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500W TRANSIENT VOLTAGE SUPPRESSOR

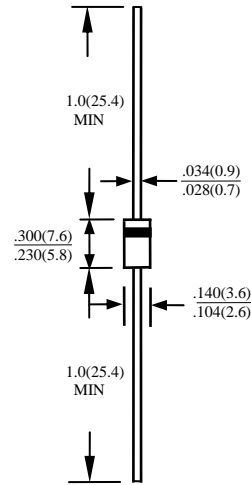
SA5.0(C)-LFR THRU SA170(C)A-LFR

FEATURES

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY FLAMMABILITY CLASSIFICATION 94V-0
- 500W PEAK PULSE POWER CAPABILITY ON 10/1000 μ s WAVEFORM
- EXCELLENT CLAMPING CAPABILITY
- REPETITION RATE (DUTY CYCLE):0.01%
- LOW INCREMENTAL SURGE RESISTANCE
- FAST RESPONSE TIME: TYPICALLY LESS THAN 1.0 ps FROM 0 VOLTS TO BV FOR UNIDIRECTIONAL AND 5.0ns FOR BIDIRECTIONAL TYPES
- TYPICAL I_D LESS THAN 1 μ A ABOVE 10V
- HIGH TEMPERATURE SOLDERING: 260 $^{\circ}$ C /10S /0.375" (9.5mm) LEAD LENGTH/5LBS., (2.3KG) TENSION
- ROHS

MECHANICAL DATA

- CASE: MOLDED PLASTIC, CASE:DO15, DIMENSIONS IN INCHES AND (MILLIMETERS)
- TERMINALS: AXIAL LEADS, SOLDERABLE PER MIL-STD-202, METHOD 2026
- POLARITY: COLOR BAND DENOTES POSITIVE END EXCEPT BIDIRECTIONAL
- WEIGHT: 0.4 GRAMS



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS RATINGS AT 25 $^{\circ}$ C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

RATINGS	SYMBOL	VALUE	UNITS
PEAK PULSE POWER DISSIPATION ON 10/1000 μ S WAVEFORM (NOTE 1, FIG. 1)	P_{PPM}	MINIMUM 500	WATTS
PEAK PULSE CURRENT OF 0N 10/1000 μ S WAVEFORM (NOTE 1, FIG. 3)	I_{PPM}	SEE TABLE 1	A
STEADY STATE POWER DISSIPATION AT $T_L=75^{\circ}$ C, LEAD LENGTHS 0.375" (9.5mm) (NOTE2)	$P_{M(AV)}$	3.0	WATTS
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD, UNIDIRECTIONAL ONLY(NOTE 3)	I_{FSM}	70	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE AT 35.0A FOR UNIDIRECTIONAL ONLY (NOTE 3)	V _F	3.5	V
OPERATING JUNCTION AND STORAGE TEMPERATURE RANGE	T_J, T_{STG}	- 55 TO + 175	$^{\circ}$ C

NOTE : 1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE $T_A=25^{\circ}$ C PER FIG 2.

2. MOUNTED ON COPPER PAD AREA OF 1.6x1.6" (40x40mm) PER FIG. 5

3. 8.3ms SINGLE HALF SINE-WAVE OR EQUIVALENT SQUARE WAVE, DUTY CYCLE=4 PULSES PER MINUTE MAXIMUM.

