

### FEATURES

- Low profile package with built-in strain relief for surface mounted applications
- Glass passivated junction
- Low incremental surge resistance
- Low inductance
- Excellent clamping capability
- 1500W peak pulse power capability with a 10/1000 $\mu$ s waveform, repetition rate (duty cycle): 0.01%
- Very fast response time
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0

### MECHANICAL DATA

**Case:** JEDEC DO-214AB (SMC) molded plastic over passivated junction

**Terminals:** Solder plated, solderable per MIL-STD-750, Method 2026. High temperature soldering: 250°C/10 seconds at terminals.

**Polarity:** For uni-directional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation.

**Standard Packaging:** 16mm tape (EIA STD RS-481)

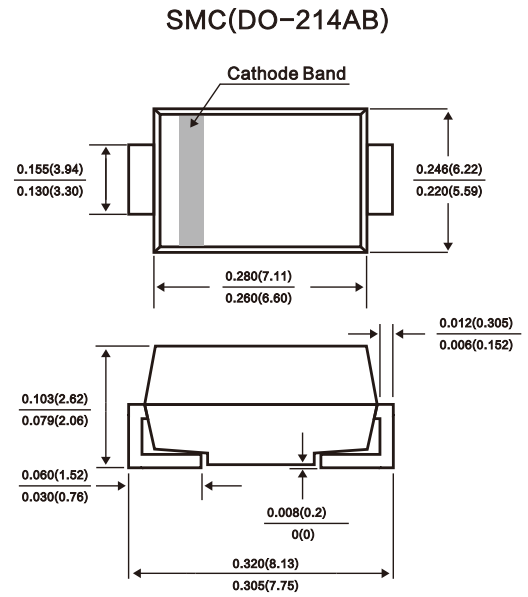
**Weight:** 0.007 oz., 0.21 g

**Packaging Codes – Options (Antistatic):**

51 – 1K per Bulk box, 10K/carton

57 – 850 per 7" plastic Reel (16mm tape), 8.5K/carton

9A – 3.5K per 13" plastic Reel (16mm tape), 35K/carton



Dimensions in inches and (millimeters)

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 $\mu$ s waveform	PPPM	1500	W
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only	V <sub>F</sub>	3.5	Volts
Power dissipation on infinite heatsink, T <sub>A</sub> = 50°C	P <sub>M(AV)</sub>	6.5	W
Peak forward surge current 8.3ms single half sine-wave uni-directional only <sup>(2)</sup>	I <sub>FSM</sub>	200	A
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 T<sub>A</sub> = 25°C per Fig. 2

