

## V. Transient Voltage Suppressor

### 1500W Surface Mount TVS (Breakdown Voltage: 6.8~91 Volts)

### 1.5SMC Series

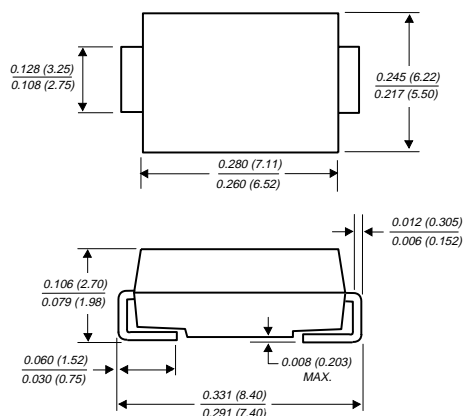
(Package: SMC(DO-214AB))

#### FEATURES

- Glass passivated chip
- 1500W peak pulse power capability with a 10/1000  $\mu$ s waveform, repetitive rate (duty cycle): 0.01%
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time

#### MECHANICAL DATA

- Case : Molded plastic
- Epoxy : UL 94V-0 rate flame retardant
- Lead : Solderable per MIL-STD-750, Method 2026
- Polarity : Color band denotes cathode end except for bi-directional types
- Mounting Position : Any



Case: SMC  
Dimensions in inches and (millimetres)

### Devices for Bi-Directional Applications

For bi-directional devices use suffix "CA" for types 1.5SMC6.8CA thru 1.5SMC91CA (e.g. 1.5SMC33CA)  
Electrical characteristics apply in both directions.

### Maximum Ratings, Thermal & Electrical Characteristics

(Ratings at 25 ambient temperature unless otherwise specified)

Ratings	Symbol	Value	Units
Peak power dissipation a 10/1000 $\mu$ s waveform	P <sub>PPM</sub>	Minimum 1500	Watts
Peak pulse current with a 10/1000 $\mu$ s waveform	I <sub>PPM</sub>	See next table	Amps
Power dissipation on infinite heatsink at T <sub>L</sub> =75	P <sub>D</sub>	6.5	Watts
Peak forward surge current, 8.3ms single half sine-wave unidirectional only <sup>(1)</sup>	I <sub>FSM</sub>	200	Amps
Maximum instantaneous forward voltage at 25A for unidirectional only	V <sub>F</sub>	3.5	Volts
Operating junction and storage temperature range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	

Note:

1. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.

**V. TVS & Overvoltage Protection Device**

**1500W Surface Mount TVS (Breakdown Voltage: 6.8~91 Volts)**

**1.5SMC Series**

**(Package: SMC (DO-214AB))**

Device Type	Device Marking Code	$V_{WM}$	$I_R@V_{WM}$	Breakdown Voltage $V_{(BR)}$			$V_C @ I_{PPM}$		$V_{BR}$	
				Volts			@ $I_T$	$V_C$		$I_{PPM}$
	Full Part Number	Volts	$\mu A$	Min	Nom	Max	mA	Volts	A	%/
1.5SMC6.8(C)A	Full PN	5.80	1000	6.45	6.8	7.14	10	10.5	143	0.057
1.5SMC7.5(C)A	Full PN	6.40	500	7.13	7.5	7.88	10	11.3	132	0.061
1.5SMC8.2(C)A	Full PN	7.02	200	7.79	8.2	8.61	10	12.1	124	0.065
1.5SMC9.1(C)A	Full PN	7.78	50	8.65	9.1	9.55	1	13.4	112	0.068
1.5SMC10(C)A	Full PN	8.55	10	9.50	10	10.5	1	14.5	103	0.073
1.5SMC11(C)A	Full PN	9.40	5	10.5	11	11.6	1	15.6	96.0	0.075
1.5SMC12(C)A	Full PN	10.2	5	11.4	12	12.6	1	16.7	90.0	0.078
1.5SMC13(C)A	Full PN	11.1	5	12.4	13	13.7	1	18.2	82.0	0.081
1.5SMC15(C)A	Full PN	12.8	5	14.3	15	15.8	1	21.2	71.0	0.084
1.5SMC16(C)A	Full PN	13.6	5	15.2	16	16.8	1	22.5	67.0	0.086
1.5SMC18(C)A	Full PN	15.3	5	17.1	18	18.9	1	25.2	59.5	0.088
1.5SMC20(C)A	Full PN	17.1	5	19.0	20	21.0	1	27.7	54.0	0.090
1.5SMC22(C)A	Full PN	18.8	5	20.9	22	23.1	1	30.6	49.0	0.092
1.5SMC24(C)A	Full PN	20.5	5	22.8	24	25.2	1	33.2	45.0	0.094
1.5SMC27(C)A	Full PN	23.1	5	25.7	27	28.4	1	37.5	40.0	0.096
1.5SMC30(C)A	Full PN	25.6	5	28.5	30	31.5	1	41.4	36.0	0.097
1.5SMC33(C)A	Full PN	28.2	5	31.4	33	34.7	1	45.7	33.0	0.098
1.5SMC36(C)A	Full PN	30.8	5	34.2	36	37.8	1	49.9	30.0	0.099
1.5SMC39(C)A	Full PN	33.3	5	37.1	39	41.0	1	53.9	28.0	0.100
1.5SMC43(C)A	Full PN	36.8	5	40.9	43	45.2	1	59.3	25.3	0.101
1.5SMC47(C)A	Full PN	40.2	5	44.7	47	49.4	1	64.8	23.2	0.101
1.5SMC51(C)A	Full PN	43.6	5	48.5	51	53.6	1	70.1	21.4	0.102
1.5SMC56(C)A	Full PN	47.8	5	53.2	56	58.8	1	77.0	19.5	0.103
1.5SMC62(C)A	Full PN	53.0	5	58.9	62	65.1	1	85.0	17.7	0.104
1.5SMC68(C)A	Full PN	58.1	5	64.6	68	71.4	1	92.0	16.3	0.104
1.5SMC75(C)A	Full PN	64.1	5	71.3	75	78.8	1	103	14.6	0.105
1.5SMC82(C)A	Full PN	70.1	5	77.9	82	86.1	1	113	13.3	0.105
1.5SMC91(C)A	Full PN	77.8	5	86.5	91	95.5	1	125	12.0	0.106