4. FOR BIDIRECTIONAL USE C SUFFIX FOR 10% TOLERANCE, CA SUFFIX FOR 5% TOLERANCE

DEVICE	BREAKDOWN VOLTAGE			WORKING PEAK REVERSE VOLTAGE V _{RWM} (VOLTS)	MAXIMUM REVERSE LEAKAGE AT V _{RWM} IR(μA)	MAXIMUM REVERSE CURRENT I _{RSM} (AMPS)	MAX CLAMPING VOLTAGE V _{RWM} (VOLTS)	MAXIMUM TEMPERATURE COEFFICIENT OF V _{BR} (%C)
	B _{BR} (VOLTS)		@IT (mA)					
	MIN	MAX						
SA5.0(C)-LFR	6.40	7.30	10	5.0	600	52.0	9.6	5.0
SA5.0(C)A-LFR	6.40	7.00	10	5.0	600	54.3	9.2	5.0
SA6.0(C)-LFR	6.67	8.15	10	6.0	600	43.9	11.4	5.0
SA6.0(C)A-LFR	6.67	7.37	10	6.0	600	48.5	10.3	5.0
SA6.5(C)-LFR	7.22	8.82	10	6.5	400	40.7	12.3	5.0
SA6.5(C)A-LFR	7.22	7.98	10	6.5	400	44.7	11.2	5.0
SA7.0(C)-LFR	7.78	9.51	10	7.0	150	37.8	13.3	6.0
SA7.0(C)A-LFR	7.78	8.60	10	7.0	150	41.7	12.0	6.0
SA7.5(C)-LFR	8.33	10.2	1.0	7.5	50	35.0	14.3	7.0
SA7.5(C)A-LFR	8.33	9.21	1.0	7.5	50	38.8	12.9	7.0
SA8.0(C)-LFR	8.89	10.9	1.0	8.0	25	33.3	15.0	7.0
SA8.0(C)A-LFR	8.89	9.83	1.0	8.0	25	36.7	13.6	7.0
SA8.5(C)-LFR	9.44	11.5	1.0	8.5	10	31.4	15.9	8.0
SA8.5(C)A-LFR	9.44	10.4	1.0	8.5	10	34.7	14.4	8.0
SA9.0(C)-LFR	10.0	12.2	1.0	9.0	5.0	29.5	16.9	9.0
SA9.0(C)A-LFR	10.0	11.1	1.0	9.0	5.0	32.5	15.4	9.0
SA10(C)-LFR	11.1	13.6	1.0	10.0	1.0	26.6	18.8	10.0
SA10(C)A-LFR	11.1	12.3	1.0	10.0	1.0	29.4	17.0	10.0
SA11(C)-LFR	12.2	14.9	1.0	11.0	1.0	24.9	20.1	11.0
SA11(C)A-LFR	12.2	13.5	1.0	11.0	1.0	27.4	18.2	11.0
SA12(C)-LFR	13.3	16.3	1.0	12.0	1.0	22.7	22.0	12.0
SA12(C)A-LFR	13.3	14.7	1.0	12.0	1.0	25.1	19.9	12.0
SA13(C)-LFR	14.4	17.6	1.0	13.0	1.0	21.0	23.8	13.0
SA13(C)A-LFR	14.4	15.9	1.0	13.0	1.0	23.2	21.5	13.0
SA14(C)-LFR	15.6	19.1	1.0	14.0	1.0	19.4	25.8	14.0
SA14(C)A-LFR	15.6	17.2	1.0	14.0	1.0	21.5	23.2	14.0
SA15(C)-LFR	16.7	20.4	1.0	15.0	1.0	18.8	26.9	16.0
