MEI

Lead Free
RoHS Compliant

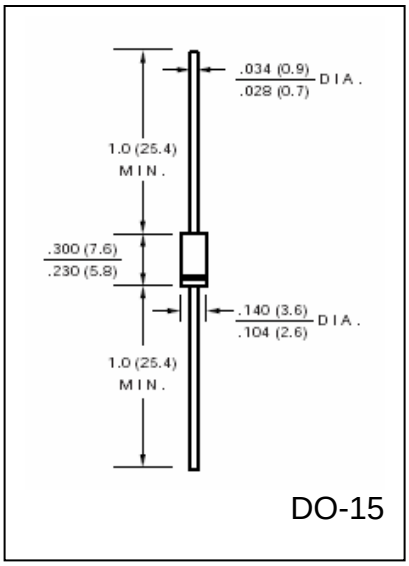
TRANSIENT VOLTAGE SUPPRESSOR

SA5.0 THRU SA170

VOLTAGE RANGE **5.0 to 170 Volts**
POWER **500 Watts**

FEATURES

- Glass passivated chip junction
- 500W surge capacity @ 10/1000 µSec wave form
- Fast response, typically less then 1 pSec
- Low Zener impedence
- Excellent clamping capability
- High temperature soldering guaranteed:
  260 /10 seconds, 0.375" (9.5mm) lead length



MECHANICAL DATA

- Case: transfer molded plastic
- Epoxy: UL94V – 0 rate flame retardant
- Polarity: Color band denotes cathode end, except on bipolar parts which have no band
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: any
- Weight: 0.014 ounce, 0.3 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25^{O}C ambient temperature unless otherwise specified

	SYMBOLS		UNIT
Peak Power Dissipation @ T_A = 25 ^{O}C, T_P = 1 mS (Note 1)	P_{PPM}	500	Watts
Steady State Power Dissipation T_L = 75 ^{O}C, Lead Length 0.375" (9.5mm), (Note 2)	$P_{M(AV)}$	3.0	Watt
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method) (Note 3)	I_{FSM}	70	Amps
Operating Junction Temperature Range	T_J	(-55 to +175)	^{O}C
Storage Temperature Range	T_{STG}	(-55 to +175)	^{O}C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated to T_A = 25 ^{O}C per Fig. 2.
2. Mounted on copper pad area 1.6" x 1.6" (40mm x 40mm) per Fig. 5
3. 8.3ns single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute, maximum.
4. For bipolar devices add a C to the part number, i.e. SA5.0C or SA5.0CA
5. Electrical characteristics apply in both directions for bipolar devices

