SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Formosa MS

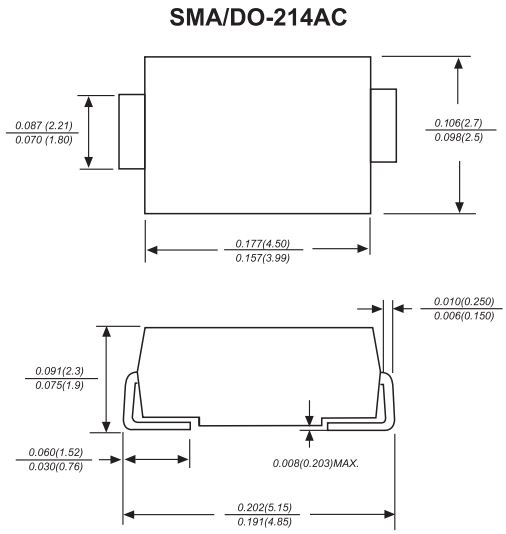
P4SMAJ SERIES

VOLTAGE - 5.0 to 220 Volts 400 Watt Peak Power Pulse

FEATURES

- For surface mounted applications in order to optimize board space.
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Excellent clamping capability
- Low inductance
- Fast response time: typically less than 1.0 ps from 0 volts to BV min
- Typical IR less than 1μA above 10V
- High temperature soldering : 250°C/10 seconds at terminals.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-O

SMA/DO-214AC



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: JEDEC DO-214AC low profile molded plastic
Terminals: Solder leads, solderable per MIL-STD-750, Method 2026
Polarity: Indicated by cathode band except Bi-directional types.
Standard Packageing: 12mm tape per(EIA-481)
Weight: 0.002 ounces, 0.064 gram

MAXIMUM RATINGS AND CHARACTERISTICS

Rating at 25°Cambient temperature unless otherwise specified. Resistive or inductive load, 60Hz.
For Capacitive load derate current by 20%.

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at T_A=25°C, T_P=1ms(Note 1,2,5)Fig.1	P_{PPM}	Minimum 400	Watts
Peak Forward Surge Current, per Figure 5(Note 3)	I_{FSM}	40.0	Amps
Peak Pulse Current Current on 10/1000μs waveform(Note 1,2,5)Fig.2	I_{PPM}	See Table 1	Amps
Steady State Power Dissipation(Note 4)	$P_{M(AV)}$	1.0	Watts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150	°C

NOTES:
1.Non-repetitive current pulse, per Fig. 3 and derated above T_A=25°Cper Fig. 2.
2.Mounted on 5.0mm^2 Copper pads to each terminal.
3.8.3ms single half sine-wave, duty cycle= 4 pulses per minutes maximum.
4.lead temperature at 75°C=T_L.
5.Peak pluse power waveformis 10/1000μS.