(2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal

(3) Mounted on minimum recommended pad layout

## Electrical Characteristics

General Semiconductor Part Number	Device Marking Code		Breakdown Voltage $V_{(BR)}$ at $I_T^{(1)}$ (V)		Test Current $I_T$ (mA)	Stand-off Voltage $V_{WM}$ (V)	Maximum Reverse Leakage at $V_{WM}$ $I_D^{(4)}$ ( $\mu$ A)	Maximum Peak Pulse Current $I_{PPM}^{(2)}$ (A)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (V)	Maximum Temp. Coefficient of $V_{(BR)}$ (% / °C)
	UNI	BI	MIN	MAX						
1.5SMC6.8A(CA)	6V8A	6V8C	6.45	7.14	10	5.8	1000	143	10.5	0.057
1.5SMC7.5A(CA)	7V5A	7V5C	7.13	7.88	10	6.4	500	133	11.3	0.061
1.5SMC8.2A(CA)	8V2A	8V2C	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5SMC9.1A(CA)	9V1A	9V1C	8.65	9.55	1	7.78	50	112	13.4	0.068
1.5SMC10A(CA)	10A	10C	9.5	10.5	1	8.55	10	103	14.5	0.073
1.5SMC11A(CA)	11A	11C	10.5	11.6	1	9.4	5	96.2	15.6	0.075
1.5SMC12A(CA)	12A	12C	11.4	12.6	1	10.2	5	89.8	16.7	0.078
1.5SMC13A(CA)	13A	13C	12.4	13.7	1	11.1	5	82.4	18.2	0.081
1.5SMC15A(CA)	15A	15C	14.3	15.8	1	12.8	1	70.8	21.2	0.084
1.5SMC16A(CA)	16A	16C	15.2	16.8	1	13.6	1	66.7	22.5	0.086
1.5SMC18A(CA)	18A	18C	17.1	18.9	1	15.3	1	59.5	25.2	0.089
1.5SMC20A(CA)	20A	20C	19	21	1	17.1	1	54.2	27.7	0.09
1.5SMC22A(CA)	22A	22C	20.9	23.1	1	18.8	1	49	30.6	0.092
1.5SMC24A(CA)	24A	24C	22.8	25.2	1	20.5	1	45.2	33.2	0.09
1.5SMC27A(CA)	27A	27C	25.7	28.4	1	23.1	1	40	37.5	0.096
1.5SMC30A(CA)	30A	30C	28.5	31.5	1	25.6	1	36.2	41.4	0.097
1.5SMC33A(CA)	33A	33C	31.4	34.7	1	28.2	1	32.8	45.7	0.098
1.5SMC36A(CA)	36A	36C	34.2	37.8	1	30.8	1	30.1	49.9	0.099
1.5SMC39A(CA)	39A	39C	37.1	41	1	33.3	1	27.8	53.9	0.1
1.5SMC43A(CA)	43A	43C	40.9	45.2	1	36.8	1	25.3	59.3	0.101
1.5SMC47A(CA)	47A	47C	44.7	49.4	1	40.2	1	23.1	64.8	0.101
1.5SMC51A(CA)	51A	51C	48.5	53.6	1	43.6	1	21.4	70.1	0.102
1.5SMC56A(CA)	56A	56C	53.2	58.8	1	47.8	1	19.5	77	0.103
1.5SMC62A(CA)	62A	62C	58.9	65.1	1	53	1	17.6	85	0.104
1.5SMC68A(CA)	68A	68C	64.6	71.4	1	58.1	1	16.3	92	0.104
1.5SMC75A(CA)	75A	75C	71.3	78.8	1	64.1	1	14.6	104	0.105
1.5SMC82A(CA)	82A	82C	77.9	86.1	1	70.1	1	13.3	113	0.105
1.5SMC91A(CA)	91A	91C	86.5	95.5	1	77.8	1	12	125	0.106
1.5SMC100A(CA)	100A	100C	95	105	1	85.5	1	10.9	137	0.106
1.5SMC110A(CA)	110A	110C	105	116	1	94	1	9.9	152	0.107
1.5SMC120A(CA)	120A	120C	114	126	1	102	1	9.1	165	0.107
1.5SMC130A(CA)	130A	130C	124	137	1	111	1	8.4	179	0.107
1.5SMC150A(CA)	150A	150C	143	158	1	128	1	7.2	207	0.106
1.5SMC160A(CA)	160A	160C	152	168	1	136	1	6.8	219	0.108
1.5SMC170A(CA)	170A	170C	162	179	1	145	1	6.4	234	0.108
1.5SMC180A(CA)	180A	180C	171	189	1	154	1	6.1	246	0.108
1.5SMC200A(CA)	200A	200C	190	210	1	171	1	5.5	274	0.108
1.5SMC220A(CA)	220A	220C	209	231	1	185	1	4.6	328	0.108
1.5SMC250A(CA)	250A	—	237	263	1	214	1	4.4	344	0.11
1.5SMC300A(CA)	300A	—	285	315	1	256	1	3.6	414	0.11
1.5SMC350A(CA)	350A	—	333	368	1	300	1	3.1	482	0.11
1.5SMC400A(CA)	400A	—	380	420	1	342	1	2.7	548	0.11
1.5SMC440A(CA)	440A	—	418	462	1	376	1	2.5	602	0.11
1.5SMC480A(CA)	480A	—	456	504	1	408	1	2.28	658	0.11
1.5SMC510A(CA)	510A	—	485	535	1	434	1	2.15	698	0.11
1.5SMC540A(CA)	540A	—	513	567	1	459	1	2.03	740	0.11

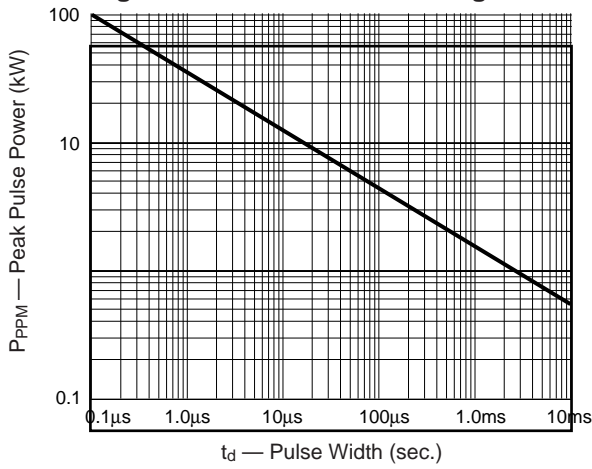
Notes: (1) Pulse test:  $t_p \leq 50ms$

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

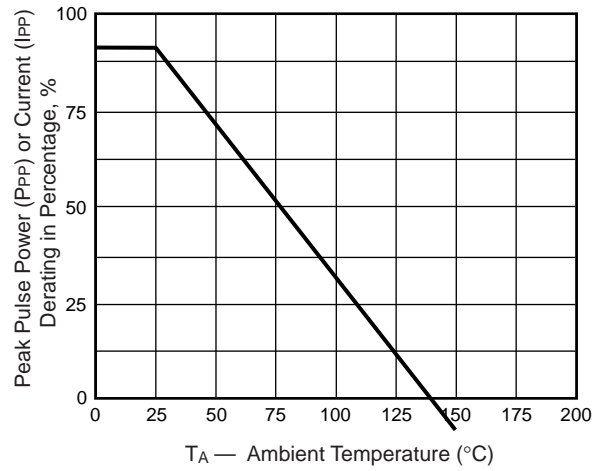
(3) All terms and symbols are consistent with ANSI/IEEE CA62.35

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

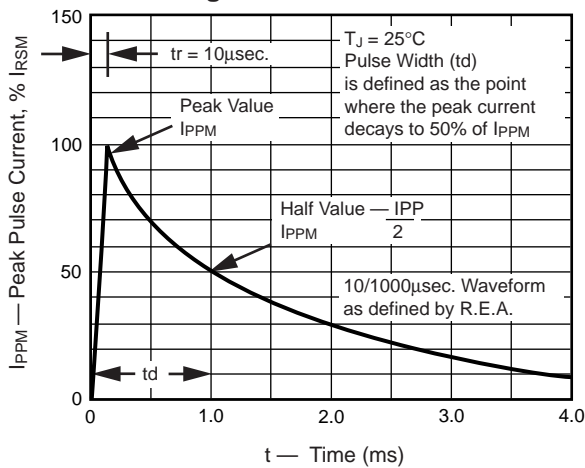
**Fig. 1 – Peak Pulse Power Rating Curve**



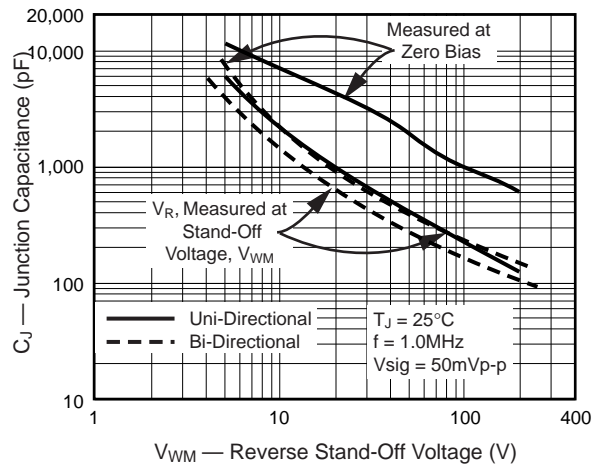
**Fig. 2 – Pulse Derating Curve**



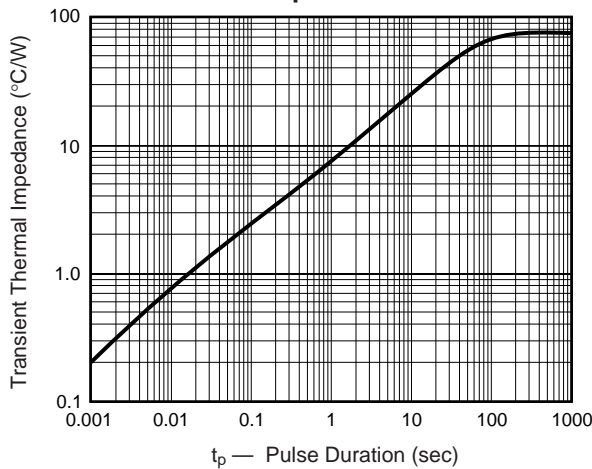
**Fig. 3 – Pulse Waveform**



**Fig. 4 – Typical Junction Capacitance Uni-Directional**



**Fig. 5 – Typical Transient Thermal Impedance**



**Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only**

