GiiTop Electronics CO.,LTD.

SMAJ5.0(C)A THRU SMAJ188(C)A

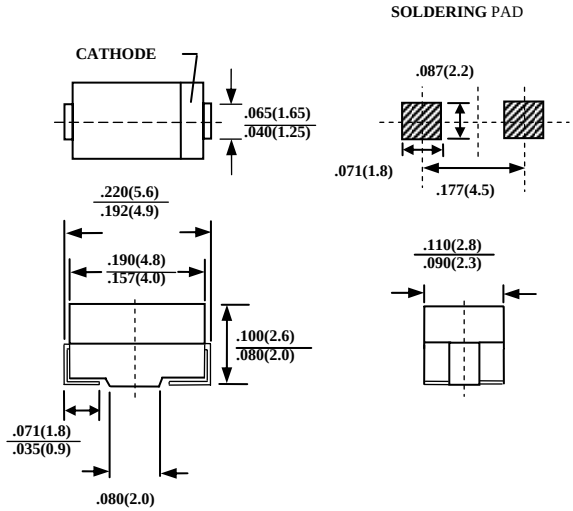
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- OPTIMIZED FOR LAN PROTECTION APPLICATION
- IDEAL FOR ESD PROTECTION OF DATA LINES IN ACCORDANCE WITH IEC 1000-4-2(IEC801-2)
- IDEAL FOR EFT PROTECTION OF DATA LINE IN ACCORDANCE WITH IEC 1000-4-4(IEC801-4)
- EXCELLENT CLAMPING CAPABILITY
- LOW INCREMENTAL SURGE RESISTANCE
- FAST RESPONSE TIME:TYPICALLY LESS THAN 1.0 ps FROM 0 VOLTS TO V(BR) MIN
- 400 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℃/10 SECONDS AT TERMINAL
- LEAD FREE

MECHANICAL DATA

- CASE：MOLDED PLASTIC
- TERMINALS：SOLDER PLATED
- POLARITY：INDICATED BY CATHODE BAND
- WEIGHT：0.064 GRAMS



CASE：DO-214AC (SMA)
DIMENSIONS IN INCHES AND (MILLIMETERS)

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 400	WATTS
PEAK PULSE CURRENT OF 0N 10/1000μS WAVEFORM (NOTE 1,FIG. 3)	I_{PPM}	SEE TABLE 1	A
STEADY STATE POWER DISSIPATION AT T_L=75℃(NOTE 2)	$P_{M(AV)}$	1.0	WATTS
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD, UNIDIRECTIONAL ONLY(NOTE 3)	I_{FSM}	40	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE AT 25.0A FOR UNIDIRECTIONAL ONLY (NOTE 3 & 4)	VF	3.5	V
OPERATING JUNCTION AND STORAGE TEMPERATURE RANGE	T_J,T_{STG}	- 55 TO + 150	℃

NOTE： 1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE TA=25℃PER FIG 2.
2. MOUNTED ON 5.0mm^2 COPPER PADS TO EACH TERMINAL
3. LEAD TEMPERTURE AT 75℃ =T_L PER FIG. 5
4. MEASURED ON 8.3mS SINGLE HALF SINE-WAVE. FOR UNI-DIRECTINAL DEVICES ONLY
5. PEAK PULSE POWER WAVEFORM IS 10/1000 μS

