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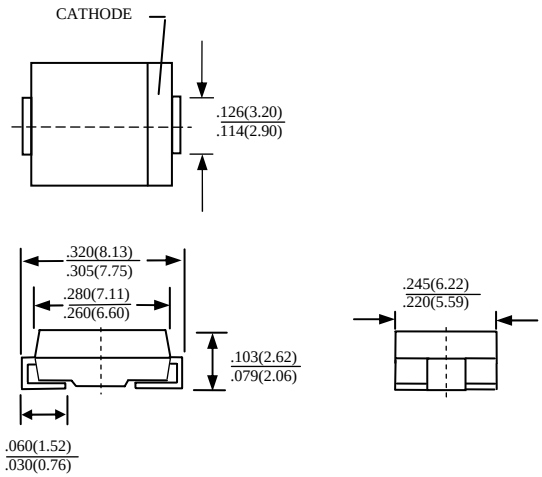
1500W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

1.5SMCJ5.0-LFR THRU 1.5SMCJ188A-LFR



FEATURES

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY FLAMMABILITY CLASSIFICATION 94V-0
- GLASS PASSIVATED JUNCTION
- LOW PROFILE
- EXCELLENT CLAMPING CAPABILITY
- LOW INCREMENTAL SURGE RESISTANCE
- FAST RESPONSE TIME: TYPICALLY LESS THEN 1.0 pS FROM 0 VOLTS TO V(BR) MIN
- 1500 W PEAK PULSE POWER CAPABILITY WITH A 10/1000 µS WAVEFORM, REPETITION RATE (DUTY CYCLE): 0.01%
- TYPICAL I_D LESS THAN 1µA ABOVE 10V
- HIGH TEMPERATURE SOLDERING GUARANTEED: 250°C /10 SECONDS AT TERMINALS
- ROHS

MECHANICAL DATA

- CASE: MOLDED PLASTIC, DO-214AB (SMC) DIMENSIONS IN INCHES AND (MILLIMETERS)
- TERMINALS: SOLDER PLATED
- POLARITY: INDICATED BY CATHODE BAND
- WEIGHT: 0.21 GRAMS

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

RATINGS	SYMBOL	VALUE	UNITS
PEAK PULSE POWER DISSIPATION ON 10/1000µS WAVEFORM (NOTE 1, FIG. 1)	P_{PPM}	MINIMUM 1500	WATTS
PEAK PULSE CURRENT OF 0N 10/1000µS WAVEFORM (NOTE 1,FIG. 3)	I_{PPM}	SEE TABLE 1	A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD, UNIDIRECTIONAL ONLY(NOTE 2)	I_{FSM}	200	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE AT 25A FOR UNIDIRECTIONAL ONLY (NOTE 3 & 4)	VF	SEE NOTE 4	V
OPERATING JUNCTION AND STORAGE TEMPERATURE RANGE	T_J, T_{STG}	- 55 TO + 150	°C

NOTE: 1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE TA=25°C PER FIG 2.
2. MOUNTED ON 8.0x8.0mm COPPER PADS TO EACH TERMINAL
3. MEASURED ON 8.3mS SINGLE HALF SINE-WAVE OR EQUIVALENT SQUARE WAVE, DUTY CYCLE = 4 PULSES PER MINUTE MAXIMUM
4. VF=3.5V ON 1.5SMCJ5.0 THRU 1.5SMCJ90A DEVICES AND VF=5.0V ON 1.5SMCJ100 THRU 1.5SMCJ188A

