

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 μ 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)

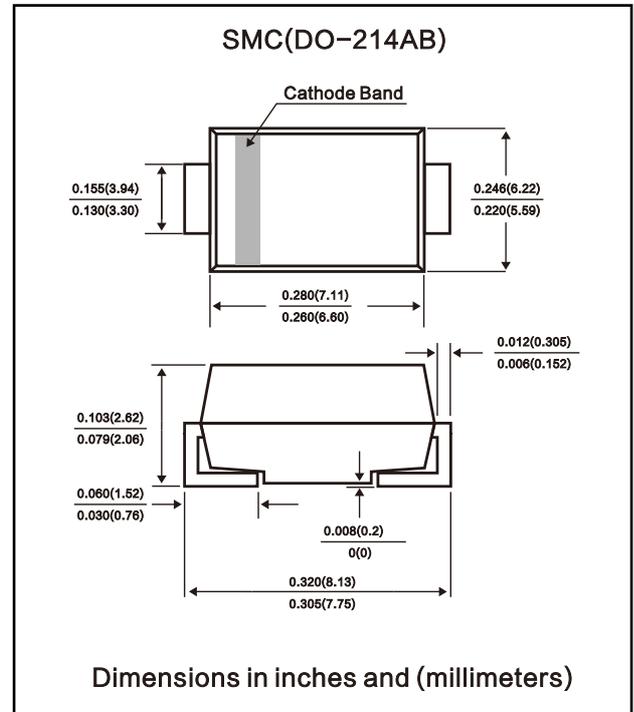
Weight: 0.007 oz., 0.21 g

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



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μ s waveform	PPPM	1500	W
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only	V _F	3.5	Volts
Power dissipation on infinite heatsink, T _A = 50°C	P _{M(AV)}	6.5	W
Peak forward surge current 8.3ms single half sine-wave uni-directional only ⁽²⁾	I _{FSM}	200	A
Thermal resistance junction to ambient air ⁽³⁾	R _{θJA}	75	°C/W
Thermal resistance junction to leads	R _{θJL}	15	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-65 to +150	°C