SMAJ 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-POLAR	BI-POLAR	UNI	BI		MIN	MAX				
SMAJ5.0	SMAJ5.0C	AD	WD	5.0	6.40	7.82	10	9.6	41.7	800
SMAJ5.0A	SMAJ5.0CA	AE	WE	5.0	6.40	7.07	10	9.2	43.5	800
SMAJ6.0	SMAJ6.0C	AF	WF	6.0	6.67	8.15	10	11.4	35.1	800
SMAJ6.0A	SMAJ6.0CA	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800
SMAJ6.5	SMAJ6.5C	AH	WH	6.5	7.22	8.82	10	12.3	32.5	500
SMAJ6.5A	SMAJ6.5CA	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500
SMAJ7.0	SMAJ7.0C	AL	WL	7.0	7.78	9.51	10	13.3	30.1	200
SMAJ7.0A	SMAJ7.0CA	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200
SMAJ7.5	SMAJ7.5C	AN	WN	7.5	8.33	10.3	1.0	14.3	28.0	100
SMAJ7.5A	SMAJ7.5CA	AP	WP	7.5	8.33	9.21	1.0	12.9	31.0	100
SMAJ8.0	SMAJ8.0C	AQ	WQ	8.0	8.89	10.9	1.0	15.0	26.7	50.0
SMAJ8.0A	SMAJ8.0CA	AR	WR	8.0	8.89	9.83	1.0	13.6	29.4	50.0
SMAJ8.5	SMAJ8.5C	AS	WS	8.5	9.44	11.5	1.0	15.9	25.2	10.0
SMAJ8.5A	SMAJ8.5CA	AT	WT	8.5	9.44	10.4	1.0	14.4	27.8	10.0
SMAJ9.0	SMAJ9.0C	AU	WU	9.0	10.0	12.2	1.0	16.9	23.7	5.0
SMAJ9.0A	SMAJ9.0CA	AV	WV	9.0	10.0	11.1	1.0	15.4	26.0	5.0
SMAJ10	SMAJ10C	AW	WW	10.0	11.1	13.6	1.0	18.8	21.3	5.0
SMAJ10A	SMAJ10CA	AX	WX	10.0	11.1	12.3	1.0	17.0	23.5	5.0
SMAJ11	SMAJ11C	AY	WY	11.0	12.2	14.9	1.0	20.1	19.9	5.0
SMAJ11A	SMAJ11CA	AZ	WZ	11.0	12.2	13.5	1.0	18.2	22.0	5.0
SMAJ12	SMAJ12C	BD	XD	12.0	13.3	16.3	1.0	22.0	18.2	5.0
SMAJ12A	SMAJ12CA	BE	XE	12.0	13.3	14.7	1.0	19.9	20.1	5.0
SMAJ13	SMAJ13C	BF	XF	13.0	14.4	17.6	1.0	23.8	16.8	5.0
SMAJ13A	SMAJ13CA	BG	XG	13.0	14.4	15.9	1.0	21.5	18.6	5.0
SMAJ14	SMAJ14C	BH	XH	14.0	15.6	19.1	1.0	25.8	15.5	5.0
SMAJ14A	SMAJ14CA	BK	XK	14.0	15.6	17.2	1.0	23.2	17.2	5.0
SMAJ15	SMAJ15C	BL	XL	15.0	16.7	20.4	1.0	26.9	14.9	5.0