DEVICE	DEVICE MARKING CODE		WORKING PEAK REVERSE VOLTAGE V_{WM}(VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ (VOLTS) at I_T		TEST CURRENT I_T(mA)	MAXIMUM Clamping VOLTAGE AT I_{PPM} VC(Volts) (Note 5)	MAX PEAK PULSE SURGE CURRENT I_{PPM} (NOTE 5) (Amps)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D(μA)
	UNI	BI		MIN	MAX				
1.5SMCJ5.0-LFR	GDD	BDD	5.0	6.40	7.82	10	9.6	156.3	800
1.5SMCJ5.0A-LFR	GDE	BDE	5.0	6.40	7.07	10	9.2	163.0	800
1.5SMCJ6.0-LFR	GDF	BDF	6.0	6.67	8.15	10	11.4	131.6	800
1.5SMCJ6.0A-LFR	GDG	BDG	6.0	6.67	7.37	10	10.3	145.6	800
1.5SMCJ6.5-LFR	GDH	BDH	6.5	7.22	8.82	10	12.3	122.0	500
1.5SMCJ6.5A-LFR	GDK	BDK	6.5	7.22	7.98	10	11.2	133.9	500
1.5SMCJ7.0-LFR	GDL	BDL	7.0	7.78	9.51	10	13.3	112.8	200
1.5SMCJ7.0A-LFR		BDM	7.0	7.78	8.60	10	12.0	125.0	200
1.5SMCJ7.5-LFR	GDM	BDN	7.5	8.33	10.2	1.0	14.3	104.9	100
1.5SMCJ7.5A-LFR	GDN	BDP	7.5	8.33	9.21	1.0	12.9	116.3	100
1.5SMCJ8.0-LFR	GDP	BDQ	8.0	8.89	10.9	1.0	15.0	100.0	50.0
1.5SMCJ8.0A-LFR	GDQ	BDR	8.0	8.89	9.83	1.0	13.6	110.3	50.0
1.5SMCJ8.5-LFR	GDR	BDS	8.5	9.44	11.5	1.0	15.9	94.3	10.0
1.5SMCJ8.5A-LFR	GDS	BDT	8.5	9.44	10.4	1.0	14.4	104.2	10.0
1.5SMCJ9.0-LFR	GDT	BDU	9.0	10.0	12.2	1.0	16.9	88.8	5.0
1.5SMCJ9.0A-LFR	GDU	BDV	9.0	10.0	11.1	1.0	15.4	97.4	5.0
1.5SMCJ10-LFR	GDV	BDW	10.0	11.1	13.6	1.0	18.8	79.8	5.0
1.5SMCJ10A-LFR		BDX	10.0	11.1	12.3	1.0	17.0	88.2	5.0
1.5SMCJ11-LFR	GDW	BDY	11.0	12.2	14.9	1.0	20.1	74.6	5.0
1.5SMCJ11A-LFR	GDX	BDZ	11.0	12.2	13.5	1.0	18.2	82.4	5.0
1.5SMCJ12-LFR	GDY	BED	12.0	13.3	16.3	1.0	22.0	68.2	5.0
1.5SMCJ12A-LFR	GDZ	BEE	12.0	13.3	14.7	1.0	19.9	75.4	5.0
1.5SMCJ13-LFR	GED	BEF	13.0	14.4	17.6	1.0	23.8	63.0	5.0
1.5SMCJ13A-LFR	GEE	BEG	13.0	14.4	15.9	1.0	21.5	69.8	5.0
1.5SMCJ14-LFR	GEF	BEH	14.0	15.6	19.1	1.0	25.8	58.1	5.0
1.5SMCJ14A-LFR	GEG	BEK	14.0	15.6	17.2	1.0	23.2	64.7	5.0
