



TRANSIENT VOLTAGE SUPPRESSOR

P4SMA6.8 THRU P4SMA200

**VOLTAGE RANGE
POWER**

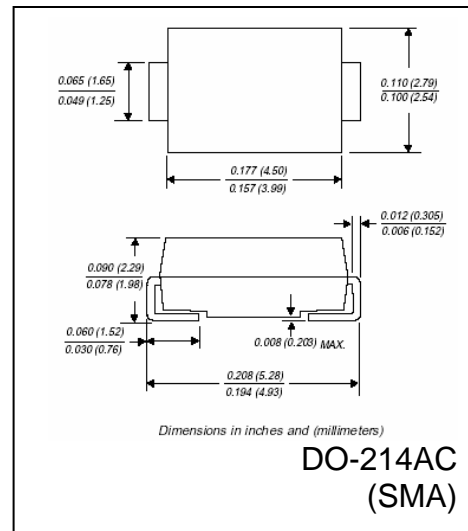
**6.8 to 200 Volts
400 Watts**

FEATURES

- Glass passivated chip junction
- 400W surge capacity @ 10/1000 μ Sec wave form
- Fast response, typically less than 1 pSec
- Low Zener impedance
- Excellent clamping capability
- High temperature soldering guaranteed:
250°C/ seconds at terminals

MECHANICAL DATA

- Case: transfer molded plastic
- Epoxy: UL94V – 0 rate flame retardant
- Polarity: Color band denotes cathode end, except on bipolar parts which have no band
- Terminals: solderable per MIL-STD-202E method 208C
- Weight: 0.002 ounce, 0.064 gram



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

	SYMBOLS		UNIT
Peak Power Dissipation 10/1000 μ S waveform (Note 1,2)	P _{PPM}	400	Watts
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method) (Note 2)	I _{FSM}	40	Amps
Operating Junction Temperature Range	T _J	(-55 to +150)	°C
Storage Temperature Range	T _{STG}	(-55 to +150)	°C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated to T_A = 25 °C per Fig. 2.
2. Mounted on copper pad area 0.2" x 0.2" x 0.0011" (5mm x 5mm x .03mm) at each terminal
3. 8.3ns single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minute, maximum.
4. For bipolar devices add a C to the part number, i.e. P4SMA5.0C or P4SMA5.0CA
5. Electrical characteristics apply in both directions for bipolar devices