SMAJ15A	SMAJ15CA	BM	XM	15.0	16.7	18.5	1.0	24.4	16.4	5.0
SMAJ16	SMAJ16C	BN	XN	16.0	17.8	21.8	1.0	28.8	13.9	5.0
SMAJ16A	SMAJ16CA	BP	XP	16.0	17.8	19.7	1.0	26.0	15.4	5.0
SMAJ17	SMAJ17C	BQ	XQ	17.0	18.9	23.1	1.0	30.5	13.1	5.0
SMAJ17A	SMAJ17CA	BR	XR	17.0	18.9	20.9	1.0	27.6	14.5	5.0
SMAJ18	SMAJ18C	BS	XS	18.0	20.0	24.4	1.0	32.2	12.4	5.0
SMAJ18A	SMAJ18CA	BT	XT	18.0	20.0	22.1	1.0	29.2	13.7	5.0
SMAJ20	SMAJ20C	BU	XU	20.0	22.2	27.1	1.0	35.8	11.2	5.0
SMAJ20A	SMAJ20CA	BV	XV	20.0	22.2	24.5	1.0	32.4	12.3	5.0
SMAJ22	SMAJ22C	BW	XW	22.0	24.4	29.8	1.0	39.4	10.2	5.0
SMAJ22A	SMAJ22CA	BX	XX	22.0	24.4	26.9	1.0	35.5	11.3	5.0
SMAJ24	SMAJ24C	BY	XY	24.0	26.7	32.6	1.0	43.0	9.3	5.0
SMAJ24A	SMAJ24CA	BZ	XZ	24.0	26.7	29.5	1.0	38.9	10.3	5.0
SMAJ26	SMAJ26C	CD	YD	26.0	28.9	35.3	1.0	46.6	8.58	5.0
SMAJ26A	SMAJ26CA	CE	YE	26.0	28.9	31.9	1.0	42.1	9.5	5.0
SMAJ28	SMAJ28C	CF	YF	28.0	31.1	38.0	1.0	50.1	8.0	5.0
SMAJ28A	SMAJ28CA	CG	YG	28.0	31.1	34.4	1.0	45.4	8.81	5.0
SMAJ30	SMAJ30C	CH	YH	30.0	33.3	40.7	1.0	53.5	7.48	5.0
SMAJ30A	SMAJ30CA	CK	YK	30.0	33.3	36.8	1.0	48.4	8.26	5.0
SMAJ33	SMAJ33C	CL	YL	33.0	36.7	44.9	1.0	59.0	6.78	5.0
SMAJ33A	SMAJ33CA	CM	YM	33.0	36.7	40.6	1.0	53.3	7.5	5.0
SMAJ36	SMAJ36C	CN	YN	36.0	40.0	48.9	1.0	64.3	6.22	5.0
SMAJ36A	SMAJ36CA	CP	YP	36.0	40.0	44.2	1.0	58.1	6.88	5.0
SMAJ40	SMAJ40C	CQ	YQ	40.0	44.4	54.3	1.0	71.4	5.6	5.0
SMAJ40A	SMAJ40CA	CR	YR	40.0	44.4	49.1	1.0	64.5	6.2	5.0
SMAJ43	SMAJ43C	CS	YS	43.0	47.8	58.4	1.0	76.7	5.22	5.0
SMAJ43A	SMAJ43CA	CT	YT	43.0	47.8	52.8	1.0	69.4	5.76	5.0
SMAJ45	SMAJ45C	CU	YU	45.0	50.0	61.1	1.0	80.3	4.98	5.0
SMAJ45A	SMAJ45CA	CV	YV	45	50.0	55.3	1.0	72.7	5.5	5.0
SMAJ48	SMAJ48C	CW	YW	48	53.3	65.1	1.0	85.5	4.68	5.0
SMAJ48A	SMAJ48CA	CX	YX	48	53.3	58.9	1.0	77.4	5.17	5.0

