

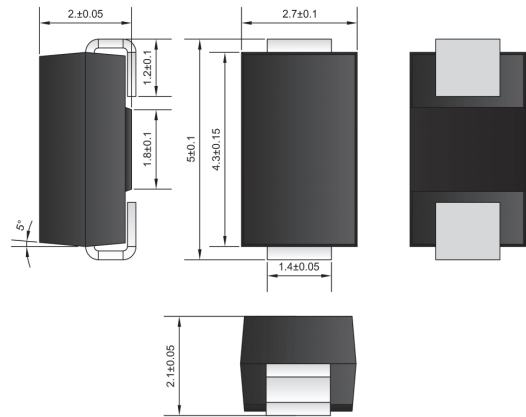
SMA6.8(C)A THRU SMA600(C)A

400W Surface Mount Transient Voltage Suppressors

■ Features

- 400W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%.
- Excellent clamping capability.
- Low incremental surge resistance.
- Glass passivated chip junction.
- Ultra high-speed switching.

■ Outline SMA(DO-214AC)

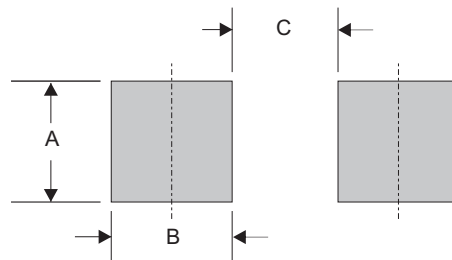


Dimensions in millimeters

■ Mechanical data

- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AC / SMA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.002 ounce, 0.055 gram

■ SMA foot print



A	B	C
0.068 (1.70)	0.104 (2.60)	0.060 (1.50)

Dimensions in inches and (millimeters)

■ Maximum ratings and electrical characteristics

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	P4SMA series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	P_{PPM}	400	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	I_{FSM}	40	A
Steady state power dissipation	on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	1.0	W
Peak pulse current	with a 10/1000us waveform, note 1	I_{PPM}	See Table 1	A
Maximum instantaneous forward voltage	at 25A for unidirectional only, note 3	V_F	3.5 / 5.0	V
Operating temperature		T_J	-55 ~ +150	°C
Storage temperature		T_{STG}	-55 ~ +150	°C

Notes : 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_a=25^\circ\text{C}$ per Fig. 2.
 2. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
 3. $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$.

