

P4SMA6.8A~P4SMA550CA

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR POWER 400 Watt

BREAK DOWN VOLTAGE 6.8 to 550 Volt

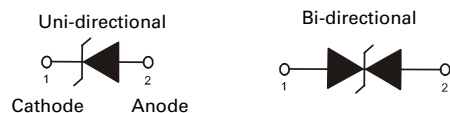
SMA / DO-214AC Unit:mm

FEATURES

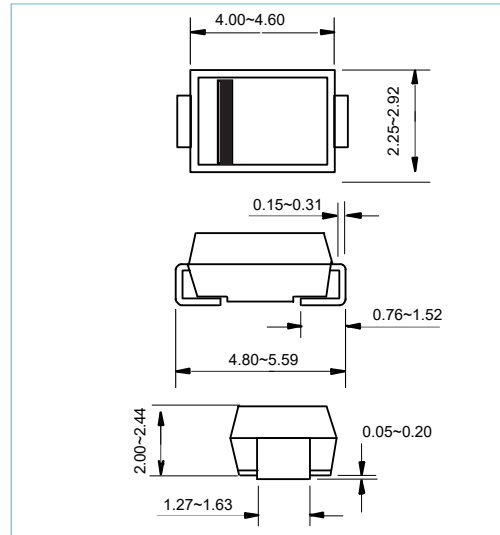
- Glass passivated junction
- Low inductance
- Plastic Material has UL Flammability Classification 94V-O
- Fast response time: typically less than 1.0ps from 0V to BV min
- High temperature soldering : 260°C /10 seconds at terminals
- ESD IEC-61000-4-2 Air ±30kV, Contact ±30kV
- Lead free in compliance with EU RoHS 2.0

MECHANICAL DATA

- Case: JEDEC DO-214AC,Molded plastic over passivated junction.
- Polarity: Color band denotes cathode end



For Uni-directional use A Suffix for types P4SMA6.8A thru types P4SMA550A.
For Bi-directional use CA Suffix for types P4SMA6.8CA thru types P4SMA550CA.



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation on $T_A = 25^\circ\text{C}$ (Notes 1,2,5, Fig.1)	P_{PP}	400	Watts
ESD IEC-61000-4-2 (Air) ESD IEC-61000-4-2 (Contact)	V_{ESD}	± 30 ± 30	kV
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I_{FSM}	40	Amps
Peak Pulse Current on $t_p=10/1000\mu\text{s}$ waveform (Notes 1)	I_{PPM}	see Table 1	Amps
Typical Thermal Resistance Junction to Air (Notes 2)	$R_{\theta JA}$	120	$^\circ\text{C} / \text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

NOTES :

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2.
2. Mounted on 5mm² copper pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum.
4. Lead temperature at 75°C = T_L .
5. Peak pulse power waveform is 10/1000 μs .
6. A transient suppressor is selected according to the working peak reverse voltage (V_{RWM}), which should be equal to or greater than the DC or continuous peak operating voltage level.

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ELECTRICAL CHARACTERISTICS @25°C