P4SMAJ SERIES

Part Number		FMS Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package
				V_{RWM}	V_{BR} @ I_T		I_T	I_R @ V_{RWM}		V_C @ I_{PP}	I_{PP}	
					Min.	Max.		UNI	BI			
UNI	BI	UNI	BI	V	V	V	mA	μA	μA	V	A	
400W Transient Voltage Suppressor												
P4SMAJ5.0	P4SMAJ5.0C	HD	TD	5.0	6.40	7.55	10	800	1600	9.6	41.6	SMA/DO-214AC
P4SMAJ5.0A	P4SMAJ5.0CA	HE	TE	5.0	6.40	7.25	10	800	1600	9.2	43.5	SMA/DO-214AC
P4SMAJ6.0	P4SMAJ6.0C	HF	TF	6.0	6.67	8.45	10	800	1600	11.4	35.1	SMA/DO-214AC
P4SMAJ6.0A	P4SMAJ6.0CA	HG	TG	6.0	6.67	7.67	10	800	1600	10.3	38.8	SMA/DO-214AC
P4SMAJ6.5	P4SMAJ6.5C	HH	TH	6.5	7.22	9.14	10	500	1000	12.3	32.5	SMA/DO-214AC
P4SMAJ6.5A	P4SMAJ6.5CA	HK	TK	6.5	7.22	8.30	10	500	1000	11.2	35.7	SMA/DO-214AC
P4SMAJ7.0	P4SMAJ7.0C	HL	TL	7.0	7.78	9.86	10	200	400	13.3	30.1	SMA/DO-214AC
P4SMAJ7.0A	P4SMAJ7.0CA	HM	TM	7.0	7.78	8.95	10	200	400	12.0	33.3	SMA/DO-214AC
P4SMAJ7.5	P4SMAJ7.5C	HN	TN	7.5	8.33	10.67	1.0	100	200	14.3	28.0	SMA/DO-214AC
P4SMAJ7.5A	P4SMAJ7.5CA	HP	TP	7.5	8.33	9.58	1.0	100	200	12.9	31.0	SMA/DO-214AC
P4SMAJ8.0	P4SMAJ8.0C	HQ	TQ	8.0	8.89	11.30	1.0	50	100	15.0	26.5	SMA/DO-214AC
P4SMAJ8.0A	P4SMAJ8.0CA	HR	TR	8.0	8.89	10.23	1.0	50	100	13.6	29.4	SMA/DO-214AC
P4SMAJ8.5	P4SMAJ8.5C	HS	TS	8.5	9.44	11.92	1.0	10	20	15.9	25.1	SMA/DO-214AC
P4SMAJ8.5A	P4SMAJ8.5CA	HT	TT	8.5	9.44	10.82	1.0	10	20	14.4	27.7	SMA/DO-214AC
P4SMAJ9.0	P4SMAJ9.0C	HU	TU	9.0	10.0	12.6	1.0	5	10	16.9	23.6	SMA/DO-214AC
P4SMAJ9.0A	P4SMAJ9.0CA	HV	TV	9.0	10.0	11.5	1.0	5	10	15.4	26.0	SMA/DO-214AC
P4SMAJ10	P4SMAJ10C	HW	TW	10	11.1	14.1	1.0	5	5	18.8	21.2	SMA/DO-214AC
P4SMAJ10A	P4SMAJ10CA	HX	TX	10	11.1	12.8	1.0	5	5	17.0	23.5	SMA/DO-214AC
P4SMAJ11	P4SMAJ11C	HY	TY	11	12.2	15.4	1.0	5	5	20.1	20.0	SMA/DO-214AC
P4SMAJ11A	P4SMAJ11CA	HZ	TZ	11	12.2	14.0	1.0	5	5	18.2	22.0	SMA/DO-214AC
P4SMAJ12	P4SMAJ12C	ID	UD	12	13.3	16.9	1.0	5	5	22.0	18.1	SMA/DO-214AC
P4SMAJ12A	P4SMAJ12CA	IE	UE	12	13.3	15.3	1.0	5	5	19.9	20.1	SMA/DO-214AC
P4SMAJ13	P4SMAJ13C	IF	UF	13	14.4	18.2	1.0	5	5	23.8	16.8	SMA/DO-214AC