RATINGS AND CHARACTERISTIC CURV SMA6.8(C)A THRU SMA600(C)A

■ Electrical characteristics

table 1

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R @ V_{RWM}$	UNI	BI
	Volts	Volts	Volts	mA	A	Volts	A	uA		
SMA6.8(C)A	5.8	6.46	7.14	10	40	10.5	38.1	500	6V8A	6V8C
SMA7.5(C)A	6.4	7.13	7.88	10	40	11.3	35.40	500	7V5A	7V5C
SMA8.2(C)A	7.0	7.79	8.61	10	40	12.1	33.06	200	8V2A	8V2C
SMA9.1(C)A	7.8	8.65	9.56	1.0	40	13.4	29.85	50	9V1A	9V1C
SMA10(C)A	8.6	9.50	10.50	1.0	40	14.5	27.59	10	10A	10C
SMA11(C)A	9.4	10.45	11.55	1.0	40	15.6	25.64	5	11A	11C
SMA12(C)A	10.2	11.40	12.60	1.0	40	16.7	23.95	5	12A	12C
SMA13(C)A	11.1	12.35	13.65	1.0	40	18.2	21.98	5	13A	13C
SMA15(C)A	12.8	14.25	15.75	1.0	40	21.2	18.87	5	15A	15C
SMA16(C)A	13.6	15.20	16.80	1.0	40	22.5	17.78	5	16A	16C
SMA18(C)A	15.3	17.10	18.90	1.0	40	25.2	15.87	5	18A	18C
SMA20(C)A	17.1	19.00	21.00	1.0	40	27.7	14.44	5	20A	20C
SMA22(C)A	18.8	20.90	23.10	1.0	40	30.6	13.07	5	22A	22C
SMA24(C)A	20.5	22.80	25.20	1.0	40	33.2	12.05	5	24A	24C
SMA27(C)A	23.1	25.65	28.35	1.0	40	37.5	10.67	5	27A	27C
SMA30(C)A	25.6	28.50	31.50	1.0	40	41.4	9.66	5	30A	30C
SMA33(C)A	28.2	31.35	34.65	1.0	40	45.7	8.75	5	33A	33C
SMA36(C)A	30.8	34.20	37.80	1.0	40	49.9	8.02	5	36A	36C
SMA39(C)A	33.3	37.05	40.95	1.0	40	53.9	7.42	5	39A	39C
SMA43(C)A	36.8	40.85	45.15	1.0	40	59.3	6.75	5	43A	43C
SMA47(C)A	40.2	44.65	49.35	1.0	40	64.8	6.17	5	47A	47C
SMA51(C)A	43.6	48.45	53.55	1.0	40	70.1	5.71	5	51A	51C
SMA56(C)A	47.8	53.20	58.80	1.0	40	77.0	5.19	5	56A	56C
SMA62(C)A	53.0	58.90	65.10	1.0	40	85.0	4.71	5	62A	62C
SMA68(C)A	58.1	64.60	71.40	1.0	40	92.0	4.35	5	68A	68C
SMA75(C)A	64.1	71.25	78.75	1.0	40	103.0	3.88	5	75A	75C
SMA82(C)A	70.1	77.90	86.10	1.0	40	113.0	3.54	5	82A	82C
SMA91(C)A	77.8	86.45	95.55	1.0	40	125.0	3.20	5	91A	91C
SMA100(C)A	85.5	95.00	105.00	1.0	40	137.0	2.92	5	100A	100C
SMA110(C)A	94.0	104.50	115.50	1.0	40	152.0	2.63	5	110A	110C
SMA120(C)A	102.0	114.00	126.00	1.0	40	165.0	2.42	5	120A	120C
SMA130(C)A	111.0	123.50	136.50	1.0	40	179.0	2.23	5	130A	130C
SMA150(C)A	128.0	142.50	157.50	1.0	40	207.0	1.93	5	150A	150C
SMA160(C)A	136.0	152.00	168.00	1.0	40	219.0	1.83	5	160A	160C
SMA170(C)A	145.0	161.50	178.50	1.0	40	234.0	1.71	5	170A	170C

RATINGS AND CHARACTERISTIC CURV SMA6.8(C)A THRU SMA600(C)A

■ Electrical characteristics

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R @ V_{RWM}$		
	Volts	Volts	Volts	mA	A	Volts	A	uA	UNI	BI
SMA180(C)A	154.0	171.00	189.00	1.0	40	246.0	1.63	5	180A	180C
SMA200(C)A	171.0	190.00	210.00	1.0	40	274.0	1.46	5	200A	200C
SMA220(C)A	185.0	209.00	231.00	1.0	40	328.0	1.22	5	220A	220C
SMA250(C)A	214.0	237.50	262.50	1.0	40	344.0	1.16	5	250A	250C
SMA300(C)A	256.0	285.00	315.00	1.0	40	414.0	0.97	5	300A	300C
SMA350(C)A	299.3	332.50	367.50	1.0	40	482.0	0.83	5	350A	350C
SMA380(C)A	324.9	361.00	399.00	1.0	40	524.4	0.76	5	380A	380C
SMA400(C)A	342.0	380.00	420.00	1.0	40	552.0	0.72	5	400A	400C
SMA440(C)A	376.2	418.00	462.00	1.0	40	607.0	0.66	5	440A	440C
SMA500(C)A	427.5	475.00	525.00	1.0	40	690.0	0.58	5	500A	500C
SMA520(C)A	444.6	494.00	546.00	1.0	40	717.6	0.56	5	520A	520C
SMA550(C)A	470.3	522.50	577.50	1.0	40	759.0	0.53	5	550A	550C
SMA600(C)A	513.0	570.00	630.00	1.0	40	828.0	0.48	5	600A	600C

Note 1. Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices, no suffix denotes 10% tolerance devices.
 2. For bi-directional types having V_{RWM} of 10 volts and less, the I_R limit is doubled.