SA15(C)A-LFR	16.7	18.5	1.0	15.0	1.0	20.6	24.4	16.0
SA16(C)-LFR	17.8	21.8	1.0	16.0	1.0	17.6	28.8	19.0
SA16(C)A-LFR	17.8	19.7	1.0	16.0	1.0	19.2	26.0	17.0
SA17(C)-LFR	18.9	23.1	1.0	17.0	1.0	16.4	30.5	20.0
SA17(C)A-LFR	18.9	20.9	1.0	17.0	1.0	18.1	27.6	19.0
SA18(C)-LFR	20.0	24.4	1.0	18.0	1.0	15.5	32.2	21.0
SA18(C)A-LFR	20.0	22.1	1.0	18.0	1.0	17.2	29.2	20.0
SA20(C)-LFR	22.2	27.1	1.0	20.0	1.0	13.9	35.8	25.0
SA20(C)A-LFR	22.2	24.5	1.0	20.0	1.0	15.4	32.4	23.0
SA22(C)-LFR	24.4	29.8	1.0	22.0	1.0	12.7	39.4	28.0
SA22(C)A-LFR	24.4	26.9	1.0	22.0	1.0	14.1	35.5	25.0
SA24(C)-LFR	26.7	32.6	1.0	24.0	1.0	11.6	43.0	31.0
SA24(C)A-LFR	26.7	29.5	1.0	24.0	1.0	12.8	38.9	28.0
SA26(C)-LFR	28.9	35.3	1.0	26.0	1.0	10.7	46.6	31.0
SA26(C)A-LFR	28.9	31.9	1.0	26.0	1.0	11.9	42.1	30.0
SA28(C)-LFR	31.1	38.0	1.0	28.0	1.0	9.9	50.1	35.0
SA28(C)A-LFR	31.1	34.4	1.0	28.0	1.0	11.0	45.4	31.0
SA30(C)-LFR	33.3	40.7	1.0	30.0	1.0	9.3	53.5	39.0
SA30(C)A-LFR	33.3	36.8	1.0	30.0	1.0	10.3	48.4	36.0
SA33(C)-LFR	36.7	44.9	1.0	33.0	1.0	8.6	59.0	42.0
SA33(C)A-LFR	36.7	40.6	1.0	33.0	1.0	9.4	53.3	39.0
SA36(C)-LFR	40.0	48.9	1.0	36.0	1.0	7.8	64.3	46.0
SA36(C)A-LFR	40.0	44.2	1.0	36.0	1.0	8.6	58.1	41.0
SA40(C)-LFR	44.4	54.3	1.0	40.0	1.0	7.0	71.4	51.0
SA40(C)A-LFR	44.4	49.1	1.0	40.0	1.0	7.8	64.5	46.0
SA43(C)-LFR	47.8	58.4	1.0	43.0	1.0	6.5	76.7	55.0
SA43(C)A-LFR	47.8	52.8	1.0	43.0	1.0	7.2	69.4	50.0
SA45(C)-LFR	50.0	61.1	1.0	45.0	1.0	6.2	80.3	58.0
SA45(C)A-LFR	50.0	55.3	1.0	45.0	1.0	6.9	72.7	52.0
SA48(C)-LFR	53.3	65.2	1.0	48.0	1.0	5.8	85.5	63.0
SA48(C)A-LFR	53.3	58.9	1.0	48.0	1.0	6.5	77.4	56.0
SA51(C)-LFR	56.7	69.3	1.0	51.0	1.0	5.5	91.1	66.0
SA51(C)A-LFR	56.7	62.7	1.0	51.0	1.0	6.1	82.4	61.0
SA54(C)-LFR	60.0	73.3	1.0	54.0	1.0	5.2	96.3	71.0