RATINGS AND CHARACTERISTIC CURVES SA5.0 THRU SA170

For Bipolar devices add a "C" to the part number, i. e. SA5.0C or SA5.0CA

Device	Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
	V_{RWM}	Min	Max	I_T	V_C	I_{PP}	I_R
	Volts	Volts		mA	Volts	Amps	µAmps
SA5.0	5.0	6.4	7.3	10	9.6	55.4	600
SA5.0A	5.0	6.4	7.0	10	9.2	55.4	600
SA6.0	6.0	6.67	8.15	10	11.4	49.5	600
SA6.0A	6.0	6.67	7.37	10	10.3	49.5	600
SA6.5	6.5	7.22	8.82	10	12.3	45.5	400
SA6.5A	6.5	7.22	7.98	10	11.2	45.5	400
SA7.0	7.0	7.78	9.51	10	13.3	42.5	150
SA7.0A	7.0	7.78	8.6	10	12	42.5	150
SA7.5	7.5	8.33	10.2	1	14.3	39.5	50
SA7.5A	7.5	8.33	9.21	1	12.9	39.5	50
SA8.0	8.0	8.89	10.9	1	15	37.5	25
SA8.0A	8.0	8.89	9.83	1	13.6	37.5	25
SA8.5	8.5	9.44	11.5	1	15.9	35.4	10
SA8.5A	8.5	9.44	10.4	1	14.4	35.4	10
SA9.0	9.0	10	12.2	1	16.9	33.1	5
SA9.0A	9.0	10	11.1	1	15.4	33.1	5
SA10	10	11.1	13.6	1	18.8	30	3
SA10A	10	11.1	12.3	1	17	30	3
SA11	11	12.2	14.9	1	20.1	28	3
SA11A	11	12.2	13.5	1	18.2	28	3
SA12	12	13.3	16.3	1	22	25.6	3
SA12A	12	13.3	14.7	1	19.9	25.6	3
SA13	13	14.4	17.6	1	23.8	23.7	3
SA13A	13	14.4	15.9	1	21.5	23.7	3
SA14	14	15.6	19.1	1	25.8	22	3
SA14A	14	15.6	17.2	1	23.2	22	3
SA15	15	19.7	20.4	1	26.9	20.9	3
SA15A	15	16.7	18.5	1	24.4	20.9	3
SA16	16	17.8	21.8	1	28.8	19.6	3
SA16A	16	17.8	19.7	1	26	19.6	3
SA17	17	18.9	23.1	1	30.5	18.5	3
SA17A	17	18.9	20.9	1	27.6	18.5	3
SA18	18	20	24.4	1	32.2	17.5	3
SA18A	18	20	22.1	1	29.2	17.5	3
SA20	20	22.2	27.1	1	35.8	15.7	3
SA20A	20	22.2	24.5	1	32.4	15.7	3
SA22	22	24.4	29.8	1	39.4	14.4	3
SA22A	22	24.4	26.9	1	35.5	14.4	3
SA24	24	26.7	32.6	1	43	13.1	3
SA24A	24	26.7	29.5	1	38.9	13.1	3
SA26	26	28.9	35.3	1	46.6	12.1	3
SA26A	26	28.9	31.9	1	42.1	12.1	3
SA28	28	31.1	38	1	50.1	11.2	3
SA28A	28	31.1	34.4	1	45.4	11.2	3
SA30	30	33.3	40.7	1	53.5	10.5	3
SA30A	30	33.3	36.8	1	48.4	10.5	3
SA33	33	36.7	44.9	1	59	9.6	3
SA33A	33	36.7	40.6	1	53.3	9.6	3
SA36	36	40	48.9	1	64.3	8.8	3
SA36A	36	40	44.2	1	58.1	8.8	3
SA40	40	44.4	54.3	1	71.4	7.9	3
SA40A	40	44.4	49.1	1	64.5	7.9	3
SA43	43	47.8	58.4	1	76.7	7.3	3
SA43A	43	47.8	52.8	1	69.4	7.3	3
SA45	45	50	61.1	1	80.3	7	3
SA45A	45	50	55.3	1	72.7	7	3
SA48	48	53.3	65.2	1	85.5	6.6	3
SA48A	48	53.3	58.9	1	77.4	6.6	3

RATINGS AND CHARACTERISTIC CURVES SA5.0 THRU SA170

For Bipolar devices add a "C" to the part number, i. e. SA5.0C or SA5.0CA

Device	Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
	V_{RWM}	Min	Max	I_T	V_C	I_{PP}	I_R
	Volts	Volts		mA	Volts	Amps	µAmps
SA51	51	56.7	69.3	1	91.1	6.2	3
SA51A	51	56.7	62.7	1	82.4	6.2	3
SA54	54	60	73.3	1	96.3	5.9	3
SA54A	54	60	66.3	1	87.1	5.9	3
SA58	58	64.4	78.7	1	103	5.4	3
SA58A	58	64.4	71.2	1	93.6	5.4	3
SA60	60	66.7	81.5	1	107	5.3	3
SA60A	60	66.7	73.7	1	96.8	5.3	3
SA64	64	71.1	86.9	1	114	5	3
SA64A	64	71.1	78.6	1	103	5	3
SA70	70	77.8	95.1	1	125	4.5	3
SA70A	70	77.8	86	1	113	4.5	3
SA75	75	83.3	102	1	134	4.2	3
SA75A	75	83.3	92.1	1	121	4.2	3
SA78	79	86.7	103	1	139	4	3
SA78A	79	86.7	95.8	1	126	4	3
SA85	85	94.4	115	1	151	3.7	3
SA85A	85	94.4	104	1	137	3.7	3
SA90	90	100	122	1	160	3.5	3
SA90A	90	100	111	1	146	3.5	3
SA100	100	111	136	1	179	3.1	3
SA100A	100	111	123	1	162	3.1	3
SA110	110	122	149	1	196	2.9	3
SA110A	110	122	135	1	177	2.9	3
SA120	120	133	163	1	214	2.6	3
SA120A	120	133	147	1	193	2.6	3
SA130	130	144	176	1	230	2.4	3
SA130A	130	144	159	1	209	2.4	3
SA150	150	167	204	1	268	2.1	3
SA150A	150	167	185	1	243	2.1	3
SA160	160	178	218	1	277	2	3
SA160A	160	178	197	1	259	2	3
SA170	170	189	231	1	304	1.9	3
SA170A	170	189	209	1	275	1.9	3

