

SMC6.8(C)A THRU SMC600(C)A

1500W Surface Mount Transient Voltage Suppressors

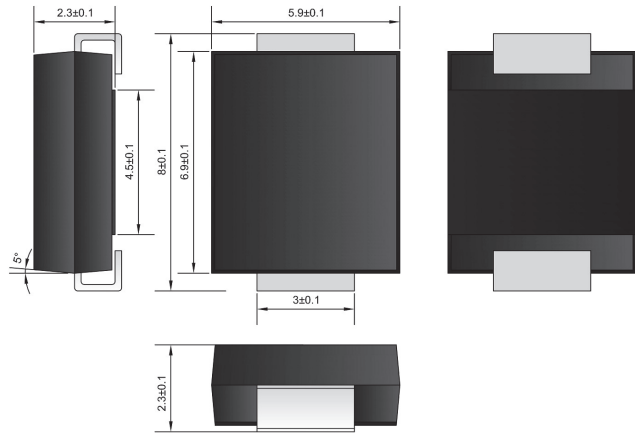
■ Features

- 1500W 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.
- Lead-free parts meet environmental standards of MIL-STD-19500 /228

■ Mechanical data

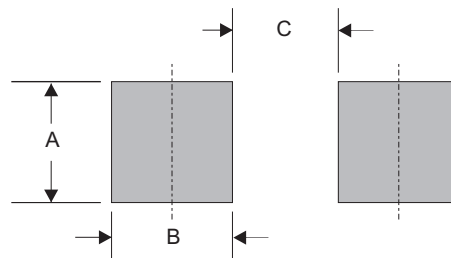
- Epoxy: UL94-V0 rated flame retardant
- Case : Molded plastic, DO-214AB / SMC
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Weight : 0.007 ounce, 0.226 gram

■ Outline SMC(DO-214AB)



Dimensions in millimeters

■ SMC foot print



A	B	C
0.132 (3.30)	0.098 (2.50)	0.176 (4.40)

