Data Sheet

Customer:

Product: Transient Voltage Suppressors 400W – P4SMA Series

Package : DO-214AC(SMA)

Issued Date: 10-Feb.-2015

Edition: Ver. 1

Record of change

Date	Ver.	Description	Page
10-Feb.-2015	1		

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HITANO
ENTERPRISE CORP. ®

P4SMAJ5.0 THRU P4SMAJ440A

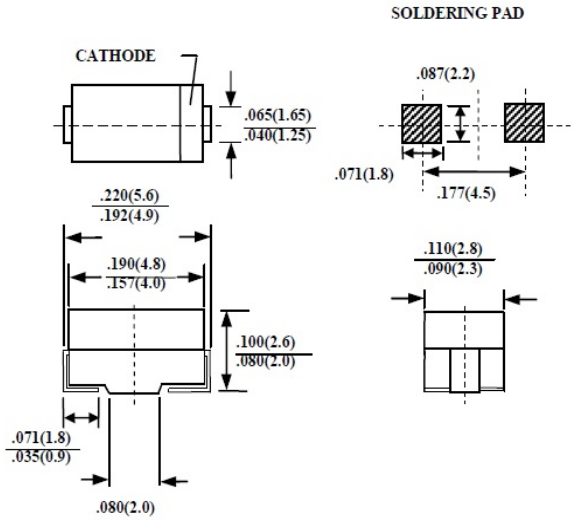
400W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

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.
- ROHS & REACH COMPLIANT

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
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 T_A=25℃ PER FIG 2.
2. MOUNTED ON 5.0mm^2 COPPER PADS TO EACH TERMINAL
3. LEAD TEMPERTURE AT T_L = 75℃ 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