SA54(C)A-LFR	60.0	66.3	1.0	54.0	1.0	5.7	87.1	65.0
SA58(C)-LFR	64.4	78.7	1.0	58.0	1.0	4.9	103.0	78.0
SA58(C)A-LFR	64.4	71.2	1.0	58.0	1.0	5.3	93.6	70.0
SA60(C)-LFR	66.7	81.5	1.0	60.0	1.0	4.7	107.0	80.0
SA60(C)A-LFR	66.7	73.7	1.0	60.0	1.0	5.2	96.8	71.0
SA64(C)-LFR	71.1	86.9	1.0	64.0	1.0	4.4	114.0	86.0
SA64(C)A-LFR	71.1	78.6	1.0	64.0	1.0	4.9	103.0	76.0
SA70(C)-LFR	77.8	95.1	1.0	70.0	1.0	4.0	125.0	94.0
SA70(C)A-LFR	77.8	86.0	1.0	70.0	1.0	4.4	113.0	85.0
SA75(C)-LFR	83.3	102.0	1.0	75.0	1.0	3.7	134.0	101
SA75(C)A-LFR	83.3	92.1	1.0	75.0	1.0	4.1	121.0	91.0
SA78(C)-LFR	86.7	106.0	1.0	78.0	1.0	3.6	139.0	105
SA78(C)A-LFR	86.7	95.8	1.0	78.0	1.0	4.0	126.0	95.0
SA85(C)-LFR	94.4	115.0	1.0	85.0	1.0	3.3	151.0	114
SA85(C)A-LFR	94.4	104.0	1.0	85.0	1.0	3.6	137.0	103
SA90(C)-LFR	100	122.0	1.0	90.0	1.0	3.1	160.0	121
SA90(C)A-LFR	100	111.0	1.0	90.0	1.0	3.4	146.0	110
SA100(C)-LFR	111	136.0	1.0	100.0	1.0	2.8	179.0	135
SA100(C)A-LFR	111	123.0	1.0	100.0	1.0	3.1	162.0	123
SA110(C)-LFR	122	149.0	1.0	110.0	1.0	2.6	196.0	148
SA110(C)A-LFR	122	135.0	1.0	110.0	1.0	2.8	177.0	133
SA120(C)-LFR	133	163.0	1.0	120.0	1.0	2.3	214.0	162
SA120(C)A-LFR	133	147.0	1.0	120.0	1.0	2.0	193.0	146
SA130(C)-LFR	144	176.0	1.0	130.0	1.0	2.2	230.0	175
SA130(C)A-LFR	144	159.0	1.0	130.0	1.0	2.4	209.0	158
SA150(C)-LFR	167	204.0	1.0	150.0	1.0	1.9	268.0	203
SA150(C)A-LFR	167	185.0	1.0	150.0	1.0	2.1	243.0	184
SA160(C)-LFR	178	218.0	1.0	160.0	1.0	1.7	257.0	217
SA160(C)A-LFR	178	197.0	1.0	160.0	1.0	1.9	259.0	196
SA170(C)-LFR	189	231.0	1.0	170.0	1.0	1.6	304.0	230
SA170(C)A-LFR	189	209.0	1.0	170.0	1.0	1.8	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 OF 10 VOLTS AND LESS, THE I_D LIMIT IS DOUBLE
 4. ALL TERMS AND SYMBOLS ARE CONSISTENT WITH ANSI/IEE C62.35