P4SMAJ13A	P4SMAJ13CA	IG	UG	13	14.4	16.5	1.0	5	5	21.5	18.6	SMA/DO-214AC
P4SMAJ14	P4SMAJ14C	IH	UH	14	15.6	19.8	1.0	5	5	25.8	15.5	SMA/DO-214AC
P4SMAJ14A	P4SMAJ14CA	IK	UK	14	15.6	17.9	1.0	5	5	23.2	17.2	SMA/DO-214AC
P4SMAJ15	P4SMAJ15C	IL	UL	15	16.7	21.1	1.0	5	5	26.9	14.8	SMA/DO-214AC
P4SMAJ15A	P4SMAJ15CA	IM	UM	15	16.7	19.2	1.0	5	5	24.4	16.4	SMA/DO-214AC
P4SMAJ16	P4SMAJ16C	IN	UN	16	17.8	22.6	1.0	5	5	28.8	13.8	SMA/DO-214AC
P4SMAJ16A	P4SMAJ16CA	IP	UP	16	17.8	20.5	1.0	5	5	26.0	15.3	SMA/DO-214AC
P4SMAJ17	P4SMAJ17C	IQ	UQ	17	18.9	23.9	1.0	5	5	30.5	13.1	SMA/DO-214AC
P4SMAJ17A	P4SMAJ17CA	IR	UR	17	18.9	21.7	1.0	5	5	27.6	14.5	SMA/DO-214AC
P4SMAJ18	P4SMAJ18C	IS	US	18	20.0	25.3	1.0	5	5	32.2	12.4	SMA/DO-214AC
P4SMAJ18A	P4SMAJ18CA	IT	UT	18	20.0	23.3	1.0	5	5	29.2	13.7	SMA/DO-214AC
P4SMAJ20	P4SMAJ20C	IU	UU	20	22.2	28.1	1.0	5	5	35.8	11.1	SMA/DO-214AC
P4SMAJ20A	P4SMAJ20CA	IV	UV	20	22.2	25.5	1.0	5	5	32.4	12.3	SMA/DO-214AC
P4SMAJ22	P4SMAJ22C	IW	UW	22	24.4	30.9	1.0	5	5	39.4	10.1	SMA/DO-214AC
P4SMAJ22A	P4SMAJ22CA	IX	UX	22	24.4	28.0	1.0	5	5	35.5	11.2	SMA/DO-214AC
P4SMAJ24	P4SMAJ24C	IY	UY	24	26.7	33.8	1.0	5	5	43.0	9.3	SMA/DO-214AC
P4SMAJ24A	P4SMAJ24CA	IZ	UZ	24	26.7	30.7	1.0	5	5	38.9	10.3	SMA/DO-214AC
P4SMAJ26	P4SMAJ26C	JD	VD	26	28.9	36.6	1.0	5	5	46.6	8.6	SMA/DO-214AC
P4SMAJ26A	P4SMAJ26CA	JE	VE	26	28.9	33.2	1.0	5	5	42.1	9.5	SMA/DO-214AC
P4SMAJ28	P4SMAJ28C	JF	VF	28	31.1	39.4	1.0	5	5	50.0	8.0	SMA/DO-214AC
P4SMAJ28A	P4SMAJ28CA	JG	VG	28	31.1	35.8	1.0	5	5	45.4	8.8	SMA/DO-214AC
P4SMAJ30	P4SMAJ30C	JH	VH	30	33.3	42.2	1.0	5	5	53.5	7.5	SMA/DO-214AC
P4SMAJ30A	P4SMAJ30CA	JK	VK	30	33.3	38.3	1.0	5	5	48.4	8.3	SMA/DO-214AC
P4SMAJ33	P4SMAJ33C	JL	VL	33	36.7	46.5	1.0	5	5	59.0	6.8	SMA/DO-214AC
P4SMAJ33A	P4SMAJ33CA	JM	VM	33	36.7	42.2	1.0	5	5	53.3	7.5	SMA/DO-214AC
P4SMAJ36	P4SMAJ36C	JN	VN	36	40.0	50.7	1.0	5	5	64.3	6.2	SMA/DO-214AC
P4SMAJ36A	P4SMAJ36CA	JP	VP	36	40.0	46.0	1.0	5	5	58.1	6.9	SMA/DO-214AC
P4SMAJ40	P4SMAJ40C	JQ	VQ	40	44.4	56.3	1.0	5	5	71.4	5.6	SMA/DO-214AC
P4SMAJ40A	P4SMAJ40CA	JR	VR	40	44.4	51.1	1.0	5	5	64.5	6.2	SMA/DO-214AC