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
P4SMAJ5.0	P4SMAJ5.0C	AD	WD	6.40	7.30	10	800	5.0	41.67	9.6
P4SMAJ5.0A	P4SMAJ5.0CA	AE	WE	6.40	7.00	10	800	5.0	43.48	9.2
P4SMAJ6.0	P4SMAJ6.0C	AF	WF	6.67	8.15	10	800	6.0	35.09	11.4
P4SMAJ6.0A	P4SMAJ6.0CA	AG	WG	6.67	7.37	10	800	6.0	38.83	10.3
P4SMAJ6.5	P4SMAJ6.5C	AH	WH	7.22	8.82	10	500	6.5	32.52	12.3
P4SMAJ6.5A	P4SMAJ6.5CA	AK	WK	7.22	7.98	10	500	6.5	35.71	11.2
P4SMAJ7.0	P4SMAJ7.0C	AL	WL	7.78	9.51	10	200	7.0	30.08	13.3
P4SMAJ7.0A	P4SMAJ7.0CA	AM	WM	7.78	8.60	10	200	7.0	33.33	12.0
P4SMAJ7.5	P4SMAJ7.5C	AN	WN	8.33	10.20	1	100	7.5	27.97	14.3
P4SMAJ7.5A	P4SMAJ7.5CA	AP	WP	8.33	9.21	1	100	7.5	31.01	12.9
P4SMAJ8.0	P4SMAJ8.0C	AQ	WQ	8.89	10.90	1	50	8.0	26.67	15.0
P4SMAJ8.0A	P4SMAJ8.0CA	AR	WR	8.89	9.83	1	50	8.0	29.41	13.6
P4SMAJ8.5	P4SMAJ8.5C	AS	WS	9.44	11.50	1	10	8.5	25.16	15.9
P4SMAJ8.5A	P4SMAJ8.5CA	AT	WT	9.44	10.40	1	10	8.5	27.78	14.4
P4SMAJ9.0	P4SMAJ9.0C	AU	WU	10.00	12.20	1	5	9.0	23.67	16.9
P4SMAJ9.0A	P4SMAJ9.0CA	AV	WV	10.00	11.10	1	5	9.0	25.97	15.4
P4SMAJ10	P4SMAJ10C	AW	WW	11.10	13.60	1	5	10.0	21.28	18.8
P4SMAJ10A	P4SMAJ10CA	AX	WX	11.10	12.30	1	5	10.0	23.53	17.0
P4SMAJ11	P4SMAJ11C	AY	WY	12.20	14.90	1	5	11.0	19.90	20.1
P4SMAJ11A	P4SMAJ11CA	AZ	WZ	12.20	13.50	1	5	11.0	21.98	18.2
P4SMAJ12	P4SMAJ12C	BD	XD	13.30	16.30	1	5	12.0	18.18	22.0
P4SMAJ12A	P4SMAJ12CA	BE	XE	13.30	14.70	1	5	12.0	20.10	19.9
P4SMAJ13	P4SMAJ13C	BF	XF	14.40	17.60	1	5	13.0	16.81	23.8
P4SMAJ13A	P4SMAJ13CA	BG	XG	14.40	15.90	1	5	13.0	18.60	21.5
P4SMAJ14	P4SMAJ14C	BH	XH	15.60	19.10	1	5	14.0	15.50	25.8
P4SMAJ14A	P4SMAJ14CA	BK	XK	15.60	17.20	1	5	14.0	17.24	23.2
P4SMAJ15	P4SMAJ15C	BL	XL	16.70	20.40	1	5	15.0	14.87	26.9
P4SMAJ15A	P4SMAJ15CA	BM	XM	16.70	18.50	1	5	15.0	16.39	24.4
P4SMAJ16	P4SMAJ16C	BN	XN	17.80	21.80	1	5	16.0	13.89	28.8
P4SMAJ16A	P4SMAJ16CA	BP	XP	17.80	19.70	1	5	16.0	15.38	26.0
P4SMAJ17	P4SMAJ17C	BQ	XQ	18.90	23.10	1	5	17.0	13.11	30.5
P4SMAJ17A	P4SMAJ17CA	BR	XR	18.90	20.90	1	5	17.0	14.49	27.6
P4SMAJ18	P4SMAJ18C	BS	XS	20.00	24.40	1	5	18.0	12.42	32.2
P4SMAJ18A	P4SMAJ18CA	BT	XT	20.00	22.10	1	5	18.0	13.70	29.2
P4SMAJ19	P4SMAJ19C	BA	XA	21.13	25.76	1	5	19.0	11.76	34.0
P4SMAJ19A	P4SMAJ19CA	BB	XB	21.10	23.30	1	5	19.0	13.00	30.8
P4SMAJ20	P4SMAJ20C	BU	XU	22.20	27.10	1	5	20.0	11.17	35.8
P4SMAJ20A	P4SMAJ20CA	BV	XV	22.20	24.50	1	5	20.0	12.35	32.4
P4SMAJ22	P4SMAJ22C	BW	XW	24.40	29.80	1	5	22.0	10.15	39.4
P4SMAJ22A	P4SMAJ22CA	BX	XX	24.40	26.90	1	5	22.0	11.27	35.5
P4SMAJ24	P4SMAJ24C	BY	XY	26.70	32.60	1	5	24.0	9.30	43.0
P4SMAJ24A	P4SMAJ24CA	BZ	XZ	26.70	29.50	1	5	24.0	10.28	38.9
P4SMAJ26	P4SMAJ26C	CD	YD	28.90	35.30	1	5	26.0	8.58	46.6
P4SMAJ26A	P4SMAJ26CA	CE	YE	28.90	31.90	1	5	26.0	9.50	42.1
P4SMAJ28	P4SMAJ28C	CF	YF	31.10	38.00	1	5	28.0	8.00	50.0
P4SMAJ28A	P4SMAJ28CA	CG	YG	31.10	34.40	1	5	28.0	8.81	45.4
P4SMAJ30	P4SMAJ30C	CH	YH	33.30	40.70	1	5	30.0	7.48	53.5
P4SMAJ30A	P4SMAJ30CA	CK	YK	33.30	36.80	1	5	30.0	8.26	48.4
P4SMAJ33	P4SMAJ33C	CL	YL	36.70	44.90	1	5	33.0	6.78	59.0
P4SMAJ33A	P4SMAJ33CA	CM	YM	36.70	40.60	1	5	33.0	7.50	53.3
P4SMAJ36	P4SMAJ36C	CN	YN	40.00	48.90	1	5	36.0	6.22	64.3
P4SMAJ36A	P4SMAJ36CA	CP	YP	40.00	44.20	1	5	36.0	6.88	58.1
P4SMAJ40	P4SMAJ40C	CQ	YQ	44.40	54.30	1	5	40.0	5.60	71.4
P4SMAJ40A	P4SMAJ40CA	CR	YR	44.40	49.10	1	5	40.0	6.20	64.5