SMAJ 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-POLAR	BI-POLAR	UNI	BI		MIN	MAX				
SMAJ51	SMAJ51C	CY	YY	51	56.7	69.3	1.0	91.1	4.39	5.0
SMAJ51A	SMAJ51CA	CZ	YZ	51	56.7	62.7	1.0	82.4	4.85	5.0
SMAJ54	SMAJ54C	RD	ZD	54	60.0	73.3	1.0	96.3	4.15	5.0
SMAJ54A	SMAJ54CA	RE	ZE	54	60.0	66.3	1.0	87.1	4.59	5.0
SMAJ58	SMAJ58C	RF	ZF	58	64.4	78.7	1.0	103.0	3.88	5.0
SMAJ58A	SMAJ58CA	RG	ZG	58	64.4	71.2	1.0	93.6	4.27	5.0
SMAJ60	SMAJ60C	RH	ZH	60	66.7	81.5	1.0	107.0	3.74	5.0
SMAJ60A	SMAJ60CA	RK	ZK	60	66.7	73.7	1.0	96.8	4.13	5.0
SMAJ64	SMAJ64C	RL	ZL	64	71.1	86.4	1.0	114.0	3.51	5.0
SMAJ64A	SMAJ64CA	RM	ZM	64	71.1	78.6	1.0	103.0	3.88	5.0
SMAJ70	SMAJ70C	RN	ZN	70	77.8	95.1	1.0	125.0	3.2	5.0
SMAJ70A	SMAJ70CA	RP	ZP	70	77.8	86.0	1.0	113.0	3.54	5.0
SMAJ75	SMAJ75C	RQ	ZQ	75	83.3	102.0	1.0	134.0	2.99	5.0
SMAJ75A	SMAJ75CA	RR	ZR	75	83.3	92.1	1.0	121.0	3.31	5.0
SMAJ78	SMAJ78C	RS	ZS	78	86.7	106.0	1.0	139.0	2.88	5.0
SMAJ78A	SMAJ78CA	RT	ZT	78	86.7	95.8	1.0	126.0	3.17	5.0
SMAJ85	SMAJ85C	RU	ZU	85	94.4	115.0	1.0	151.0	2.65	5.0
SMAJ85A	SMAJ85CA	RV	ZV	85	94.4	104.0	1.0	137.0	2.92	5.0
SMAJ90	SMAJ90C	RW	ZW	90	100	122.0	1.0	160.0	2.5	5.0
SMAJ90A	SMAJ90CA	RX	ZX	90	100	111.0	1.0	146.0	2.74	5.0
SMAJ100	SMAJ100C	RY	ZY	100	111	136.0	1.0	179.0	2.23	5.0
SMAJ100A	SMAJ100CA	RZ	ZZ	100	111	123.0	1.0	162.0	2.47	5.0
SMAJ110	SMAJ110C	SD	VD	110	122	149.0	1.0	196.0	2.04	5.0
SMAJ110A	SMAJ110CA	SE	VE	110	122	135.0	1.0	177.0	2.26	5.0
SMAJ120	SMAJ120C	SF	VF	120	133	163.0	1.0	214.0	1.87	5.0
SMAJ120A	SMAJ120CA	SG	VG	120	133	147.0	1.0	193.0	2.07	5.0
SMAJ130	SMAJ130C	SH	VH	130	144	176.0	1.0	231.0	1.73	5.0
SMAJ130A	SMAJ130CA	SK	VK	130	144	159.0	1.0	209.0	1.91	5.0
SMAJ150	SMAJ150C	SL	VL	150	167	204.0	1.0	268.0	1.49	5.0
SMAJ150A	SMAJ150CA	SM	VM	150	167	185.0	1.0	243.0	1.65	5.0
SMAJ160	SMAJ160C	SN	VN	160	178	218.0	1.0	287.0	1.39	5.0
SMAJ160A	SMAJ160CA	SP	VP	160	178	197.0	1.0	259.0	1.54	5.0
SMAJ170	SMAJ170C	SQ	VQ	170	189	231.0	1.0	304.0	1.32	5.0
SMAJ170A	SMAJ170CA	SR	VR	170	189	209.0	1.0	275.0	1.45	5.0
SMAJ188	SMAJ188C	ST	VT	188	209	255.0	1.0	344.0	1.1	5.0
SMAJ188A	SMAJ188CA	SS	VS	188	209	231.0	1.0	328.0	1.2	5.0