Notes

1. **For bidirectional parts with V_{RWM} of 10V or less, the I_R limit is doubled.**

RATINGS AND CHARACTERISTIC CURVES SA5.0 THRU SA170

Pig.1 - Peak Pulse Power Rating Curve

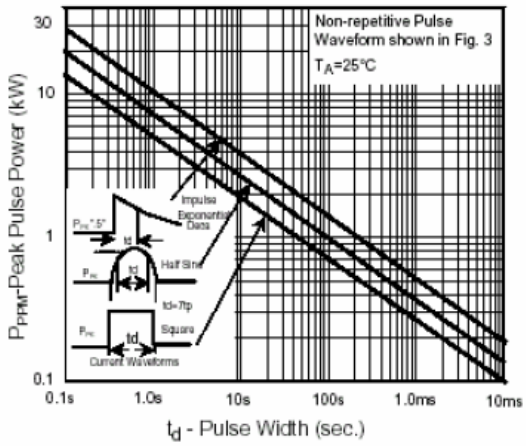


Fig.2-Power Derating Curve

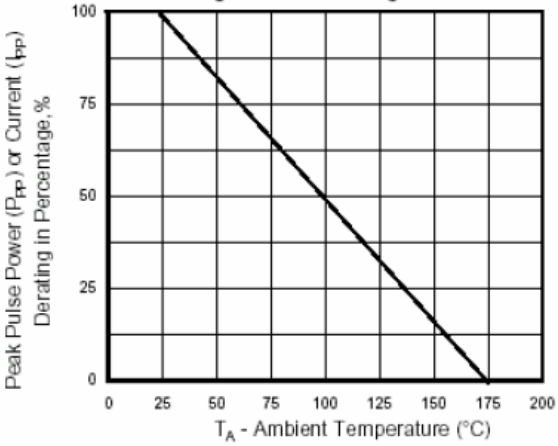


Fig.3 - Pulse Waveform

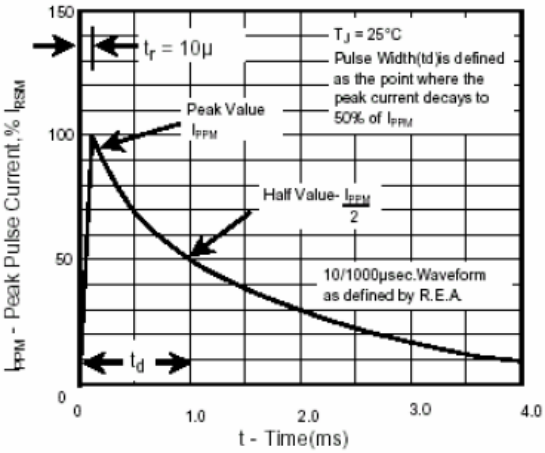


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

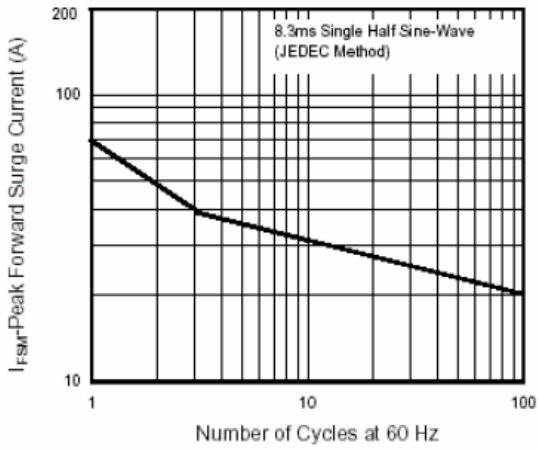


Fig. 5 - Steady State Power Derating Curve

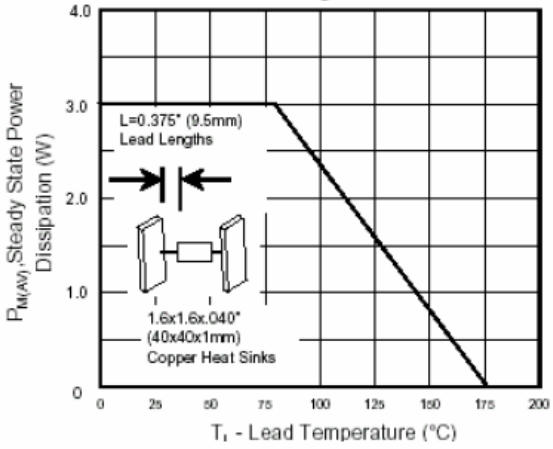


Fig. 6 - Capacitance