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{pp} (V)	Maximum Peak Pulse Current I_{pp} (A)	Maximum Reverse Leakage I_R @ V_R (μA)	Maximum Temperature Coefficient of V_{BR} (%/°C)
		UNI	BI		MIN	MAX					
P4SMA6.8A	P4SMA6.8CA	6V8A	6V8C	5.80	6.45	7.14	10	10.5	39.0	1000	0.041
P4SMA7.5A	P4SMA7.5CA	7V5A	7V5C	6.40	7.13	7.88	10	11.3	36.3	500	0.052
P4SMA8.2A	P4SMA8.2CA	8V2A	8V2C	7.02	7.79	8.61	10	12.1	33.9	200	0.058
P4SMA9.1A	P4SMA9.1CA	9V1A	9V1C	7.78	8.65	9.55	1	13.4	30.6	50	0.063
P4SMA10A	P4SMA10CA	10A	10C	8.55	9.50	10.50	1	14.5	28.3	10	0.066
P4SMA11A	P4SMA11CA	11A	11C	9.40	10.50	11.60	1	15.6	26.3	5	0.069
P4SMA12A	P4SMA12CA	12A	12C	10.20	11.40	12.60	1	16.7	24.6	5	0.071
P4SMA13A	P4SMA13CA	13A	13C	11.10	12.40	13.70	1	18.2	22.5	1	0.074
P4SMA15A	P4SMA15CA	15A	15C	12.80	14.30	15.80	1	21.2	19.3	1	0.076
P4SMA16A	P4SMA16CA	16A	16C	13.60	15.20	16.80	1	22.5	18.2	1	0.080
P4SMA18A	P4SMA18CA	18A	18C	15.30	17.10	18.90	1	25.5	16.1	1	0.083
P4SMA20A	P4SMA20CA	20A	20C	17.10	19.00	21.00	1	27.7	14.8	1	0.085
P4SMA22A	P4SMA22CA	22A	22C	18.80	20.90	23.10	1	30.6	13.4	1	0.088
P4SMA24A	P4SMA24CA	24A	24C	20.50	22.80	25.20	1	33.2	12.3	1	0.091
P4SMA27A	P4SMA27CA	27A	27C	23.10	25.70	28.40	1	37.5	10.9	1	0.092
P4SMA30A	P4SMA30CA	30A	30C	25.60	28.50	31.50	1	41.4	9.9	1	0.093
P4SMA33A	P4SMA33CA	33A	33C	28.20	31.40	34.70	1	45.7	9.0	1	0.094
P4SMA36A	P4SMA36CA	36A	36C	30.80	34.20	37.80	1	49.9	8.2	1	0.096
P4SMA39A	P4SMA39CA	39A	39C	33.30	37.10	41.00	1	53.9	7.6	1	0.097
P4SMA43A	P4SMA43CA	43A	43C	36.80	40.90	45.20	1	59.3	6.9	1	0.098
P4SMA47A	P4SMA47CA	47A	47C	40.20	44.70	49.40	1	64.8	6.3	1	0.099
P4SMA51A	P4SMA51CA	51A	51C	43.60	48.50	53.60	1	70.1	5.8	1	0.100
P4SMA56A	P4SMA56CA	56A	56C	47.80	53.20	58.80	1	77.0	5.3	1	0.101
P4SMA62A	P4SMA62CA	62A	62C	53.00	58.90	65.10	1	85.0	4.8	1	0.102
P4SMA68A	P4SMA68CA	68A	68C	58.10	64.60	71.40	1	92.0	4.5	1	0.103
P4SMA75A	P4SMA75CA	75A	75C	64.10	71.30	78.80	1	103.0	4.0	1	0.104
P4SMA82A	P4SMA82CA	82A	82C	70.10	77.90	86.10	1	113.0	3.6	1	0.105
P4SMA91A	P4SMA91CA	91A	91C	77.80	86.50	95.50	1	125.0	3.3	1	0.106
P4SMA100A	P4SMA100CA	100A	100C	85.50	95.00	105.00	1	137.0	3.0	1	0.106
P4SMA110A	P4SMA110CA	110A	110C	94.00	105.00	116.00	1	152.0	2.7	1	0.107
P4SMA120A	P4SMA120CA	120A	120C	102.00	114.00	126.00	1	165.0	2.5	1	0.107
P4SMA130A	P4SMA130CA	130A	130C	111.00	124.00	137.00	1	179.0	2.3	1	0.107
P4SMA150A	P4SMA150CA	150A	150C	128.00	143.00	158.00	1	207.0	2.0	1	0.108
P4SMA160A	P4SMA160CA	160A	160C	136.00	152.00	168.00	1	219.0	1.9	1	0.108
P4SMA170A	P4SMA170CA	170A	170C	145.00	162.00	179.00	1	234.0	1.8	1	0.108
P4SMA180A	P4SMA180CA	180A	180C	154.00	171.00	189.00	1	246.0	1.7	1	0.108
P4SMA200A	P4SMA200CA	200A	200C	171.00	190.00	210.00	1	274.0	1.5	1	0.108
P4SMA220A	P4SMA220CA	220A	220C	185.00	209.00	231.00	1	328.0	1.3	1	0.110
P4SMA250A	P4SMA250CA	250A	250C	214.00	237.00	263.00	1	344.0	1.2	1	0.110
P4SMA300A	P4SMA300CA	300A	300C	256.00	285.00	315.00	1	414.0	1.0	1	0.110
P4SMA350A	P4SMA350CA	350A	350C	300.00	332.00	368.00	1	482.0	0.9	1	0.112
P4SMA400A	P4SMA400CA	400A	400C	342.00	380.00	420.00	1	548.0	0.8	1	0.112
P4SMA440A	P4SMA440CA	440A	440C	376.00	418.00	462.00	1	602.0	0.7	1	0.112
P4SMA480A	P4SMA480CA	480A	480C	408.00	456.00	504.00	1	658.0	0.6	1	0.112
P4SMA510A	P4SMA510CA	510A	510C	434.00	485.00	535.00	1	698.0	0.6	1	0.112
P4SMA530A	P4SMA530CA	530A	530C	451.00	503.50	556.50	1	725.0	0.6	1	0.112
P4SMA540A	P4SMA540CA	540A	540C	460.00	513.00	567.00	1	740.0	0.5	1	0.112
P4SMA550A	P4SMA550CA	550A	550C	468.00	522.50	577.50	1	760.0	0.5	1	0.112

For bidirectional type having V_R of 10 volts and less, the I_R limit is double.

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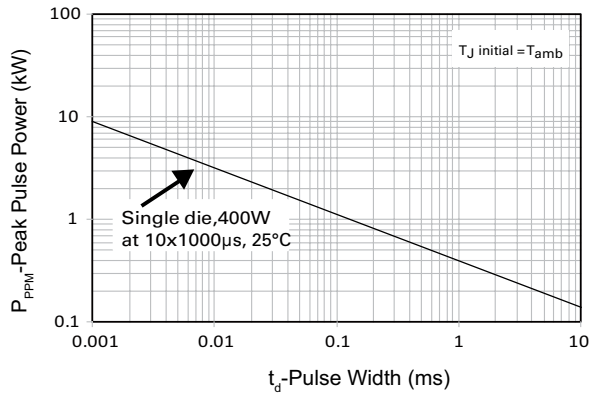


Fig.1 Pulse Power Rating Curve

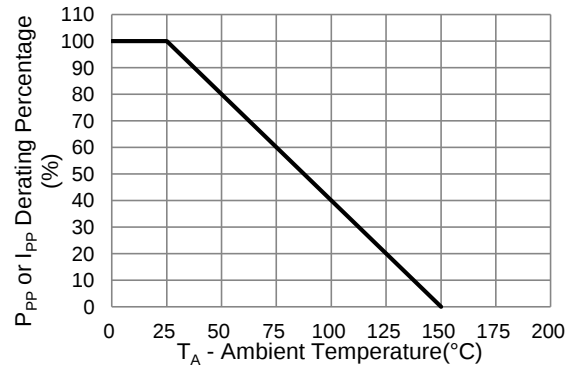


Fig.2 Derating Curve

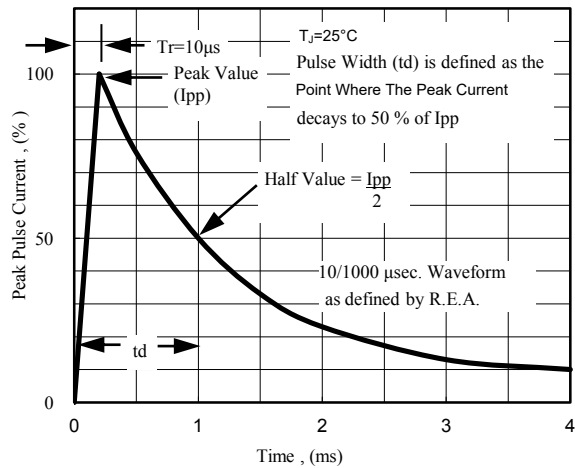


Fig.3 - Pulse Waveform

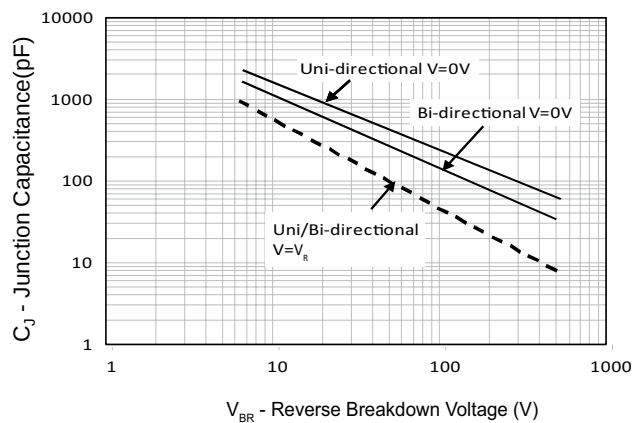


Fig.4 Typical Capacitance

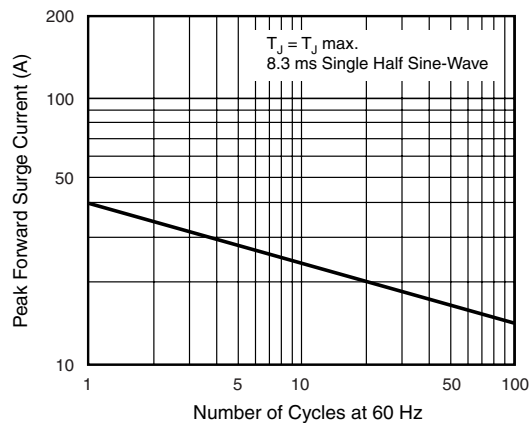


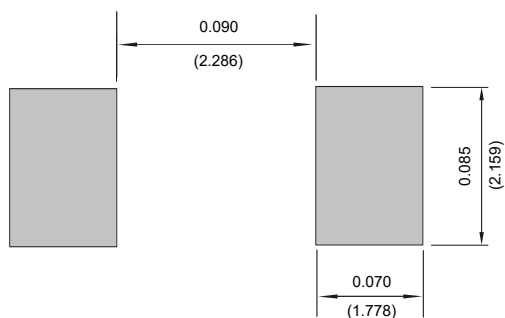
Fig 5. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

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MOUNTING PAD LAYOUT

SMA / DO-214AC

Unit:Inch(mm)



ORDER INFORMATION

- Packing information

Part Number	Case	Reel Size	QUANTITY
P4SMA6.8A~P4SMA550CA	SMA	13 Inch	5000