NOTE： 1. VF=3.5V 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

RATINGS AND CHARACTERISTIC CURVES SMAJ5.0(C) THRU SMAJ188(C)A

FIG. 1 - PEAK PULSE POWER RATING CURVE

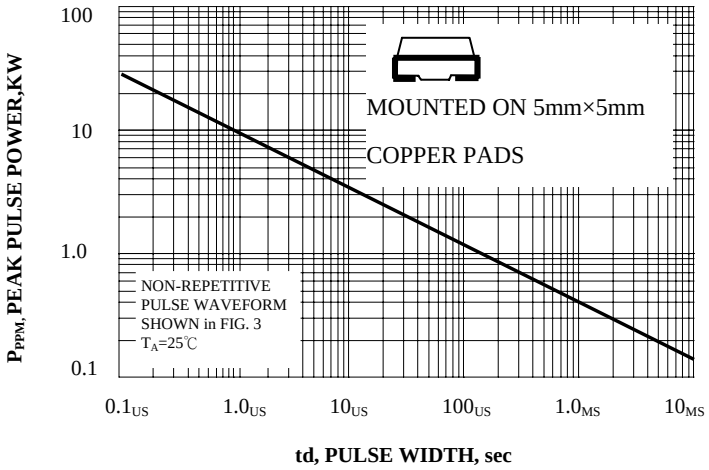


FIG. 2 - PULSE DERATING CURVE

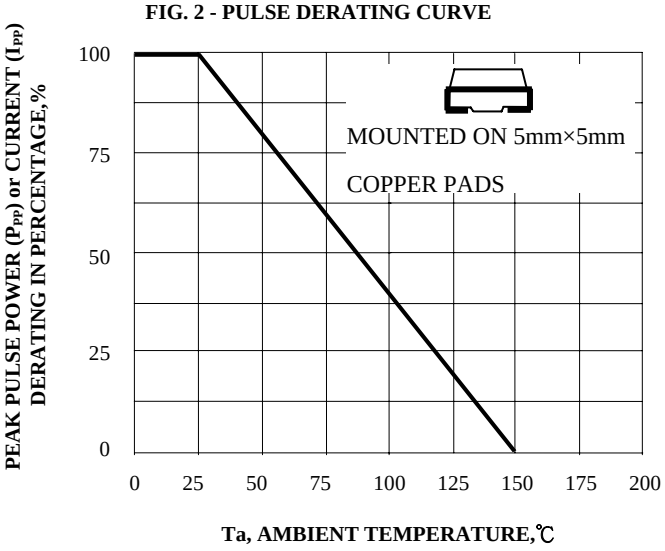


FIG. 3 - PULSE WAVEFORM

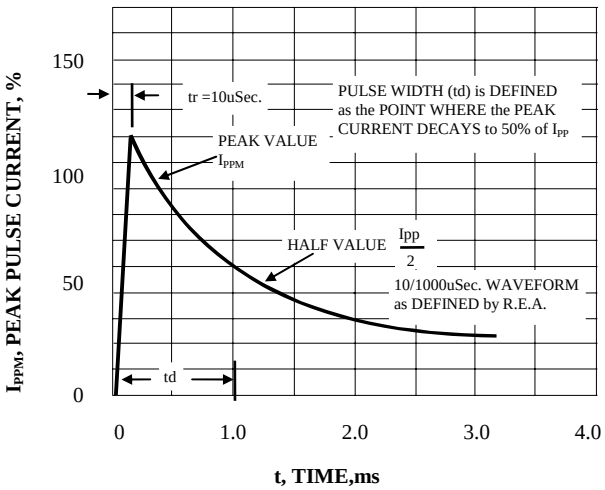


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

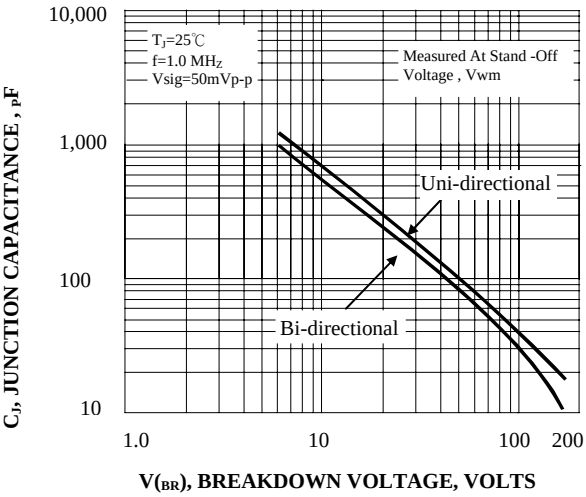


FIG. 5 - STEADY STATE POWER DERATING CURVE

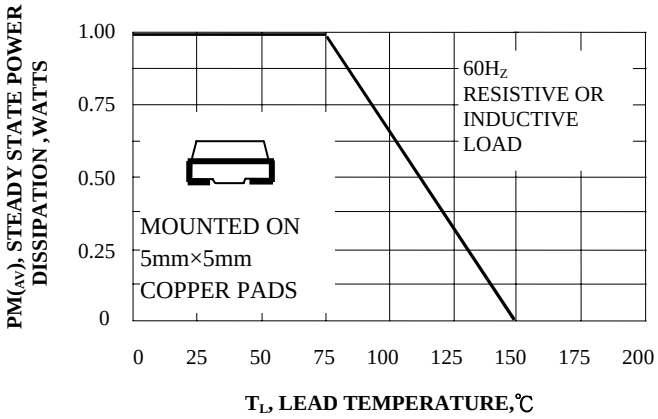


FIG. 6 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY