

P4SMAJ5.0-LF THRU P4SMAJ188A-LF

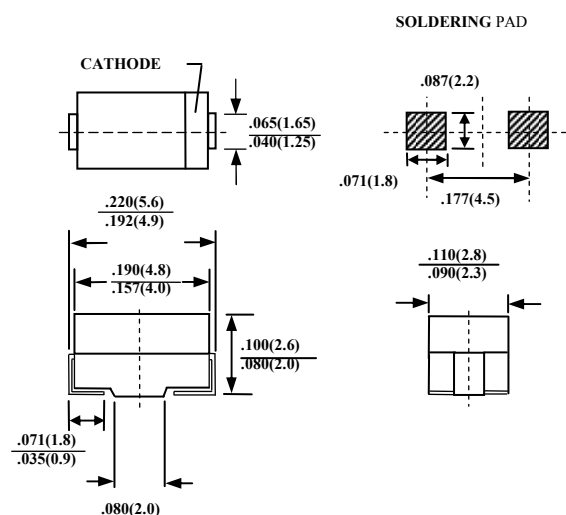
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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 μ S WAVEFORM, REPETITION RATE (DUTY CYCLE) : 0.01%
- TYPICAL I_D LESS THAN 1 μ A ABOVE 10V
- HIGH TEMPERATURE SOLDERING GUARANTEED: 250°C / 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 10/1000 μ S WAVEFORM (NOTE 1, FIG. 1)	P_{PPM}	MINIMUM 400	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 $T_L=75^\circ\text{C}$ (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)	V _F	3.5	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 $T_A=25^\circ\text{C}$ PER FIG 2.
 2. MOUNTED ON 5.0mm² COPPER PADS TO EACH TERMINAL
 3. LEAD TEMPERATURE AT 75°C = 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 μ S

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 (μ A)
UNI	BI	UNI	BI		MIN	MAX				
P4SMAJ5.0-LF	P4SMAJ5.0C-LF	AD	WD	5.0	6.40	7.82	10	9.6	41.7	800
P4SMAJ5.0A-LF	P4SMAJ5.0CA-LF	AE	WE	5.0	6.40	7.07	10	9.2	43.5	800
P4SMAJ6.0-LF	P4SMAJ6.0C-LF	AF	WF	6.0	6.67	8.15	10	11.4	35.1	800
P4SMAJ6.0A-LF	P4SMAJ6.0CA-LF	AG	WG	6.0	6.67	7.37	10	10.3	38.8	800
P4SMAJ6.5-LF	P4SMAJ6.5C-LF	AH	WH	6.5	7.22	8.82	10	12.3	32.5	500
P4SMAJ6.5A-LF	P4SMAJ6.5CA-LF	AK	WK	6.5	7.22	7.98	10	11.2	35.7	500
P4SMAJ7.0-LF	P4SMAJ7.0C-LF	AL	WL	7.0	7.78	9.51	10	13.3	30.1	200
P4SMAJ7.0A-LF	P4SMAJ7.0CA-LF	AM	WM	7.0	7.78	8.60	10	12.0	33.3	200
P4SMAJ7.5-LF	P4SMAJ7.5C-LF	AN	WN	7.5	8.33	10.3	1.0	14.3	28.0	100
P4SMAJ7.5A-LF	P4SMAJ7.5CA-LF	AP	WP	7.5	8.33	9.21	1.0	12.9	31.0	100
P4SMAJ8.0-LF	P4SMAJ8.0C-LF	AQ	WQ	8.0	8.89	10.9	1.0	15.0	26.7	50.0
P4SMAJ8.0A-LF	P4SMAJ8.0CA-LF	AR	WR	8.0	8.89	9.83	1.0	13.6	29.4	50.0
P4SMAJ8.5-LF	P4SMAJ8.5C-LF	AS	WS	8.5	9.44	11.5	1.0	15.9	25.2	10.0
P4SMAJ8.5A-LF	P4SMAJ8.5AC-LF	AT	WT	8.5	9.44	10.4	1.0	14.4	27.8	10.0
P4SMAJ9.0-LF	P4SMAJ9.0C-LF	AU	WU	9.0	10.0	12.2	1.0	16.9	23.7	5.0
P4SMAJ9.0A-LF	P4SMAJ9.0AC-LF	AV	WV	9.0	10.0	11.1	1.0	15.4	26.0	5.0
P4SMAJ10-LF	P4SMAJ10C-LF	AW	WW	10.0	11.1	13.6	1.0	18.8	21.3	5.0
P4SMAJ10A-LF	P4SMAJ10CA-LF	AX	WX	10.0	11.1	12.3	1.0	17.0	23.5	5.0
P4SMAJ11-LF	P4SMAJ11C-LF	AY	WY	11.0	12.2	14.9	1.0	20.1	19.9	5.0
P4SMAJ11A-LF	P4SMAJ11CA-LF	AZ	WZ	11.0	12.2	13.5	1.0	18.2	22.0	5.0
P4SMAJ12-LF	P4SMAJ12C-LF	BD	XD	12.0	13.3	16.3	1.0	22.0	18.2	5.0
P4SMAJ12A-LF	P4SMAJ12CA-LF	BE	XE	12.0	13.3	14.7	1.0	19.9	20.1	5.0
P4SMAJ13-LF	P4SMAJ13C-LF	BF	XF	13.0	14.4	17.6	1.0	23.8	16.8	5.0
P4SMAJ13A-LF	P4SMAJ13CA-LF	BG	XG	13.0	14.4	15.9	1.0	21.5	18.6	5.0
P4SMAJ14-LF	P4SMAJ14C-LF	BH	XH	14.0	15.6	19.1	1.0	25.8	15.5	5.0
P4SMAJ14A-LF	P4SMAJ14CA-LF	BK	XK	14.0	15.6	17.2	1.0	23.2	17.2	5.0
P4SMAJ15-LF	P4SMAJ15C-LF	BL	XL	15.0	16.7	20.4	1.0	26.9	14.9	5.0
P4SMAJ15A-LF	P4SMAJ15CA-LF	BM	XM	15.0	16.7	18.5	1.0	24.4	16.4	5.0
P4SMAJ16-LF	P4SMAJ16C-LF	BN	XN	16.0	17.8	21.8	1.0	28.8	13.9	5.0
P4SMAJ16A-LF	P4SMAJ16CA-LF	BP	XP	16.0	17.8	19.7	1.0	26.0	15.4	5.0
P4SMAJ17-LF	P4SMAJ17C-LF	BQ	XQ	17.0	18.9	23.1	1.0	30.5	13.1	5.0
P4SMAJ17A-LF	P4SMAJ17CA-LF	BR	XR	17.0	18.9	20.9	1.0	27.6	14.5	5.0
P4SMAJ18-LF	P4SMAJ18C-LF	BS	XS	18.0	20.0	24.4	1.0	32.2	12.4	5.0
P4SMAJ18A-LF	P4SMAJ18CA-LF	BT	XT	18.0	20.0	22.1	1.0	29.2	13.7	5.0
P4SMAJ20-LF	P4SMAJ20C-LF	BU	XU	20.0	22.2	27.1	1.0	35.8	11.2	5.0
P4SMAJ20A-LF	P4SMAJ20CA-LF	BV	XV	20.0	22.2	24.5	1.0	32.4	12.3	5.0
P4SMAJ22-LF	P4SMAJ22C-LF	BW	XW	22.0	24.4	29.8	1.0	39.4	10.2	5.0
P4SMAJ22A-LF	P4SMAJ22CA-LF	BX	XX	22.0	24.4	26.9	1.0	35.5	11.3	5.0
P4SMAJ24-LF	P4SMAJ24C-LF	BY	XY	24.0	26.7	32.6	1.0	43.0	9.3	5.0
P4SMAJ24A-LF	P4SMAJ24CA-LF	BZ	XZ	24.0	26.7	29.5	1.0	38.9	10.3	5.0
P4SMAJ26-LF	P4SMAJ26C-LF	CD	YD	26.0	28.9	35.3	1.0	46.6	8.6	5.0
P4SMAJ26A-LF	P4SMAJ26CA-LF	CE	YE	26.0	28.9	31.9	1.0	42.1	9.5	5.0
P4SMAJ28-LF	P4SMAJ28C-LF	CF	YF	28.0	31.1	38.0	1.0	50.1	8.0	5.0
P4SMAJ28A-LF	P4SMAJ28CA-LF	CG	YG	28.0	31.1	34.4	1.0	45.4	8.8	5.0
P4SMAJ30-LF	P4SMAJ30C-LF	CH	YH	30.0	33.3	40.7	1.0	53.5	7.5	5.0
P4SMAJ30A-LF	P4SMAJ30CA-LF	CK	YK	30.0	33.3	36.8	1.0	48.4	8.3	5.0
P4SMAJ33-LF	P4SMAJ33C-LF	CL	YL	33.0	36.7	44.9	1.0	59.0	6.8	5.0
P4SMAJ33A-LF	P4SMAJ33CA-LF	CM	YM	33.0	36.7	40.6	1.0	53.3	7.5	5.0
P4SMAJ36-LF	P4SMAJ36C-LF	CN	YN	36.0	40.0	48.9	1.0	64.3	6.2	5.0
P4SMAJ36A-LF	P4SMAJ36CA-LF	CP	YP	36.0	40.0	44.2	1.0	58.1	6.9	5.0
P4SMAJ40-LF	P4SMAJ40C-LF	CQ	YQ	40.0	44.4	54.3	1.0	71.4	5.6	5.0
P4SMAJ40A-LF	P4SMAJ40CA-LF	CR	YR	40.0	44.4	49.1	1.0	64.5	6.2	5.0
P4SMAJ43-LF	P4SMAJ43C-LF	CS	YS	43.0	47.8	58.4	1.0	76.7	5.2	5.0
P4SMAJ43A-LF	P4SMAJ43CA-LF	CT	YT	43.0	47.8	52.8	1.0	69.4	5.8	5.0
P4SMAJ45-LF	P4SMAJ45C-LF	CU	YU	45.0	50.0	61.1	1.0	80.3	5.0	5.0
P4SMAJ45A-LF	P4SMAJ45CA-LF	CV	YV	45	50.0	55.3	1.0	72.7	5.5	5.0
P4SMAJ48-LF	P4SMAJ48C-LF	CW	YW	48	53.3	65.1	1.0	85.5	4.7	5.0
P4SMAJ48A-LF	P4SMAJ48CA-LF	CX	YX	48	53.3	58.9	1.0	77.4	5.2	5.0

