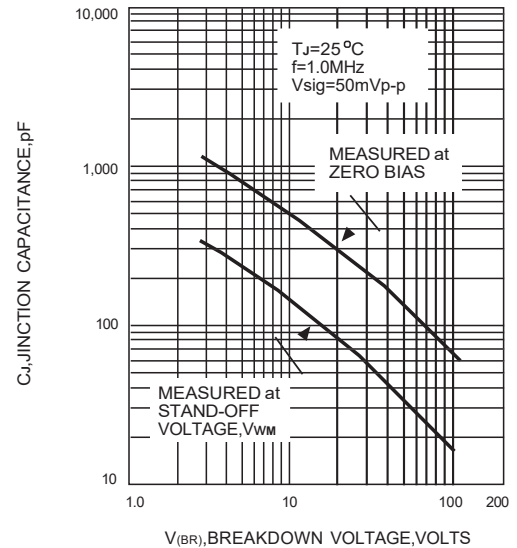
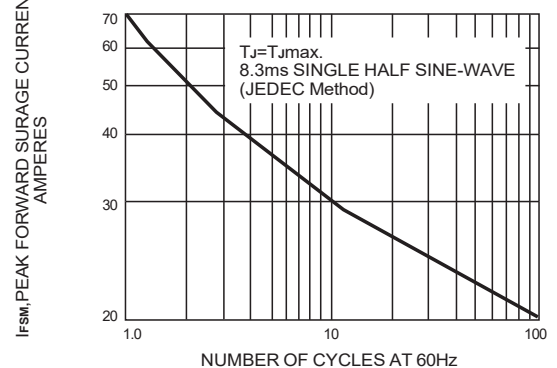


FIG. 6-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY



The curve characteristics above is for reference only.