RATINGS AND CHARACTERISTIC CURVES P4SMA6.8 THRU P4SMA200

For Bipolar devices add a “C” to the part number, i. e. P4SMA6.8C or P4SMA6.8CA

Device	Device Marking Code		Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
				V_{RWM}	Min				
	Uni	Bi	Volts	Volts		mA	Volts	Amps	μ Amps
P4SMA6.8	6V8	6V8C	5.5	6.12	7.48	10	10.8	39	1000
P4SMA6.8A	6V8A	6V8CA	5.8	6.46	7.14	10	10.5	39	1000
P4SMA7.5	7V5	7V5C	6.05	6.75	8.25	10	11.7	36.3	500
P4SMA7.5A	7V5A	7V5CA	6.4	7.13	7.88	10	11.3	36.3	500
P4SMA8.2	8V2	8V2C	6.63	7.38	9.02	1	12.5	33.9	200
P4SMA8.2A	8V2A	8V2CA	7.02	7.79	8.61	1	12.1	33.9	200
P4SMA9.1	9V1	9V1C	7.37	8.19	10	1	13.8	30.6	50
P4SMA9.1A	9V1A	9V1CA	7.78	8.65	9.55	1	13.4	30.6	50
P4SMA10	10	10C	8.1	9.0	11	1	15	28.3	10
P4SMA10A	10A	10CA	8.55	9.5	10.5	1	14.5	28.3	10
P4SMA11	11	11C	8.92	9.9	12.1	1	16.2	26.3	5
P4SMA11A	11A	11CA	9.4	10.5	11.6	1	15.6	26.3	5
P4SMA12	12	12C	9.72	10.8	13.2	1	17.3	24.6	5
P4SMA12A	12A	12CA	10.2	11.4	12.6	1	16.7	24.6	5
P4SMA13	13	13C	10.5	11.7	14.3	1	19	22.5	5
P4SMA13A	13A	13CA	11.1	12.4	13.7	1	18.2	22.5	5
P4SMA15	15	15C	12.1	13.5	16.5	1	22	19.3	5
P4SMA15A	15A	15CA	12.8	14.3	15.8	1	21.2	19.3	5
P4SMA16	16	16C	12.9	14.4	17.6	1	23.5	18.2	5
P4SMA16A	16A	16CA	13.6	15.2	16.8	1	22.5	18.2	5
P4SMA18	18	18C	14.5	16.2	19.8	1	26.5	16.1	5
P4SMA18A	18A	18CA	15.3	17.1	18.9	1	25.2	16.1	5
P4SMA20	20	20C	16.2	18	22	1	29.1	14.8	5
P4SMA20A	20A	20CA	17.1	19	21	1	27.7	14.8	5
P4SMA22	22	22C	17.8	19.8	24.2	1	31.9	13.4	5
P4SMA22A	22A	22CA	18.8	20.9	23.1	1	30.6	13.4	5
P4SMA24	24	24C	19.4	21.6	26.4	1	34.7	12.3	5
P4SMA24A	24A	24CA	20.5	22.8	25.2	1	33.2	12.3	5
P4SMA27	27	27C	21.8	24.3	29.7	1	39.1	10.9	5
P4SMA27A	27A	27CA	23.1	25.7	28.4	1	37.5	10.9	5
P4SMA30	30	30C	24.3	27	33	1	43.5	9.9	5
P4SMA30A	30A	30CA	25.6	28.5	31.5	1	41.4	9.9	5
P4SMA33	33	33C	28.6	29.7	36.3	1	47.7	9	5
P4SMA33A	33A	33CA	28.2	31.4	34.7	1	45.7	9	5
P4SMA36	36	36C	29.1	32.4	39.6	1	52	8.2	5
P4SMA36A	36A	36CA	30.8	34.2	37.8	1	49.9	8.2	5
P4SMA39	39	39C	31.6	35.1	42.9	1	56.4	7.6	5
P4SMA39A	39A	39CA	33.3	37.1	41	1	53.9	7.6	5
P4SMA43	43	43C	34.8	38.7	47.3	1	61.9	6.9	5
P4SMA43A	43A	43CA	36.8	40.9	45.2	1	59.3	6.9	5
P4SMA47	47	47C	38.1	42.3	51.7	1	67.8	6.3	5
P4SMA47A	47A	47CA	40.2	44.7	49.4	1	64.8	6.3	5
P4SMA51	51	51C	41.3	45.9	56.1	1	73.5	5.8	5
P4SMA51A	51A	51CA	43.6	48.5	53.6	1	70.1	5.8	5
P4SMA56	56	56C	45.4	50.4	61.6	1	80.5	5.3	5
P4SMA56A	56A	56CA	47.8	53.2	58.8	1	77	5.3	5
P4SMA62	62	62C	50.2	55.8	68.2	1	89	4.8	5
P4SMA62A	62A	62CA	53	58.9	65.1	1	85	4.8	5
P4SMA68	68	68C	55.1	61.2	74.8	1	98	4.5	5
P4SMA68A	68A	68CA	58.1	64.6	71.4	1	92	4.5	5
P4SMA75	75	75C	60.7	67.5	82.5	1	108	4	5
P4SMA75A	75A	75CA	64.1	71.3	78.8	1	103	4	5
P4SMA82	82	82C	66.4	73.8	90.2	1	118	3.6	5
P4SMA82A	82A	82CA	70.1	77.9	86.1	1	113	3.6	5
P4SMA91	91	91C	73.7	81.9	100	1	131	3.3	5
P4SMA91A	91A	91CA	77.8	86.5	95.5	1	125	3.3	5
P4SMA100	100	100C	81	90	110	1	144	3	5
P4SMA100A	100A	100CA	85.5	95	105	1	137	3	5



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Device	Device Marking Code		Standoff Voltage	Breakdown Voltage (V_{BR})		Test Current	Maximum Clamping Voltage @ I_{PP}	Peak Pulse Current	Reverse leakage @ V_{RWM}
				Min	Max				
	Uni	Uni	V_{RWM} Volts	Volts		I_T mA	V_C Volts	I_{PP} Amps	I_R μ Amps
P4SMA110	110	110C	89.2	99	121	1	158	2.7	5
P4SMA110A	110A	110CA	94	105	116	1	152	2.7	5
P4SMA120	120	120C	97.2	108	132	1	173	2.5	5
P4SMA120A	120A	120CA	102	114	126	1	165	2.5	5
P4SMA130	130	130C	106	117	143	1	187	2.3	5
P4SMA130A	130A	130CA	111	124	137	1	179	2.3	5
P4SMA150	140	140C	121	135	165	1	215	2	5
P4SMA150A	150A	150CA	128	143	158	1	207	2	5
P4SMA160	160	160C	130	144	176	1	230	1.9	5
P4SMA160A	160A	160CA	136	152	168	1	219	1.9	5
P4SMA170	170	170C	138	153	187	1	244	1.8	5
P4SMA170A	170A	170CA	145	162	179	1	234	1.8	5
P4SMA180	180	180C	146	162	198	1	258	1.7	5
P4SMA180A	180A	180CA	154	171	189	1	246	1.7	5
P4SMA200	200	200C	162	180	220	1	287	1.5	5
P4SMA200A	200A	200CA	171	190	210	1	274	1.5	5

Notes

1. For bidirectional parts with V_{RWM} of 10V or less, the I_R limit is doubled.



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Fig. 1 - Peak Pulse Power Rating

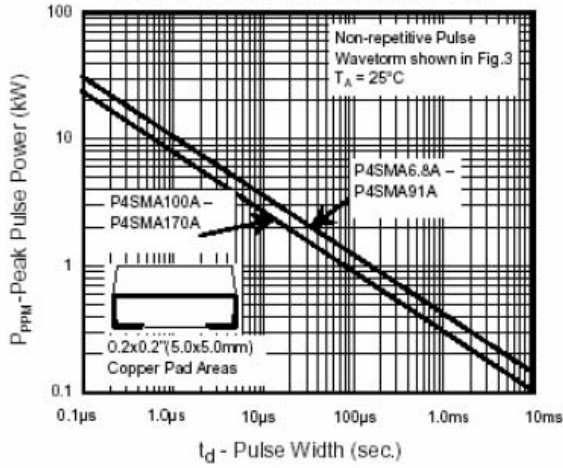


Fig.2 - Pulse Derating Curve

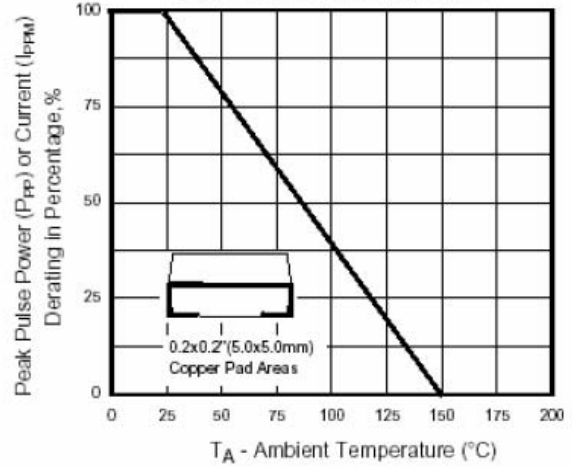


Fig.3 - Pulse Waveform

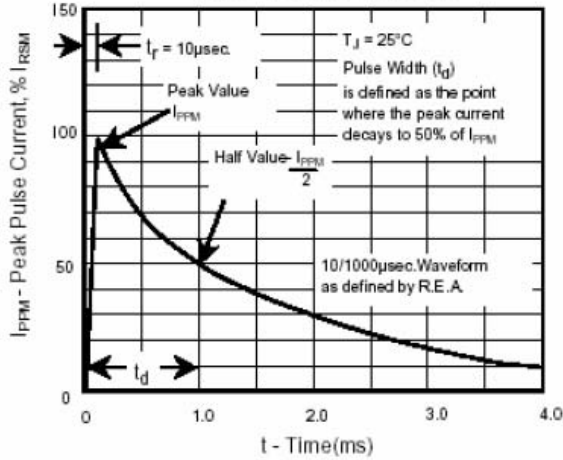


Fig.4 - Typical Junction Capacitance

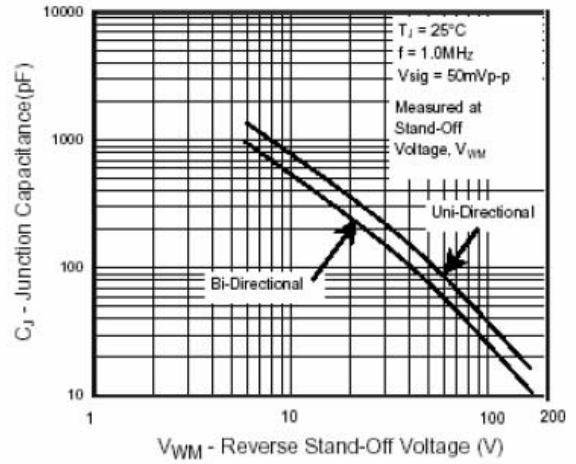


Fig. 5 - Typ. Transient Thermal Impedance

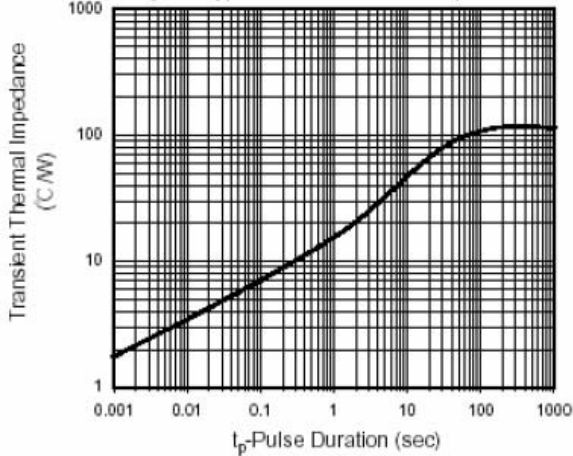


Fig.6 - Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional Only