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 (μ A)
UNI	BI	UNI	BI		MIN	MAX				
P4SMAJ51-LF	P4SMAJ51C-LF	CY	YY	51	56.7	69.3	1.0	91.1	4.4	5.0
P4SMAJ51A-LF	P4SMAJ51CA-LF	CZ	YZ	51	56.7	62.7	1.0	82.4	4.9	5.0
P4SMAJ54-LF	P4SMAJ54C-LF	RD	ZD	54	60.0	73.3	1.0	96.3	4.2	5.0
P4SMAJ54A-LF	P4SMAJ54CA-LF	RE	ZE	54	60.0	66.3	1.0	87.1	4.6	5.0
P4SMAJ58-LF	P4SMAJ58C-LF	RF	ZF	58	64.4	78.7	1.0	103.0	3.9	5.0
P4SMAJ58A-LF	P4SMAJ58CA-LF	RG	ZG	58	64.4	71.2	1.0	93.6	4.3	5.0
P4SMAJ60-LF	P4SMAJ60C-LF	RH	ZH	60	66.7	81.5	1.0	107.0	3.7	5.0
P4SMAJ60A-LF	P4SMAJ60CA-LF	RK	ZK	60	66.7	73.7	1.0	96.8	4.1	5.0
P4SMAJ64-LF	P4SMAJ64C-LF	RL	ZL	64	71.1	86.4	1.0	114.0	3.5	5.0
P4SMAJ64A-LF	P4SMAJ64CA-LF	RM	ZM	64	71.1	78.6	1.0	103.0	3.9	5.0
P4SMAJ70-LF	P4SMAJ70C-LF	RN	ZN	70	77.8	95.1	1.0	125.0	3.2	5.0
P4SMAJ70A-LF	P4SMAJ70CA-LF	RP	ZP	70	77.8	86.0	1.0	113.0	3.5	5.0
P4SMAJ75-LF	P4SMAJ75C-LF	RQ	ZQ	75	83.3	102.0	1.0	134.0	3.0	5.0
P4SMAJ75A-LF	P4SMAJ75CA-LF	RR	ZR	75	83.3	92.1	1.0	121.0	3.3	5.0
P4SMAJ78-LF	P4SMAJ78C-LF	RS	ZS	78	86.7	106.0	1.0	139.0	2.9	5.0
P4SMAJ78A-LF	P4SMAJ78CA-LF	RT	ZT	78	86.7	95.8	1.0	126.0	3.2	5.0
P4SMAJ85-LF	P4SMAJ85C-LF	RU	ZU	85	94.4	115.0	1.0	151.0	2.6	5.0
P4SMAJ85A-LF	P4SMAJ85CA-LF	RV	ZV	85	94.4	104.0	1.0	137.0	2.9	5.0
P4SMAJ90-LF	P4SMAJ90C-LF	RW	ZW	90	100	122.0	1.0	160.0	2.5	5.0
P4SMAJ90A-LF	P4SMAJ90CA-LF	RX	ZX	90	100	111.0	1.0	146.0	2.7	5.0
P4SMAJ100-LF	P4SMAJ100C-LF	RY	ZY	100	111	136.0	1.0	179.0	2.2	5.0
P4SMAJ100A-LF	P4SMAJ100CA-LF	RZ	ZZ	100	111	123.0	1.0	162.0	2.5	5.0
P4SMAJ110-LF	P4SMAJ110C-LF	SD	VD	110	122	149.0	1.0	196.0	2.0	5.0
P4SMAJ110A-LF	P4SMAJ110CA-LF	SE	VE	110	122	135.0	1.0	177.0	2.3	5.0
P4SMAJ120-LF	P4SMAJ120C-LF	SF	VF	120	133	163.0	1.0	214.0	1.9	5.0
P4SMAJ120A-LF	P4SMAJ120CA-LF	SG	VG	120	133	147.0	1.0	193.0	2.1	5.0
P4SMAJ130-LF	P4SMAJ130C-LF	SH	VH	130	144	176.0	1.0	231.0	1.7	5.0
P4SMAJ130A-LF	P4SMAJ130CA-LF	SK	VK	130	144	159.0	1.0	209.0	1.9	5.0
P4SMAJ150-LF	P4SMAJ150C-LF	SL	VL	150	167	204.0	1.0	268.0	1.5	5.0
P4SMAJ150A-LF	P4SMAJ150CA-LF	SM	VM	150	167	185.0	1.0	243.0	1.6	5.0
P4SMAJ160-LF	P4SMAJ160C-LF	SN	VN	160	178	218.0	1.0	287.0	1.4	5.0
P4SMAJ160A-LF	P4SMAJ160CA-LF	SP	VP	160	178	197.0	1.0	259.0	1.5	5.0
P4SMAJ170-LF	P4SMAJ170C-LF	SQ	VQ	170	189	231.0	1.0	304.0	1.3	5.0
P4SMAJ170A-LF	P4SMAJ170CA-LF	SR	VR	170	189	209.0	1.0	275.0	1.4	5.0
P4SMAJ188-LF	P4SMAJ188C-LF	ST	VT	188	209	255.0	1.0	344.0	1.1	5.0
P4SMAJ188A-LF	P4SMAJ188CA-LF	SS	VS	188	209	231.0	1.0	328.0	1.2	5.0