P4SMAJ SERIES

Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage	Peak Pulse Current	Package
				V_{RWM}	V_{BR} @ I_T		I_T	I_R @ V_{RWM}		V_C @ I_{PP}	I_{PP}	
					Min.	Max.		UNI	BI			
UNI	BI	UNI	BI	V	V	V	mA	μA	μA	V	A	
400W Transient Voltage Suppressor --contiuned												
P4SMAJ43	P4SMAJ43C	JS	VS	43	47.8	60.5	1.0	5	5	76.7	5.2	SMA/DO-214AC
P4SMAJ43A	P4SMAJ43CA	JT	VT	43	47.8	54.9	1.0	5	5	69.4	5.7	SMA/DO-214AC
P4SMAJ45	P4SMAJ45C	JU	VU	45	50.0	63.3	1.0	5	5	80.3	5.0	SMA/DO-214AC
P4SMAJ45A	P4SMAJ45CA	JV	VV	45	50.0	57.5	1.0	5	5	72.7	5.5	SMA/DO-214AC
P4SMAJ48	P4SMAJ48C	JW	VW	48	53.3	67.5	1.0	5	5	85.5	4.7	SMA/DO-214AC
P4SMAJ48A	P4SMAJ48CA	JX	VX	48	53.3	61.3	1.0	5	5	77.4	5.2	SMA/DO-214AC
P4SMAJ51	P4SMAJ51C	JY	VY	51	56.7	71.8	1.0	5	5	91.1	4.4	SMA/DO-214AC
P4SMAJ51A	P4SMAJ51CA	JZ	VZ	51	56.7	65.2	1.0	5	5	82.4	4.9	SMA/DO-214AC
P4SMAJ54	P4SMAJ54C	RD	WD	54	60.0	76.0	1.0	5	5	96.3	4.2	SMA/DO-214AC
P4SMAJ54A	P4SMAJ54CA	RE	WE	54	60.0	69.0	1.0	5	5	87.1	4.6	SMA/DO-214AC
P4SMAJ58	P4SMAJ58C	RF	WF	58	64.4	81.6	1.0	5	5	103	3.9	SMA/DO-214AC
P4SMAJ58A	P4SMAJ58CA	RG	WG	58	64.4	74.1	1.0	5	5	93.6	4.3	SMA/DO-214AC
P4SMAJ60	P4SMAJ60C	RH	WH	60	66.7	84.5	1.0	5	5	107	3.7	SMA/DO-214AC
P4SMAJ60A	P4SMAJ60CA	RK	WK	60	66.7	76.7	1.0	5	5	96.8	4.1	SMA/DO-214AC
P4SMAJ64	P4SMAJ64C	RL	WL	64	71.1	90.1	1.0	5	5	114	3.5	SMA/DO-214AC
P4SMAJ64A	P4SMAJ64CA	RM	WM	64	71.1	81.8	1.0	5	5	103	3.9	SMA/DO-214AC
P4SMAJ70	P4SMAJ70C	RN	WN	70	77.8	98.6	1.0	5	5	125	3.2	SMA/DO-214AC
P4SMAJ70A	P4SMAJ70CA	RP	WP	70	77.8	89.5	1.0	5	5	113	3.5	SMA/DO-214AC
P4SMAJ75	P4SMAJ75C	RQ	WQ	75	83.3	105.7	1.0	5	5	134	3.0	SMA/DO-214AC
P4SMAJ75A	P4SMAJ75CA	RR	WR	75	83.3	95.8	1.0	5	5	121	3.3	SMA/DO-214AC
P4SMAJ78	P4SMAJ78C	RS	WS	78	86.7	109.8	1.0	5	5	139	2.9	SMA/DO-214AC
P4SMAJ78A	P4SMAJ78CA	RT	WT	78	86.7	99.7	1.0	5	5	126	2.2	SMA/DO-214AC
P4SMAJ85	P4SMAJ85C	RU	WU	85	94.4	119.2	1.0	5	5	151	2.6	SMA/DO-214AC