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	1.5SMC series	UNIT
Peak power dissipation	with a 10/1000us waveform, note 1	P_{PPM}	1500	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC method), note 2	I_{FSM}	200	A
Steady state power dissipation	on infinite heatsink at $T_L = 75^\circ\text{C}$	P_D	6.5	W
Peak pulse current	with a 10/1000us waveform, note 1	I_{PPM}	See Table 1	A
Maximum instantaneous forward voltage	at 100A 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 SMC6.8(C)A THRU SMC600(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		
SMC6.8(C)A	5.8	6.46	7.14	10	200	10.5	142.86	500	6V8A	6V8C
SMC7.5(C)A	6.4	7.13	7.88	10	200	11.3	132.74	500	7V5A	7V5C
SMC8.2(C)A	7.0	7.79	8.61	10	200	12.1	123.97	200	8V2A	8V2C
SMC9.1(C)A	7.8	8.65	9.50	1.0	200	13.4	111.94	50	9V1A	9V1C
SMC10(C)A	8.6	9.50	10.50	1.0	200	14.5	103.45	10	10A	10C
SMC11(C)A	9.4	10.45	11.55	1.0	200	15.6	96.15	5	11A	11C
SMC12(C)A	10.2	11.40	12.60	1.0	200	16.7	89.82	5	12A	12C
SMC13(C)A	11.1	12.35	13.65	1.0	200	18.2	82.42	5	13A	13C
SMC15(C)A	12.8	14.25	15.75	1.0	200	21.2	70.75	5	15A	15C
SMC16(C)A	13.6	15.20	16.80	1.0	200	22.5	66.67	5	16A	16C
SMC18(C)A	15.3	17.10	18.90	1.0	200	25.2	59.52	5	18A	18C
SMC20(C)A	17.1	19.00	21.00	1.0	200	27.7	54.15	5	20A	20C
SMC22(C)A	18.8	20.90	23.10	1.0	200	30.6	49.02	5	22A	22C
SMC24(C)A	20.5	22.80	25.20	1.0	200	33.2	45.18	5	24A	24C
SMC27(C)A	23.1	25.65	28.35	1.0	200	37.5	40.00	5	27A	27C
SMC30(C)A	25.6	28.50	31.50	1.0	200	41.4	36.23	5	30A	30C
SMC33(C)A	28.2	31.35	34.65	1.0	200	45.7	32.82	5	33A	33C
SMC36(C)A	30.8	34.20	37.80	1.0	200	49.9	30.06	5	36A	36C
SMC39(C)A	33.3	37.05	40.95	1.0	200	53.9	27.83	5	39A	39C
SMC43(C)A	36.8	40.85	45.15	1.0	200	59.3	25.30	5	43A	43C
SMC47(C)A	40.2	44.65	49.35	1.0	200	64.8	23.15	5	47A	47C
SMC51(C)A	43.6	48.45	53.55	1.0	200	70.1	21.40	5	51A	51C
SMC56(C)A	47.8	53.20	58.80	1.0	200	77.0	19.48	5	56A	56C
SMC62(C)A	53.0	58.90	65.10	1.0	200	85.0	17.65	5	62A	62C
SMC68(C)A	58.1	64.60	71.40	1.0	200	92.0	16.30	5	68A	68C
SMC75(C)A	64.1	71.25	78.75	1.0	200	103.0	14.56	5	75A	75C
SMC82(C)A	70.1	77.90	86.10	1.0	200	113.0	13.27	5	82A	82C
SMC91(C)A	77.8	86.45	95.55	1.0	200	125.0	12.00	5	91A	91C
SMC100(C)A	85.5	95.00	105.00	1.0	200	137.0	10.95	5	100A	100C
SMC110(C)A	94.00	104.50	115.50	1.0	200	152.0	9.87	5	110A	110C
SMC120(C)A	102.0	114.00	126.00	1.0	200	165.0	9.09	5	120A	120C
SMC130(C)A	111.0	123.50	136.50	1.0	200	179.0	8.38	5	130A	130C
SMC150(C)A	128.0	142.50	157.50	1.0	200	207.0	7.25	5	150A	150C
SMC160(C)A	136.0	152.00	168.00	1.0	200	219.0	6.85	5	160A	160C

RATINGS AND CHARACTERISTIC CURV SMC6.8(C)A THRU SMC600(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
SMC170(C)A	145.0	161.50	178.50	1.0	200	234.0	6.41	5	170A	170C
SMC180(C)A	154.0	171.00	189.00	1.0	200	246.0	6.10	5	180A	180C
SMC200(C)A	171.0	190.00	210.00	1.0	200	274.0	5.47	5	200A	200C
SMC220(C)A	185.0	209.00	231.00	1.0	200	328.0	4.57	5	220A	220C
SMC250(C)A	214.0	237.50	262.50	1.0	200	344.0	4.36	5	250A	250C
SMC300(C)A	256.0	285.00	315.00	1.0	200	414.0	3.62	5	300A	300C
SMC350(C)A	299.3	332.50	367.50	1.0	200	482.0	3.11	5	350A	350C
SMC380(C)A	324.9	361.00	399.00	1.0	200	524.4	2.86	5	380A	380C
SMC400(C)A	342.0	380.00	420.00	1.0	200	548.0	2.72	5	400A	400C
SMC440(C)A	376.2	418.00	462.00	1.0	200	602.0	2.47	5	440A	440C
SMC500(C)A	427.5	475.00	525.00	1.0	200	690.0	2.17	5	500A	500C
SMC520(C)A	444.6	494.00	546.00	1.0	200	717.6	2.09	5	520A	520C
SMC550(C)A	470.3	522.50	577.50	1.0	200	759.0	1.98	5	550A	550C
SMC600(C)A	513.0	570.00	630.00	1.0	200	828.0	1.81	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