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

FIG. 7 - INCREMENTAL CLAMPING VOLTAGE CURVE UNIDIRECTIONAL

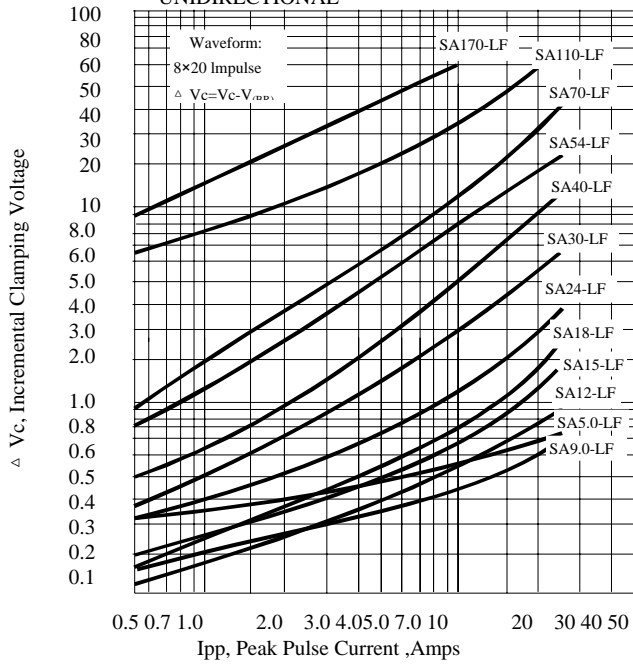


FIG. 8 - INCREMENTAL CLAMPING VOLTAGE CURVE UNIDIRECTIONAL

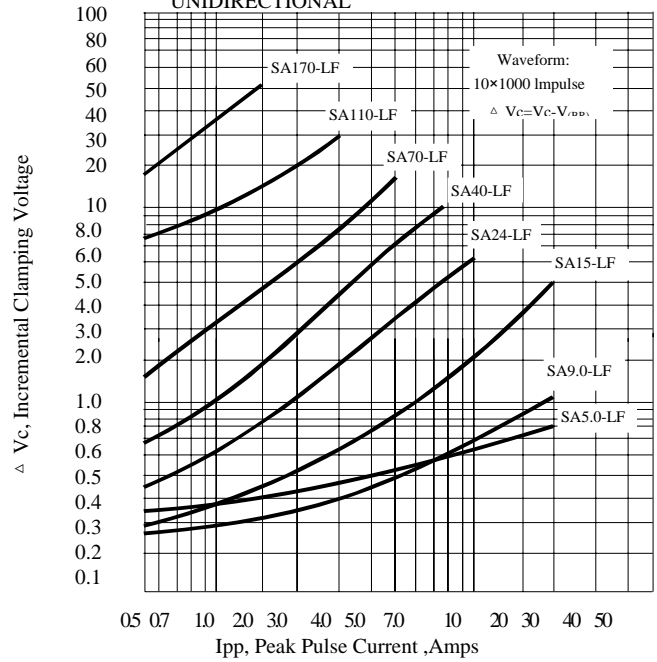


FIG. 9 - INCREMENTAL CLAMPING VOLTAGE CURVE BIDIRECTIONAL

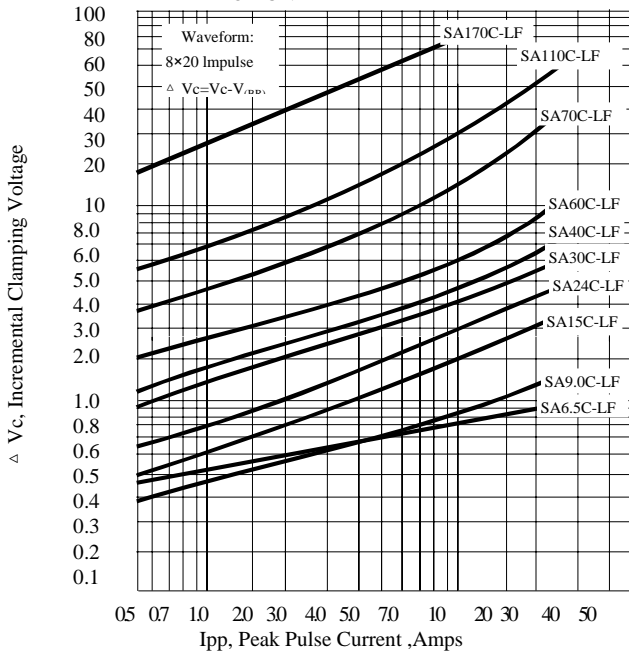
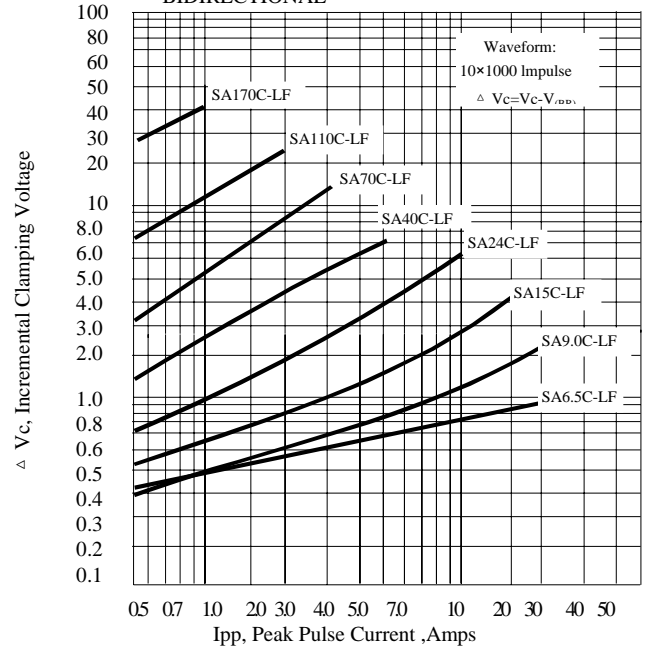


FIG. 10 - INCREMENTAL CLAMPING VOLTAGE CURVE BIDIRECTIONAL



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