P4SMAJ85A	P4SMAJ85CA	RV	WV	85	94.4	108.2	1.0	5	5	137	2.9	SMA/DO-214AC
P4SMAJ90	P4SMAJ90C	RW	WW	90	100	126.5	1.0	5	5	160	2.5	SMA/DO-214AC
P4SMAJ90A	P4SMAJ90CA	RX	WX	90	100	115.5	1.0	5	5	146	2.7	SMA/DO-214AC
P4SMAJ100	P4SMAJ100C	RY	WY	100	111	141.0	1.0	5	5	179	2.2	SMA/DO-214AC
P4SMAJ100A	P4SMAJ100CA	RZ	WZ	100	111	128.0	1.0	5	5	162	2.5	SMA/DO-214AC
P4SMAJ110	P4SMAJ110C	SD	XD	110	122	154.5	1.0	5	5	196	2.0	SMA/DO-214AC
P4SMAJ110A	P4SMAJ110CA	SE	XE	110	122	140.5	1.0	5	5	177	2.3	SMA/DO-214AC
P4SMAJ120	P4SMAJ120C	SF	XF	120	133	169.0	1.0	5	5	214	1.9	SMA/DO-214AC
P4SMAJ120A	P4SMAJ120CA	SG	XG	120	133	153.0	1.0	5	5	193	2.0	SMA/DO-214AC
P4SMAJ130	P4SMAJ130C	SH	XH	130	144	182.5	1.0	5	5	231	1.7	SMA/DO-214AC
P4SMAJ130A	P4SMAJ130CA	SK	XK	130	144	165.5	1.0	5	5	209	1.9	SMA/DO-214AC
P4SMAJ150	P4SMAJ150C	SL	XL	150	167	211.5	1.0	5	5	268	1.5	SMA/DO-214AC
P4SMAJ150A	P4SMAJ150CA	SM	XM	150	167	192.5	1.0	5	5	243	1.6	SMA/DO-214AC
P4SMAJ160	P4SMAJ160C	SN	XN	160	178	226.0	1.0	5	5	287	1.4	SMA/DO-214AC
P4SMAJ160A	P4SMAJ160CA	SP	XP	160	178	205.0	1.0	5	5	259	1.5	SMA/DO-214AC
P4SMAJ170	P4SMAJ170C	SQ	XQ	170	189	239.5	1.0	5	5	304	1.3	SMA/DO-214AC
P4SMAJ170A	P4SMAJ170CA	SR	XR	170	189	217.5	1.0	5	5	275	1.4	SMA/DO-214AC
P4SMAJ180	P4SMAJ180C	SS	XS	180	198	253.8	1.0	5	5	322	1.2	SMA/DO-214AC
P4SMAJ180A	P4SMAJ180CA	ST	XT	180	198	230.4	1.0	5	5	292	1.3	SMA/DO-214AC
P4SMAJ190	P4SMAJ190C	SU	XU	190	209	267.9	1.0	5	5	340	1.2	SMA/DO-214AC
P4SMAJ190A	P4SMAJ190CA	SV	XV	190	209	243.2	1.0	5	5	308	1.3	SMA/DO-214AC
P4SMAJ200	P4SMAJ200C	SW	XW	200	220	282.0	1.0	5	5	358	1.1	SMA/DO-214AC
P4SMAJ200A	P4SMAJ200CA	SX	XX	200	220	256.0	1.0	5	5	324	1.2	SMA/DO-214AC
P4SMAJ210	P4SMAJ210C	SY	XY	210	231	296.1	1.0	5	5	376	1.1	SMA/DO-214AC
P4SMAJ210A	P4SMAJ210CA	SZ	XZ	210	231	268.8	1.0	5	5	340	1.2	SMA/DO-214AC
P4SMAJ220	P4SMAJ220C	GD	ZD	220	242	310.2	1.0	5	5	394	1.0	SMA/DO-214AC
P4SMAJ220A	P4SMAJ220CA	GE	ZE	220	242	281.6	1.0	5	5	356	1.1	SMA/DO-214AC

