

# 1.5SMC6.8A - 540A

**Stand-off Voltage : 6.8 to 540 V**

**Peak Pulse Power : 1500 W**

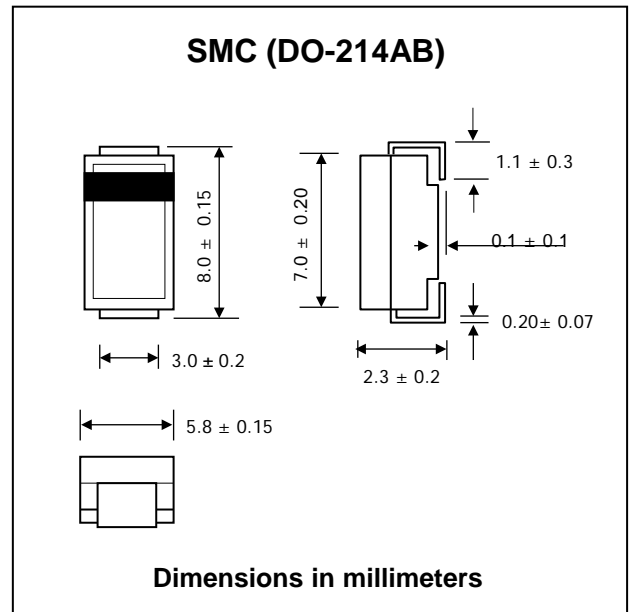
## FEATURES :

- \* 1500W peak pulse power capability with a 10/1000µs waveform, repetition rate (duty cycle): 0.01%
- \* Excellent clamping capability
- \* Low inductance
- \* Low incremental surge resistance
- \* Very fast response time
- \* Low profile package with built-in strain relief for surface mounted applications
- \* Pb / RoHS Free

## MECHANICAL DATA

- \* Case : SMC Molded plastic
- \* Epoxy : UL94V-0 rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Mounting position : Any
- \* Weight : 0.21 gram

## SURFACE MOUNT UNI-DIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS



## DEVICES FOR BIPOLAR APPLICATIONS

For Bi-directional devices, use suffix CA (e.g. 1.5SMC6.8CA), Electrical characteristics apply in both directions

## MAXIMUM RATINGS

Rating at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000ms waveform <sup>(1) (2)</sup>	P <sub>PPM</sub>	1500	W
Peak Pulse Current on 10/1000µs waveform <sup>(1)</sup>	I <sub>PPM</sub>	See Next Table	A
Power dissipation on infinite heatsink, Ta = 50 °C	P <sub>M(AV)</sub>	6.5	W
Thermal resistance junction to ambient air <sup>(3)</sup>	R <sub>θJA</sub>	75	°C/W
Thermal resistance junction to leads	R <sub>θJL</sub>	15	°C/W
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 150	°C

### Notes :

- (1) Non-repetitive Current pulse, per Fig. 3 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal.
- (3) Measured on minimum recommended pad layout.



## ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified,  $V_F = 3.5\text{ V}$  at  $I_F = 100\text{ A}$  (uni-directional only)