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V_{BR} @I_T			Maximum Reverse Leakage I_R @V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
P4SMAJ43	P4SMAJ43C	CS	YS	47.80	58.40	1	5	43.0	5.22	76.7
P4SMAJ43A	P4SMAJ43CA	CT	YT	47.80	52.80	1	5	43.0	5.76	69.4
P4SMAJ45	P4SMAJ45C	CU	YU	50.00	61.10	1	5	45.0	4.98	80.3
P4SMAJ45A	P4SMAJ45CA	CV	YV	50.00	55.30	1	5	45.0	5.50	72.7
P4SMAJ48	P4SMAJ48C	CW	YW	53.30	65.10	1	5	48.0	4.68	85.5
P4SMAJ48A	P4SMAJ48CA	CX	YX	53.30	58.90	1	5	48.0	5.17	77.4
P4SMAJ51	P4SMAJ51C	CY	YY	56.70	69.30	1	5	51.0	4.39	91.1
P4SMAJ51A	P4SMAJ51CA	CZ	YZ	56.70	62.70	1	5	51.0	4.85	82.4
P4SMAJ54	P4SMAJ54C	RD	ZD	60.00	73.30	1	5	54.0	4.15	96.3
P4SMAJ54A	P4SMAJ54CA	RE	ZE	60.00	66.30	1	5	54.0	4.59	87.1
P4SMAJ58	P4SMAJ58C	RF	ZF	64.40	78.70	1	5	58.0	3.88	103.0
P4SMAJ58A	P4SMAJ58CA	RG	ZG	64.40	71.20	1	5	58.0	4.27	93.6
P4SMAJ60	P4SMAJ60C	RH	ZH	66.70	81.50	1	5	60.0	3.74	107.0
P4SMAJ60A	P4SMAJ60CA	RK	ZK	66.70	73.70	1	5	60.0	4.13	96.8
P4SMAJ64	P4SMAJ64C	RL	ZL	71.10	86.90	1	5	64.0	3.51	114.0
P4SMAJ64A	P4SMAJ64CA	RM	ZM	71.10	78.60	1	5	64.0	3.88	103.0
P4SMAJ70	P4SMAJ70C	RN	ZN	77.80	95.10	1	5	70.0	3.20	125.0
P4SMAJ70A	P4SMAJ70CA	RP	ZP	77.80	86.00	1	5	70.0	3.54	113.0
P4SMAJ75	P4SMAJ75C	RQ	ZQ	83.30	102.00	1	5	75.0	2.99	134.0
P4SMAJ75A	P4SMAJ75CA	RR	ZR	83.30	92.10	1	5	75.0	3.31	121.0
P4SMAJ78	P4SMAJ78C	RS	ZS	86.70	106.00	1	5	78.0	2.88	139.0
P4SMAJ78A	P4SMAJ78CA	RT	ZT	86.70	95.80	1	5	78.0	3.17	126.0
P4SMAJ80	P4SMAJ80C	RA	ZA	88.96	108.80	1	5	80.0	2.79	143.2
P4SMAJ80A	P4SMAJ80CA	RB	ZB	88.80	97.60	1	5	80.0	3.09	129.6
P4SMAJ85	P4SMAJ85C	RU	ZU	94.40	115.00	1	5	85.0	2.65	151.0
P4SMAJ85A	P4SMAJ85CA	RV	ZV	94.40	104.00	1	5	85.0	2.92	137.0
P4SMAJ90	P4SMAJ90C	RW	ZW	100.00	122.00	1	5	90.0	2.50	160.0
P4SMAJ90A	P4SMAJ90CA	RX	ZX	100.00	111.00	1	5	90.0	2.74	146.0
P4SMAJ100	P4SMAJ100C	RY	ZY	111.00	136.00	1	5	100.0	2.23	179.0
P4SMAJ100A	P4SMAJ100CA	RZ	ZZ	111.00	123.00	1	5	100.0	2.47	162.0
P4SMAJ110	P4SMAJ110C	SD	VD	122.00	149.00	1	5	110.0	2.04	196.0
P4SMAJ110A	P4SMAJ110CA	SE	VE	122.00	135.00	1	5	110.0	2.26	177.0
P4SMAJ120	P4SMAJ120C	SF	VF	133.00	163.00	1	5	120.0	1.87	214.0
P4SMAJ120A	P4SMAJ120CA	SG	VG	133.00	147.00	1	5	120.0	2.07	193.0
P4SMAJ130	P4SMAJ130C	SH	VH	144.00	176.00	1	5	130.0	1.73	231.0
P4SMAJ130A	P4SMAJ130CA	SK	VK	144.00	159.00	1	5	130.0	1.91	209.0
P4SMAJ140	P4SMAJ140C	SA	VA	155.68	190.40	1	5	140.0	1.60	250.6
P4SMAJ140A	P4SMAJ140CA	SB	VB	155.00	171.00	1	5	140.0	1.76	226.8
P4SMAJ150	P4SMAJ150C	SL	VL	167.00	204.00	1	5	150.0	1.49	268.0
P4SMAJ150A	P4SMAJ150CA	SM	VM	167.00	185.00	1	5	150.0	1.65	243.0
P4SMAJ160	P4SMAJ160C	SN	VN	178.00	218.00	1	5	160.0	1.39	287.0
P4SMAJ160A	P4SMAJ160CA	SP	VP	178.00	197.00	1	5	160.0	1.54	259.0
P4SMAJ170	P4SMAJ170C	SQ	VQ	189.00	231.00	1	5	170.0	1.32	304.0
P4SMAJ170A	P4SMAJ170CA	SR	VR	189.00	209.00	1	5	170.0	1.45	275.0
P4SMAJ180	P4SMAJ180C	SS	VS	200.16	244.80	1	5	180.0	1.24	322.2
P4SMAJ180A	P4SMAJ180CA	ST	VT	200.00	220.00	1	5	180.0	1.37	291.6
P4SMAJ190	P4SMAJ190C	SU	VU	211.28	258.40	1	5	190.0	1.18	340.1
P4SMAJ190A	P4SMAJ190CA	SV	VV	211.00	232.00	1	5	190.0	1.30	307.8
P4SMAJ200A	P4SMAJ200CA	SW	VW	224.00	247.00	1	5	200.0	1.23	324.0
P4SMAJ220A	P4SMAJ220CA	SX	VX	246.00	272.00	1	5	220.0	1.12	356.0
P4SMAJ250A	P4SMAJ250CA	SZ	VZ	279.00	309.00	1	5	250.0	0.99	405.0
P4SMAJ300A	P4SMAJ300CA	DE	HE	335.00	371.00	1	5	300.0	0.82	486.0
P4SMAJ350A	P4SMAJ350CA	DG	HG	391.00	432.00	1	5	350.0	0.71	567.0
P4SMAJ400A	P4SMAJ400CA	DK	HK	447.00	494.00	1	5	400.0	0.62	648.0
P4SMAJ440A	P4SMAJ440CA	DM	HM	492.00	543.00	1	5	440.0	0.56	713.0

NOTE： 1. For Bipolar types with VR of 10 volts and under , the IR limit is doubled

2. For Bidirectional use C suffix for 10% tolerance , CA suffix for 5% tolerance

RATING AND CHARACTERISITIC CURVES P4SMAJ5.0 THRU P4SMAJ440A

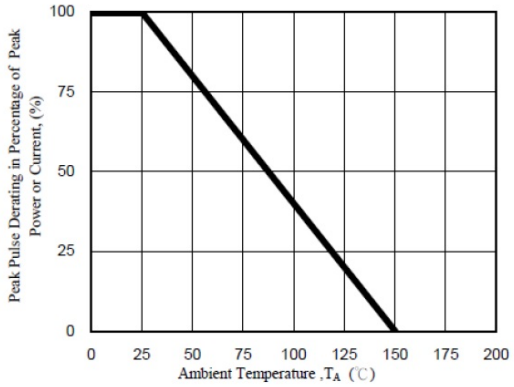


Fig. 1 – Pulse Derating Curve

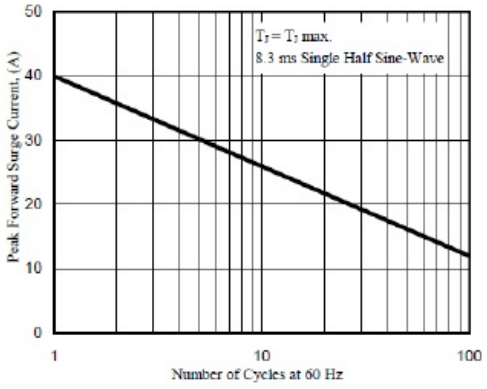


Fig. 2 – Maximum Non-Repetitive Surge Current

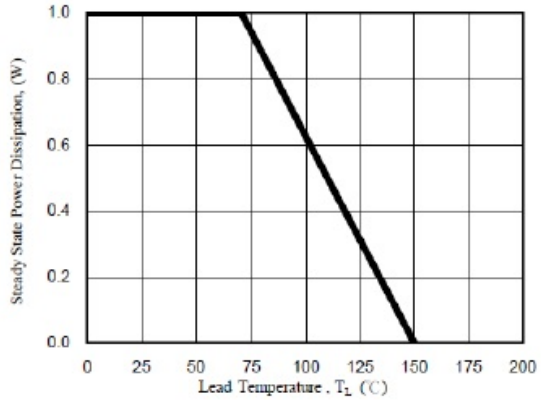


Fig. 3 – Steady State Power Derating Curve

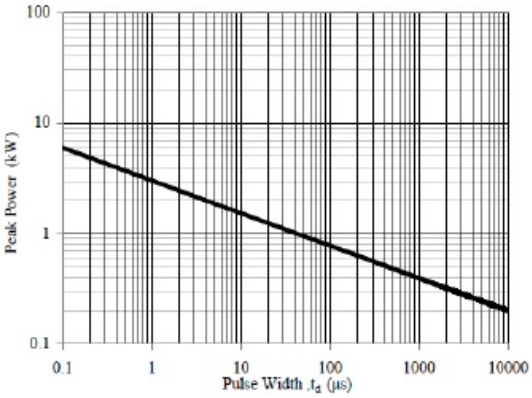


Fig. 4 – Peak Pulse Power Rating Curve

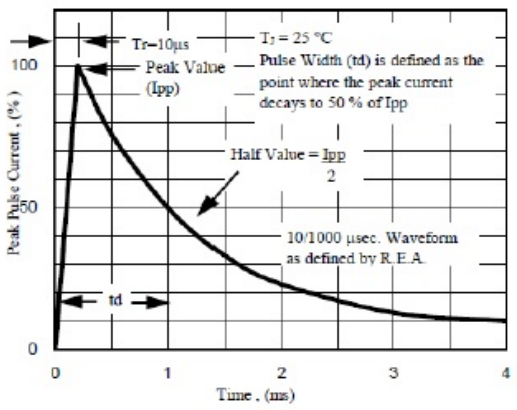


Fig. 5 – Pulse Waveform

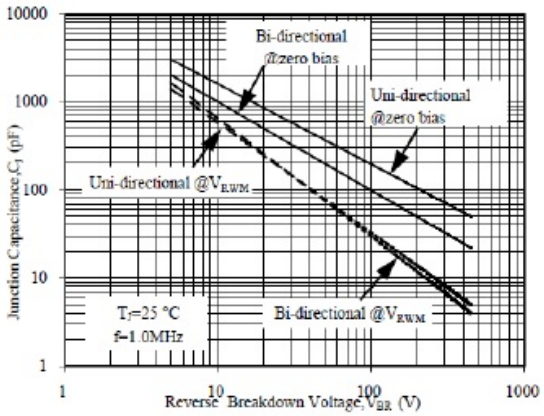


Fig. 6 – Typical Junction Capacitance