P4SMAJ SERIES

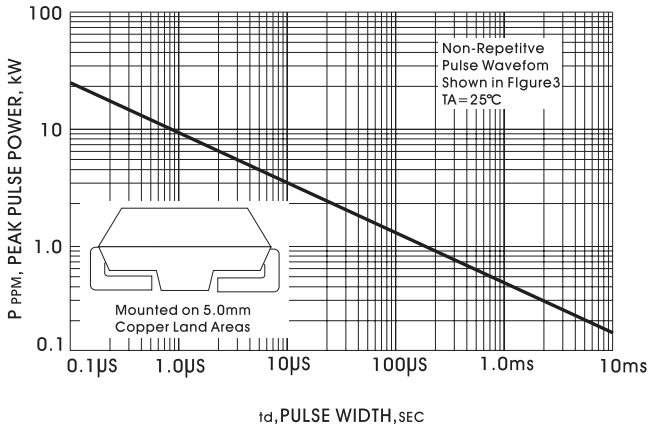


FIGURE 1-PEAK PULSE POWER RATING CURVE

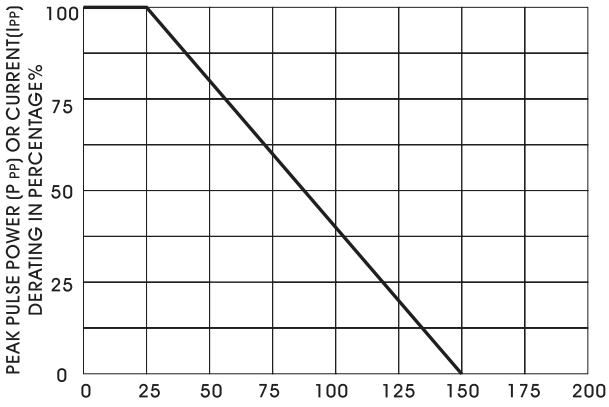


FIGURE2 DERATING CURVE

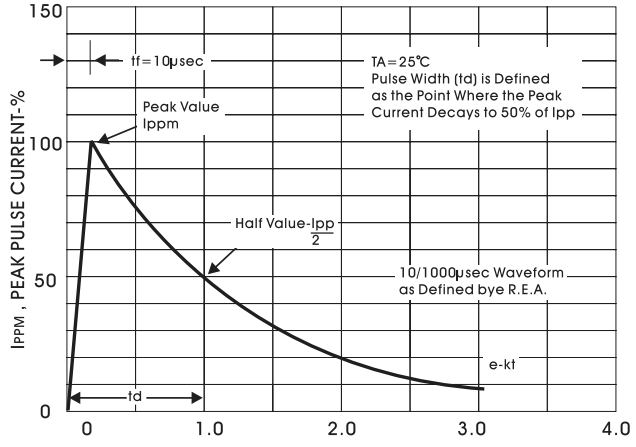


FIGURE 3-PULSE WAVEFORM

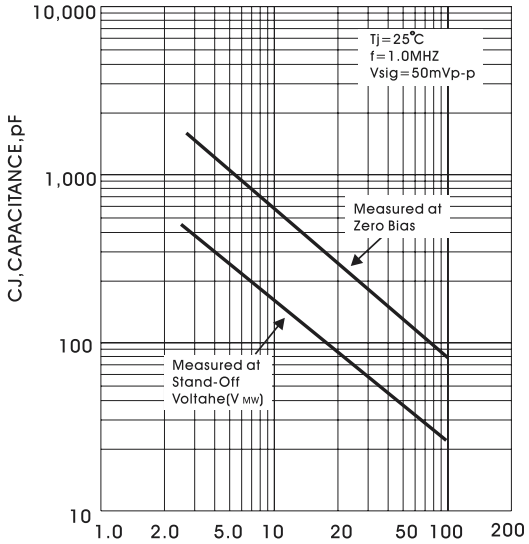


FIGURE 4-TYPICAL CAPACITANCE

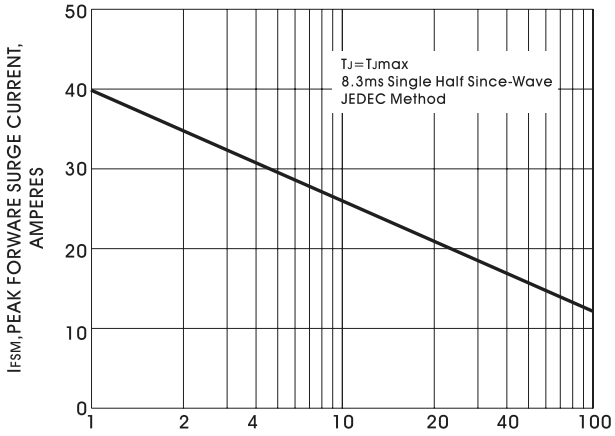


FIG.5-MAXIMUM NON-REPETITIVE PEAK FOWARD SURGE CURRENT