Type	Marking Code	Breakdown Voltage $V_{(BR)}$ at $I_T$ <sup>(1)</sup>		Test Current $I_T$	Stand-off Voltage $V_{RWM}$	Maximum Reverse Leakage at $V_{WM}$ $I_D$ <sup>(3)</sup>	Maximum Peak Pulse Current $I_{PPM}$	Maximum Clamping Voltage at $I_{PPM}$ $V_C$	Maximum Temp. Coefficient of $V_{(BR)}$ (%/°C)
		$V_{BR}$ (V)							
		Min.	Max.						
1.5SMC6.8A	6V8A	6.45	7.14	10	5.80	1000	143	10.5	0.057
1.5SMC7.5A	7V5A	7.13	7.88	10	6.40	500	133	11.3	0.061
1.5SMC8.2A	8V2A	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5SMC9.1A	9V1A	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5SMC10A	10A	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1.5SMC11A	11A	10.5	11.6	1.0	9.40	5.0	96.2	15.6	0.075
1.5SMC12A	12A	11.4	12.6	1.0	10.2	5.0	89.8	16.7	0.078
1.5SMC13A	13A	12.4	13.7	1.0	11.1	5.0	82.4	18.2	0.081
1.5SMC15A	15A	14.3	15.8	1.0	12.8	1.0	70.8	21.2	0.084
1.5SMC16A	16A	15.2	16.8	1.0	13.6	1.0	66.7	22.5	0.086
1.5SMC18A	18A	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.089
1.5SMC20A	20A	19.0	21.0	1.0	17.1	1.0	54.2	27.7	0.090
1.5SMC22A	22A	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
1.5SMC24A	24A	22.8	25.2	1.0	20.5	1.0	45.2	33.2	0.090
1.5SMC27A	27A	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
1.5SMC30A	30A	28.5	31.5	1.0	25.6	1.0	36.2	41.4	0.097
1.5SMC33A	33A	31.4	34.7	1.0	28.2	1.0	32.8	45.7	0.098
1.5SMC36A	36A	34.2	37.8	1.0	30.8	1.0	30.1	49.9	0.099
1.5SMC39A	39A	37.1	41.0	1.0	33.3	1.0	27.8	53.9	0.100
1.5SMC43A	43A	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101
1.5SMC47A	47A	44.7	49.4	1.0	40.2	1.0	23.1	64.8	0.101
1.5SMC51A	51A	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102
1.5SMC56A	56A	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103
1.5SMC62A	62A	58.9	65.1	1.0	53.0	1.0	17.6	85.0	0.104
1.5SMC68A	68A	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104
1.5SMC75A	75A	71.3	78.8	1.0	64.1	1.0	14.6	104	0.105
1.5SMC82A	82A	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105
1.5SMC91A	91A	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106
1.5SMC100A	100A	95.0	105	1.0	85.5	1.0	10.9	137	0.106
1.5SMC110A	110A	105	116	1.0	94.0	1.0	9.9	152	0.107
1.5SMC120A	120A	114	126	1.0	102	1.0	9.1	165	0.107
1.5SMC130A	130A	124	137	1.0	111	1.0	8.4	179	0.107
1.5SMC150A	150A	143	158	1.0	128	1.0	7.2	207	0.106
1.5SMC160A	160A	152	168	1.0	136	1.0	6.8	219	0.108
1.5SMC170A	170A	162	179	1.0	145	1.0	6.4	234	0.108
1.5SMC180A	180A	171	189	1.0	154	1.0	6.1	246	0.108
1.5SMC200A	200A	190	210	1.0	171	1.0	5.5	274	0.108
1.5SMC220A	220A	209	231	1.0	185	1.0	4.6	328	0.108
1.5SMC250A	250A	237	263	1.0	214	1.0	4.4	344	0.110
1.5SMC300A	300A	285	315	1.0	256	1.0	3.6	414	0.110
1.5SMC350A	350A	333	368	1.0	300	1.0	3.1	482	0.110
1.5SMC400A	400A	380	420	1.0	342	1.0	2.7	548	0.110
1.5SMC440A	440A	418	462	1.0	376	1.0	2.5	602	0.110
1.5SMC480A	480A	456	504	1.0	408	1.0	2.28	658	0.110
1.5SMC510A	510A	485	535	1.0	434	1.0	2.15	698	0.110
1.5SMC520A	520A	494	546	1.0	445	1.0	2.09	718	0.110
1.5SMC540A	540A	513	567	1.0	459	1.0	2.03	740	0.110

Notes : (1) Pulse test :  $t_p \leq 50\text{ ms}$ .