NOTE : 1. $V_F=3.5V$ at $I_F=25A$ on $\frac{1}{2}$ Square or Equivalent Sine Wave. $PW = 8.3ms$, Duty Cycle = 4 Pulses per Minute Maximum
2. For Bipolar types with V_R 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 P4SMAJ5.0-LF THRU P4SMAJ188A-LF

FIG. 1 - PEAK PULSE POWER RATING CURVE

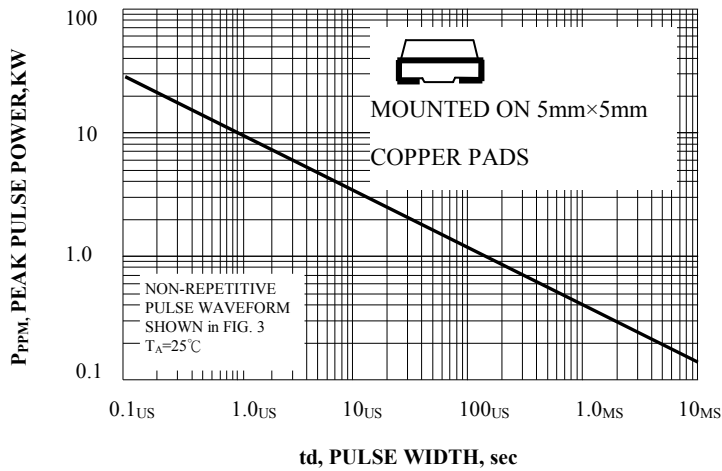


FIG. 2 - PULSE DERATING CURVE

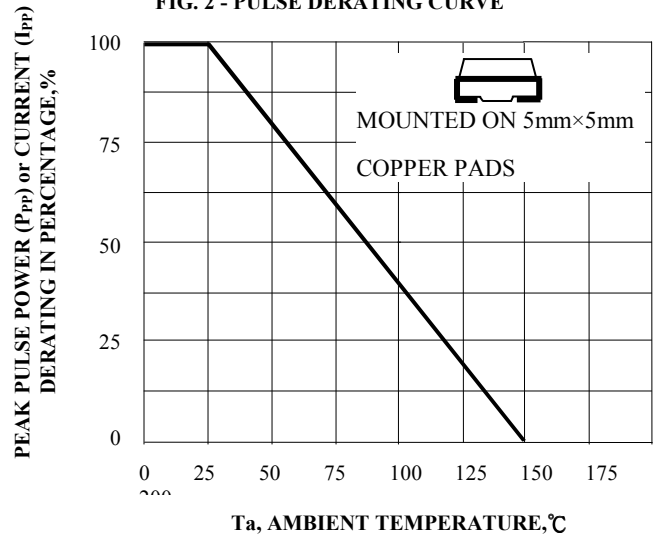


FIG. 3 - PULSE WAVEFORM

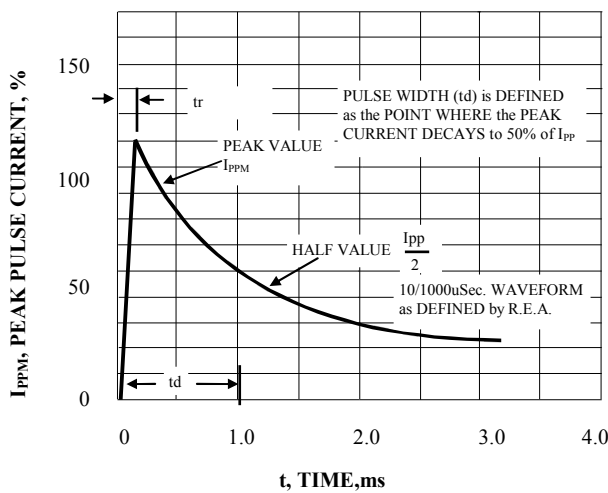


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

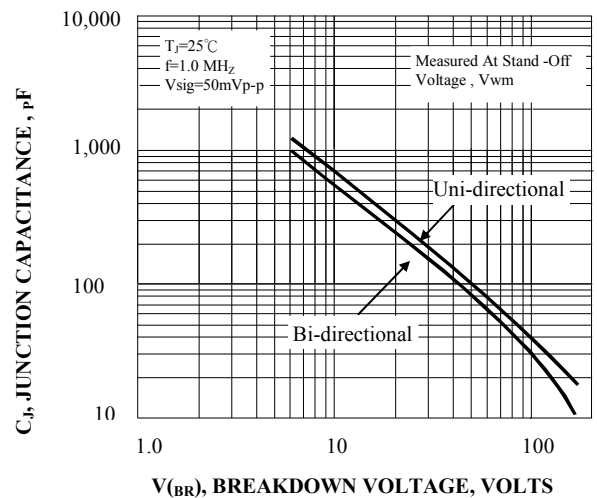


FIG. 5 - STEADY STATE POWER DERATING CURVE

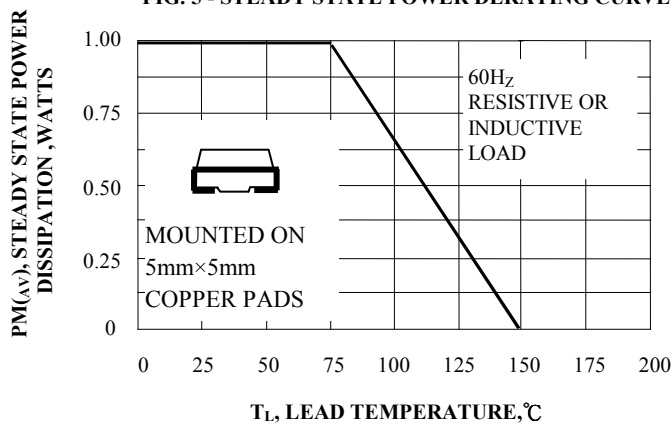


FIG. 6 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT UNIDIRECTIONAL ONLY