1.5SMCJ15-LFR	GEH	BEL	15.0	16.7	20.4	1.0	26.9	55.8	5.0
1.5SMCJ15A-LFR	GEK	BEM	15.0	16.7	18.5	1.0	24.4	61.5	5.0
1.5SMCJ16-LFR	GEL	BEN	16.0	17.8	21.8	1.0	28.8	52.1	5.0
1.5SMCJ16A-LFR	GEM	BEP	16.0	17.8	19.7	1.0	26.0	57.7	5.0
1.5SMCJ17-LFR	GEN	BEQ	17.0	18.9	23.1	1.0	30.5	49.2	5.0
1.5SMCJ17A-LFR	GEP	BER	17.0	18.9	20.9	1.0	27.6	54.3	5.0
1.5SMCJ18-LFR	GEQ	BES	18.0	20.0	24.4	1.0	32.2	46.6	5.0
1.5SMCJ18A-LFR	GER	BET	18.0	20.0	22.1	1.0	29.2	51.4	5.0
1.5SMCJ20-LFR	GES	BEU	20.0	22.2	27.1	1.0	35.8	41.9	5.0
1.5SMCJ20A-LFR	GET	BEV	20.0	22.2	24.5	1.0	32.4	46.3	5.0
1.5SMCJ22-LFR	GEU	BEW	22.0	24.4	29.8	1.0	39.4	38.1	5.0
1.5SMCJ22A-LFR	GEV	BEX	22.0	24.4	26.9	1.0	35.5	42.3	5.0
1.5SMCJ24-LFR		BEY	24.0	26.7	32.6	1.0	43.0	34.9	5.0
1.5SMCJ24A-LFR	GEW	BEZ	24.0	26.7	29.5	1.0	38.9	38.6	5.0
1.5SMCJ26-LFR	GEX	BFD	26.0	28.9	35.3	1.0	46.6	32.2	5.0
1.5SMCJ26A-LFR	GEY	BFE	26.0	28.9	31.9	1.0	42.1	35.6	5.0
1.5SMCJ28-LFR	GEZ	BFF	28.0	31.1	38.0	1.0	50.0	30.0	5.0
1.5SMCJ28A-LFR	GFD	BFG	28.0	31.1	34.4	1.0	45.4	33.0	5.0
1.5SMCJ30-LFR	GFE	BFH	30.0	33.3	40.7	1.0	53.5	28.0	5.0
1.5SMCJ30A-LFR	GFF	BFK	30.0	33.3	36.8	1.0	48.4	31.0	5.0
1.5SMCJ33-LFR	GFG	BFL	33.0	36.7	44.9	1.0	59.0	25.4	5.0
1.5SMCJ33A-LFR	GFH	BFM	33.0	36.7	40.6	1.0	53.3	28.1	5.0
1.5SMCJ36-LFR	GFK	BFN	36.0	40.0	48.9	1.0	64.3	23.3	5.0
1.5SMCJ36A-LFR	GFL	BFP	36.0	40.0	44.2	1.0	58.1	25.8	5.0
1.5SMCJ40-LFR	GFM	BFQ	40.0	44.4	54.3	1.0	71.4	21.0	5.0
1.5SMCJ40A-LFR	GFN	BFR	40.0	44.4	49.1	1.0	64.5	23.3	5.0
1.5SMCJ43-LFR	GFP	BFS	43.0	47.8	58.4	1.0	76.7	19.6	5.0
1.5SMCJ43A-LFR	GFQ	BFT	43.0	47.8	52.8	1.0	69.4	21.6	5.0
1.5SMCJ45-LFR	GFR	BFU	45.0	50.0	61.1	1.0	80.3	18.7	5.0
1.5SMCJ45A-LFR	GFS	BFV	45	50.0	55.3	1.0	72.7	20.6	5.0
1.5SMCJ48-LFR	GFT	BFW	48	53.3	65.1	1.0	85.5	17.5	5.0
1.5SMCJ48A-LFR	GFU	BFX	48	53.3	58.9	1.0	77.4	19.4	5.0
	GFV								
	GFW								
	GFX								

DEVICE	DEVICE MARKING CODE		WORKING PEAK REVERSE VOLTAGE V_{WM}(VOLTS)	BREAKDOWN VOLTAGE $V_{(BR)}$ (VOLTS) at I_T		TEST CURRENT I_T(mA)	MAXIMUM Clamping VOLTAGE AT I_{PPM} VC(Volts) (Note 5)	MAX PEAK PULSE SURGE CURRENT I_{PPM} (NOTE 5) (Amps)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D(μA)
	UNI	BI		MIN	MAX				
1.5SMCJ51-LFR	GFY	BFY	51	56.7	69.3	1.0	91.1	16.5	5.0
1.5SMCJ51A-LFR	GFZ	BFZ	51	56.7	62.7	1.0	82.4	18.2	5.0
1.5SMCJ54-LFR	GGD	BGD	54	60.0	73.3	1.0	96.3	15.6	5.0
1.5SMCJ54A-LFR	GGE	BGE	54	60.0	66.3	1.0	87.1	17.2	5.0
1.5SMCJ58-LFR	GGF	BGF	58	64.4	78.7	1.0	103.0	14.6	5.0
1.5SMCJ58A-LFR	GGG	BGG	58	64.4	71.2	1.0	93.0	16.0	5.0
1.5SMCJ60-LFR	GGH	BGH	60	66.7	81.5	1.0	107.0	14.0	5.0
1.5SMCJ60A-LFR	GGK	BGK	60	66.7	73.7	1.0	96.0	15.5	5.0
1.5SMCJ64-LFR	GGL	BGL	64	71.1	86.9	1.0	114.0	13.2	5.0
1.5SMCJ64A-LFR	GGM	BGM	64	71.1	78.6	1.0	103.0	14.6	5.0
1.5SMCJ70-LFR	GGN	BGN	70	77.8	95.1	1.0	125.0	12.0	5.0
1.5SMCJ70A-LFR	GGP	BGP	70	77.8	86.0	1.0	113.0	13.3	5.0
1.5SMCJ75-LFR	GGQ	BGQ	75	83.3	102.0	1.0	134.0	11.2	5.0
1.5SMCJ75A-LFR	GGR	BGR	75	83.3	92.1	1.0	121.0	12.4	5.0
1.5SMCJ78-LFR	GGS	BGS	78	86.7	106.0	1.0	139.0	10.8	5.0
1.5SMCJ78A-LFR	GGT	BGT	78	86.7	95.8	1.0	126.0	11.9	5.0
1.5SMCJ85-LFR	GGU	BGU	85	94.4	115.0	1.0	151.0	9.9	5.0
1.5SMCJ85A-LFR	GGV	BGV	85	94.4	104.0	1.0	137.0	10.9	5.0
1.5SMCJ90-LFR	GGW	BGW	90	100	122.0	1.0	160.0	9.4	5.0
1.5SMCJ90A-LFR	GGX	BGX	90	100	111.0	1.0	146.0	10.3	5.0
1.5SMCJ100-LFR	GGY	BGY	100	111	136.0	1.0	179.0	8.4	5.0
1.5SMCJ100A-LFR	GGZ	BGZ	100	111	123.0	1.0	162.0	9.3	5.0
1.5SMCJ110-LFR	GHD	BHD	110	122	149.0	1.0	196.0	7.7	5.0
1.5SMCJ110A-LFR	GHE	BHE	110	122	135.0	1.0	177.0	8.5	5.0
1.5SMCJ120-LFR	GHF	BHF	120	133	163.0	1.0	214.0	7.0	5.0
1.5SMCJ120A-LFR	GHG	BHG	120	133	147.0	1.0	193.0	7.8	5.0
1.5SMCJ130-LFR	GHH	BHH	130	144	176.0	1.0	231.0	6.5	5.0
1.5SMCJ130A-LFR	GHK	BHK	130	144	159.0	1.0	209.0	7.2	5.0
1.5SMCJ150-LFR	GHL	BHL	150	167	204.0	1.0	268.0	5.6	5.0
1.5SMCJ150A-LFR	GHM	BHM	150	167	185.0	1.0	243.0	6.2	5.0
1.5SMCJ160-LFR	GHN	BHN	160	178	218.0	1.0	287.0	5.2	5.0
1.5SMCJ160A-LFR	GHP	BHP	160	178	197.0	1.0	259.0	5.8	5.0
1.5SMCJ170-LFR	GHQ	BHQ	170	189	231.0	1.0	304.0	4.9	5.0
1.5SMCJ170A-LFR	GHR	BHR	170	189	209.0	1.0	275.0	5.5	5.0
1.5SMCJ188-LFR	GHT	GHT	188	209	255.0	1.0	344.0	4.4	5.0
1.5SMCJ188A-LFR	GHS	GHS	188	209	231.0	1.0	328.0	4.6	5.0

NOTE:

1. VF=3.5V on 1.5SMCJ5.0 thru 90A devices and VF=5.0V on 1.5SMCJ100 thru 188A devices at IF=25A on ½ Square or Equivalent Sine Wave. PW = 8.3ms, Duty Cycle = 4 Pulses per Minute Maximum
2. For Bipolar types with VR of 10 volts and under, the IR limit is doubled.
3. Mounted on 5.0mm^2 copper pads to each terminal.
4. For Bidirectional use C suffix for 10% tolerance, CA suffix for 5% tolerance.

FIG. 1 - PEAK PULSE POWER RATING CURVE

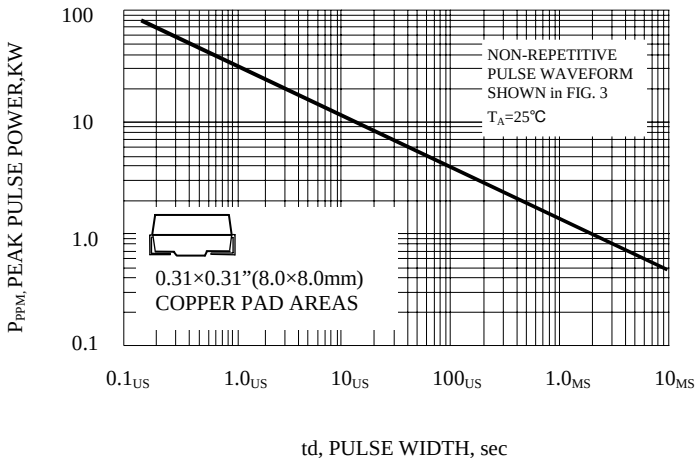


FIG. 2 - PULSE DERATING CURVE

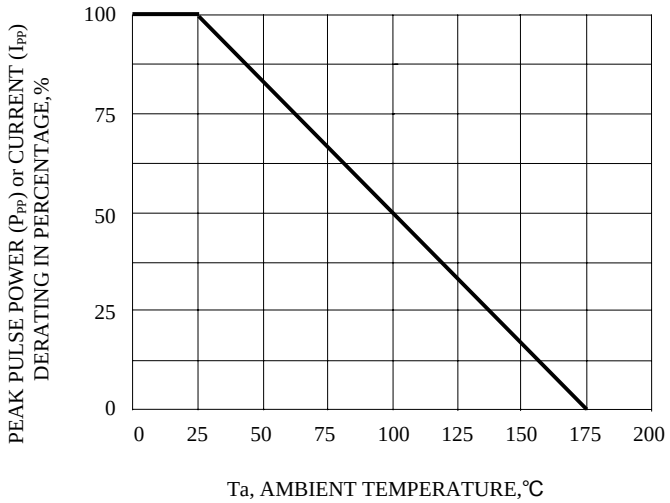


FIG. 3 - PULSE WAVEFORM

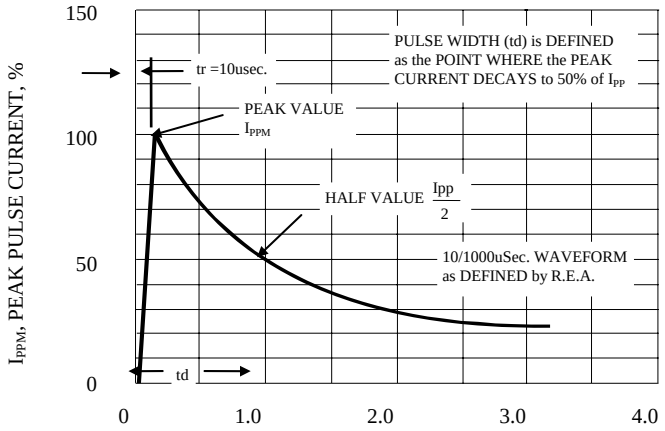


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

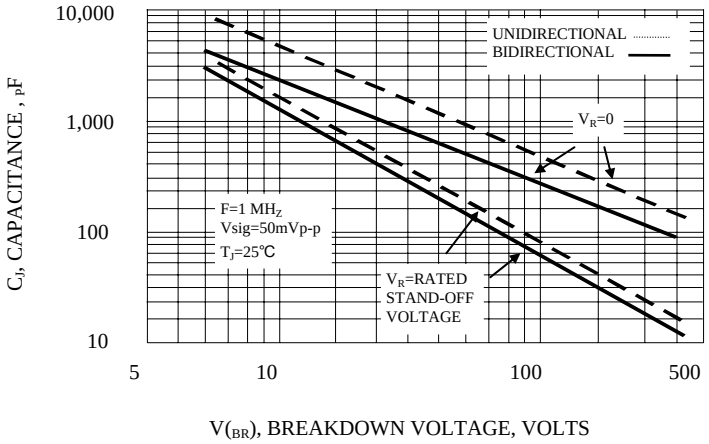


FIG. 5 - STEADY STATE POWER DERATING CURVE

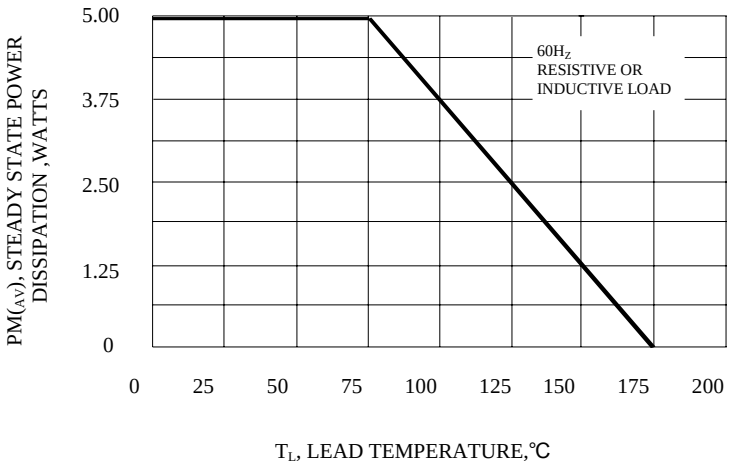


FIG. 6 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

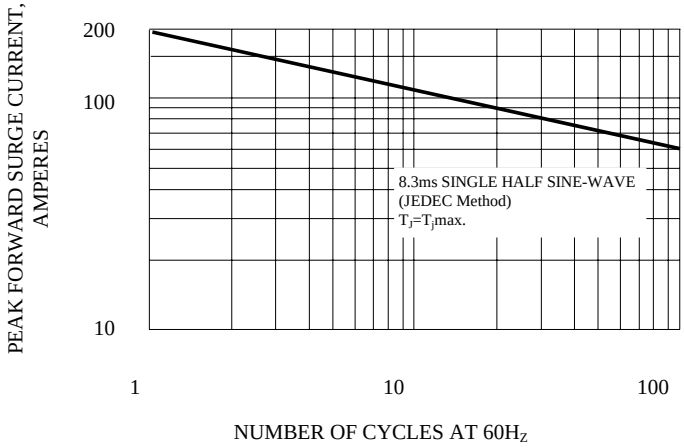


FIG. 7 - INCREMENTAL CLAMPING VOLTAGE CURVE
UNIDIRECTIONAL

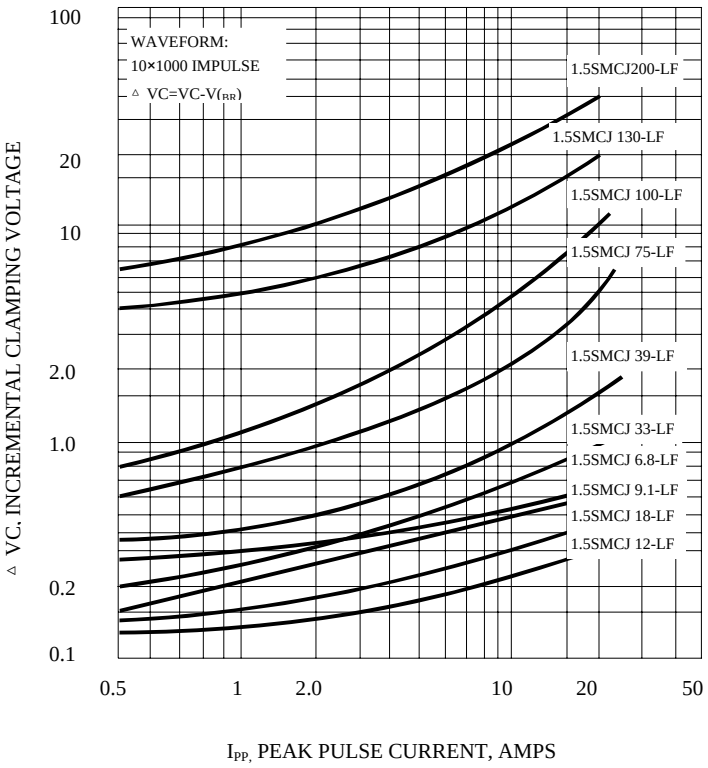


FIG. 8 - INCREMENTAL CLAMPING VOLTAGE CURVE
UNIDIRECTIONAL

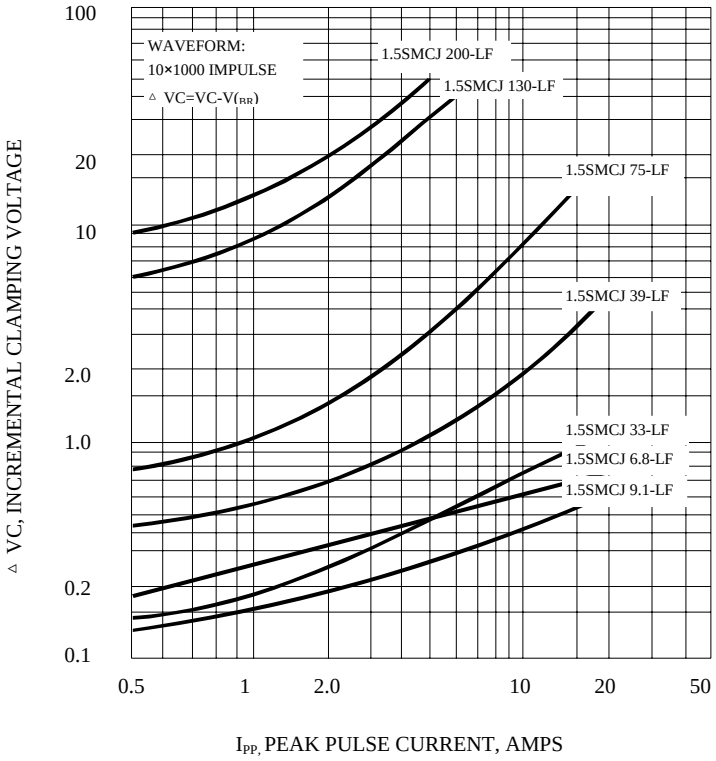