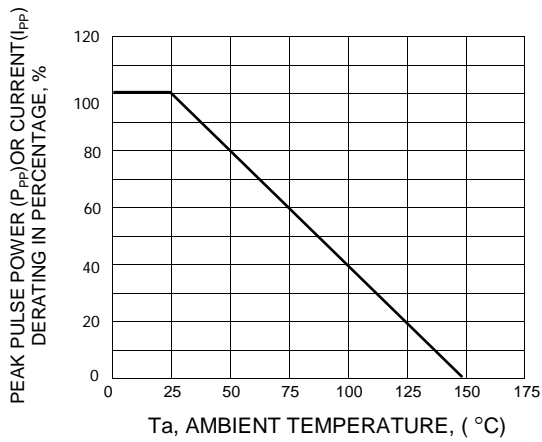
(2) Surge current waveform per Fig.3 and derate per Fig.1

(3) For bidirectional types with  $V_R$  10 volts and less, the  $I_D$  limit is doubled

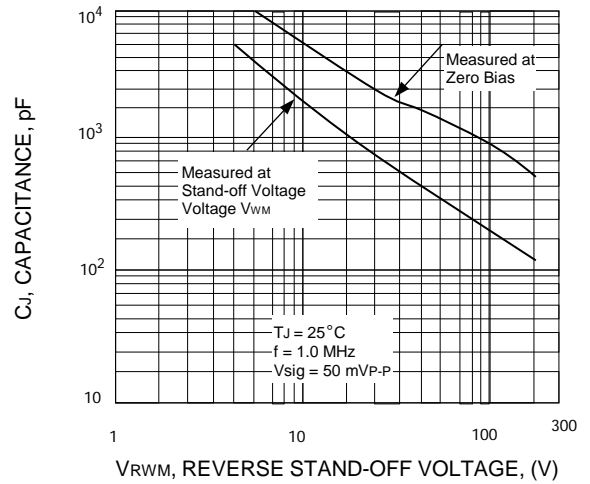


**RATING AND CHARACTERISTIC CURVES ( 1.5SMC6.8A - 540A )**

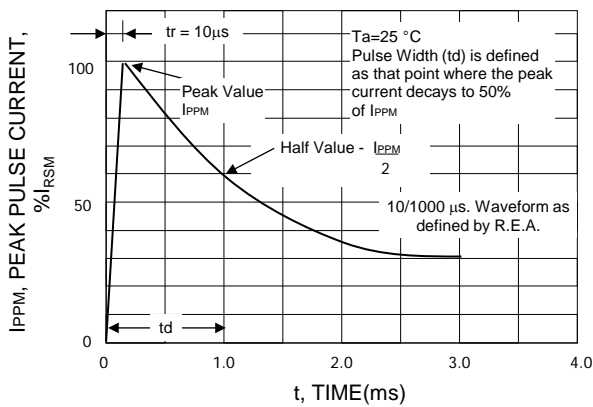
**FIG.1 - PULSE DERATING CURVE**



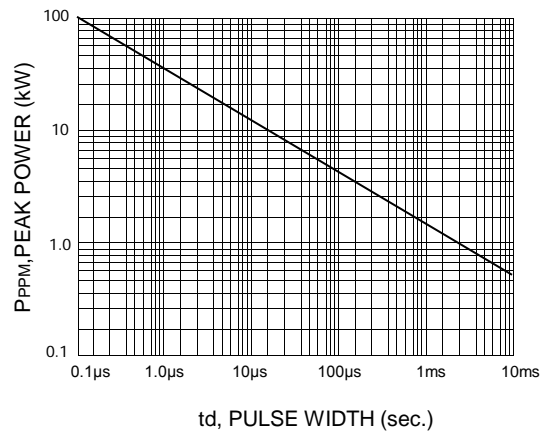
**FIG.2 - TYPICAL JUNCTION CAPACITANCE**



**FIG.3 - PULSE WAVEFORM**



**FIG.4 - PEAK PULSE POWER RATING CURVE**



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