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Rating and characteristic curves

Fig.1 - Peak Pulse Power Rating Curve

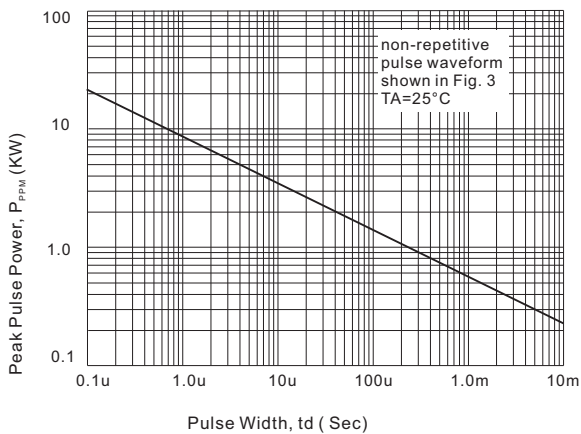


Fig.2 - Pulse Derating Curve

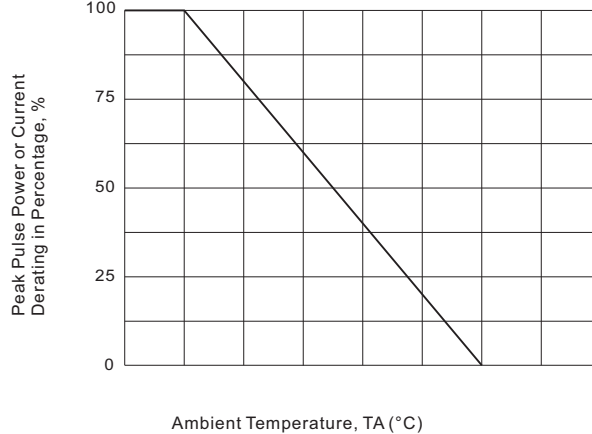


Fig.3 - Pulse Waveform

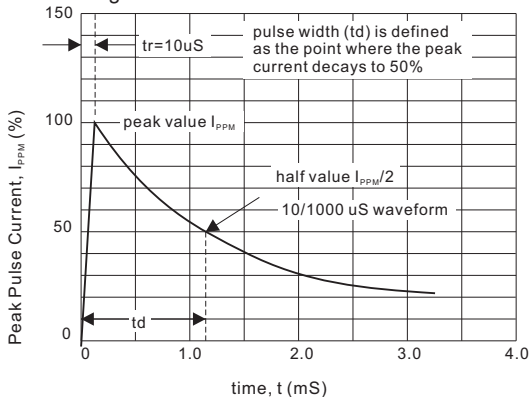


Fig.4 - Typical Junction Capacitance

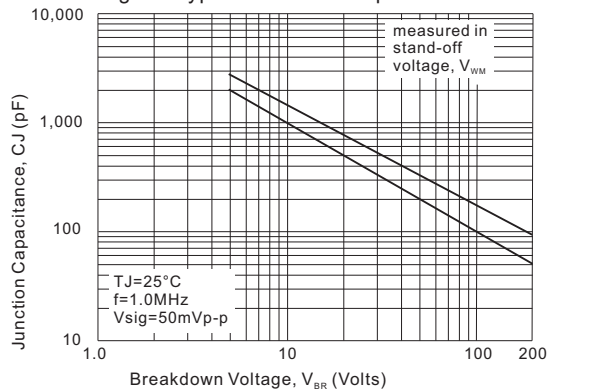


Fig.5 - Steady State Power Derating Curve

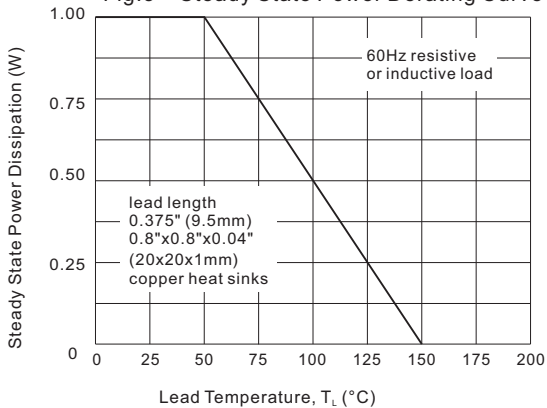


Fig.6 - Maximum Non-Repetitive Forward Surge Current