FIG. 9 - INCREMENTAL CLAMPING VOLTAGE CIRVE
BIDIRECTIONAL

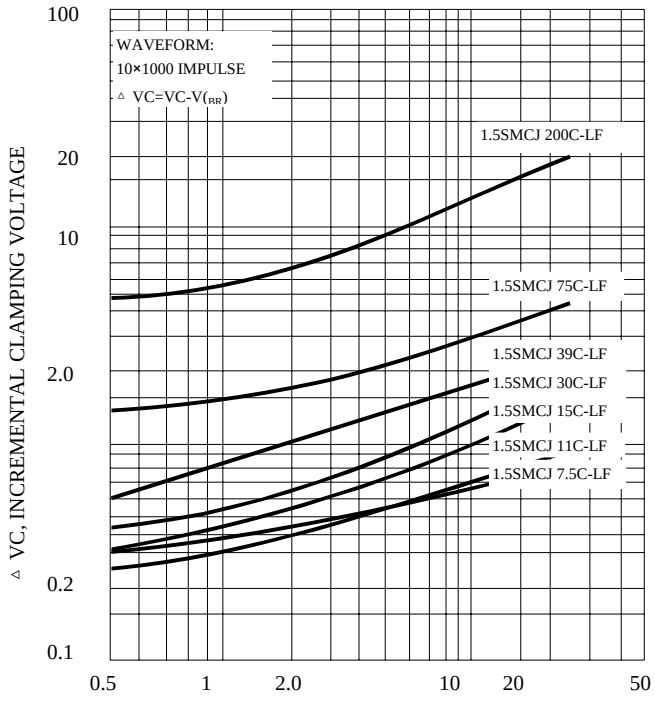


FIG. 10 - INCREMENTAL CLAMPING VOLTAGE CURVE
BIDIRECTIONAL

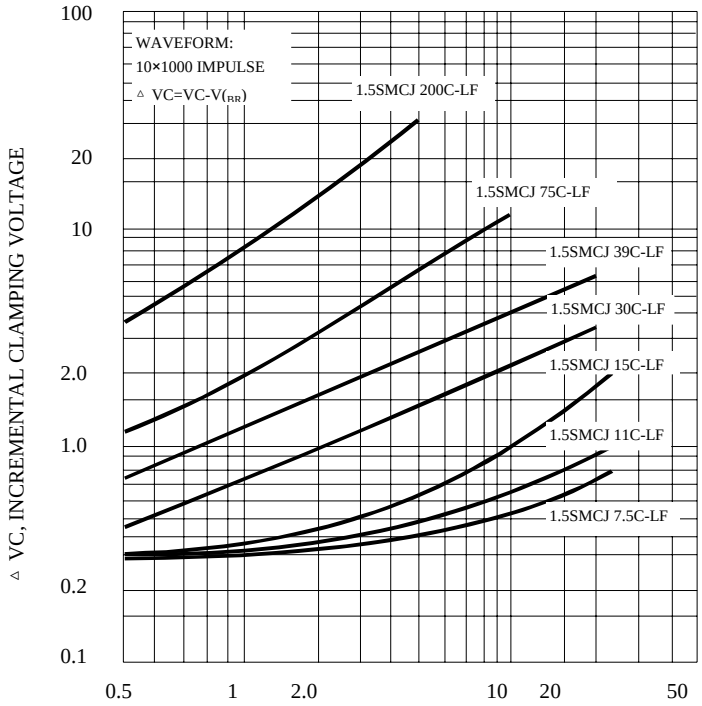


FIG. 11 - INSTANTANEOUS FORWARD
VOLTAGE CHARACTERISTICS CURVE

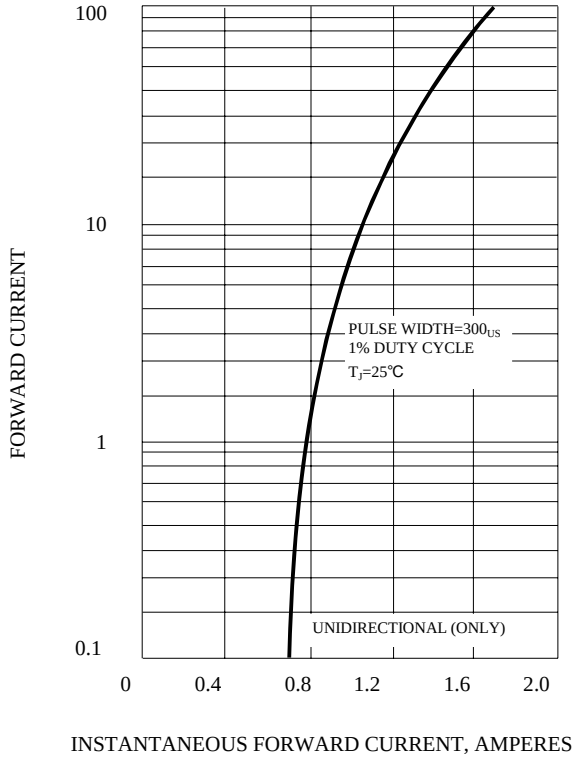


FIG. 12 - BREAKDOWN VOLTAGE
TEMPERATURE COEFFICIENT CURVE