Note:

1. A transient suppressor is normally selected according to the working peak reverse voltage ( $V_{WM}$ ), which should be equal to or greater than the DC or continuous peak operating voltage level.
2.  $V_{BR}$  measured at pulse test current  $I_T$  at an ambient temperature of 25 .
3. Surge current waveform per Figure 2 and derate per Figure 3 of the General Data – 1500 Watt at the beginning of this group.

## Ratings and Characteristic Curves of 1.5SMC Series

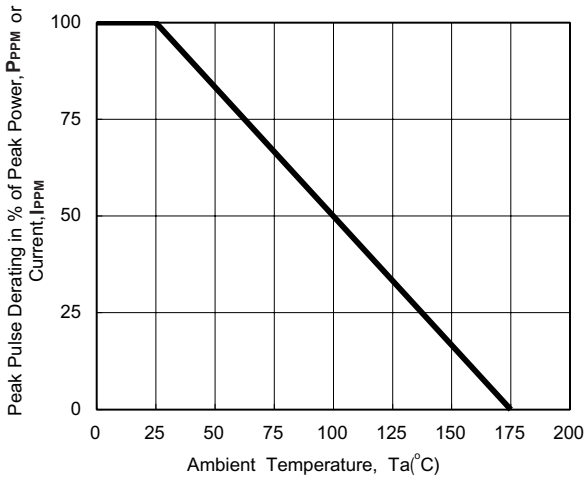


Fig. 1 - Pulse Derating Curve

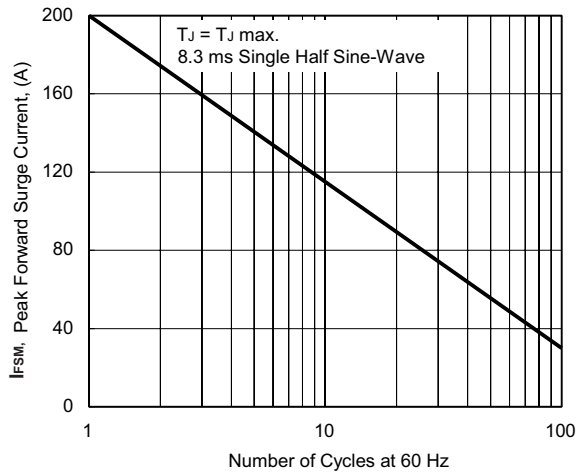


Fig. 2 - Maximum Non-Repetitive Surge Current

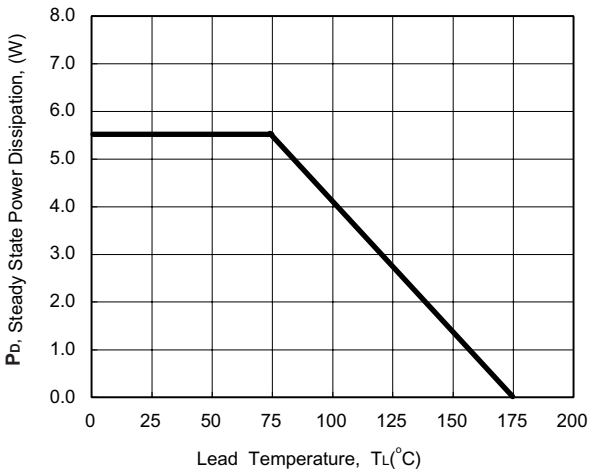


Fig. 3 - Steady State Power Derating Curve

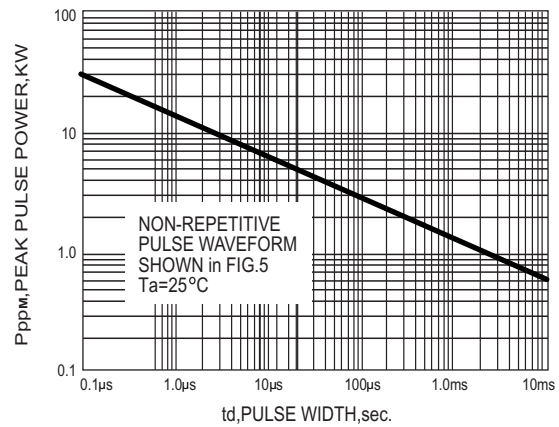


Fig. 4 - Peak Pulse Power Rating Curve

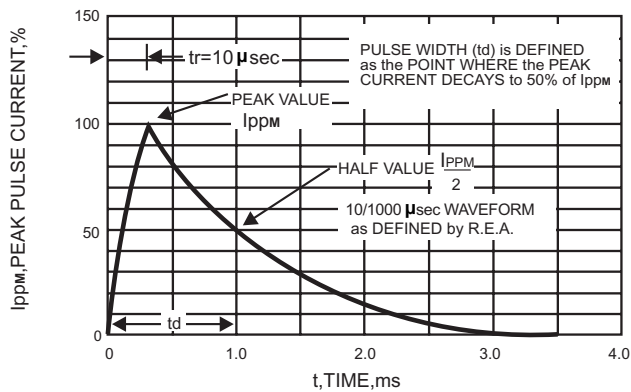


Fig. 5 - Pulse Waveform