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2

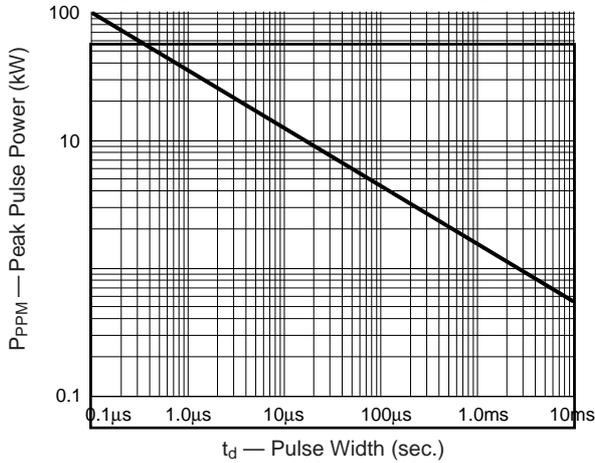
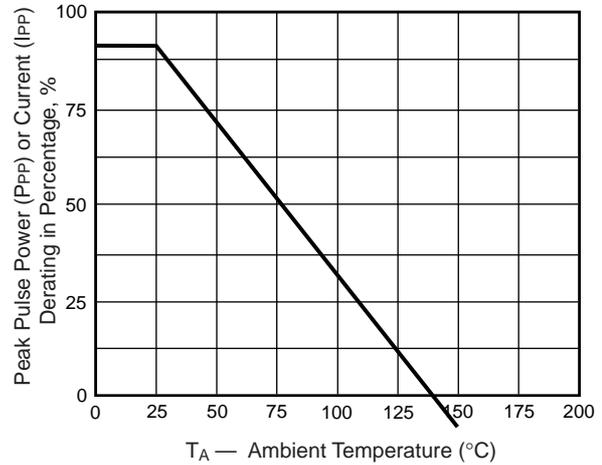
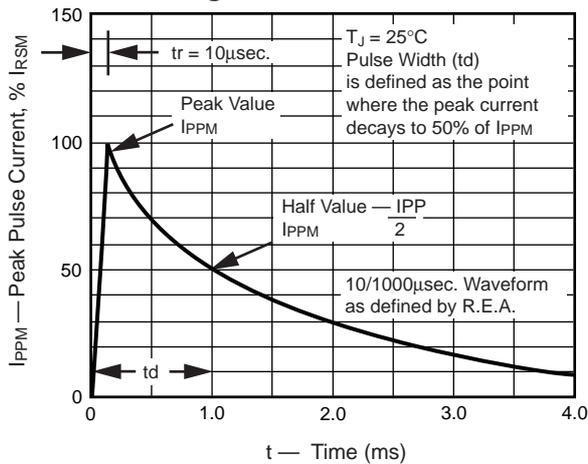
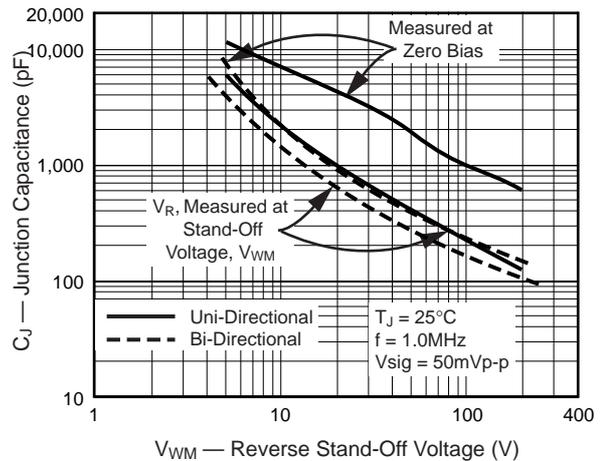
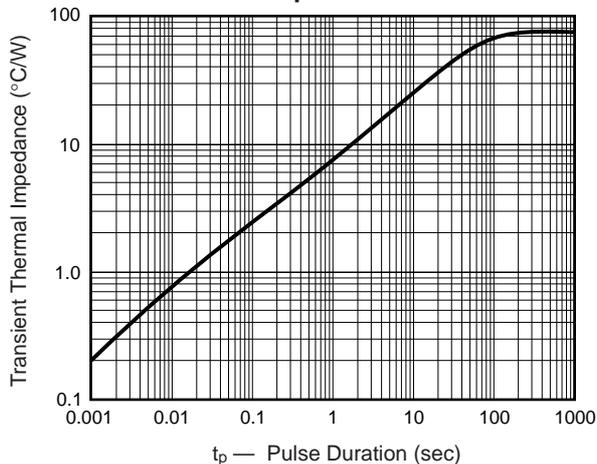
(2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal

(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} $I_D^{(4)}$ (μ 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)	GDE	GDE	6.45	7.14	10	5.80	1000	143	10.5	0.057
1.5SMC7.5A(CA)	GDK	BDK	7.13	7.88	10	6.40	500	133	11.3	0.061
1.5SMC8.2A(CA)	GDM	BDM	7.79	8.61	10	7.02	200	124	12.1	0.065
1.5SMC9.1A(CA)	GDR	BDR	8.65	9.55	1.0	7.78	50	112	13.4	0.068
1.5SMC10A(CA)	GDT	BDT	9.50	10.5	1.0	8.55	10	103	14.5	0.073
1.5SMC11A(CA)	GDV	BDV	10.5	11.6	1.0	9.40	5.0	96.2	15.6	0.075
1.5SMC12A(CA)	GDX	BDX	11.4	12.6	1.0	10.2	5.0	89.8	16.7	0.078
1.5SMC13A(CA)	GDZ	GDZ	12.4	13.7	1.0	11.1	5.0	82.4	18.2	0.081
1.5SMC15A(CA)	GEG	GEG	14.3	15.8	1.0	12.8	1.0	70.8	21.2	0.084
1.5SMC16A(CA)	GEK	BEK	15.2	16.8	1.0	13.6	1.0	66.7	22.5	0.086
1.5SMC18A(CA)	GEP	GEM	17.1	18.9	1.0	15.3	1.0	59.5	25.2	0.089
1.5SMC20A(CA)	GER	GER	19.0	21.0	1.0	17.1	1.0	54.2	27.7	0.090
1.5SMC22A(CA)	GET	BET	20.9	23.1	1.0	18.8	1.0	49.0	30.6	0.092
1.5SMC24A(CA)	GEV	BEV	22.8	25.2	1.0	20.5	1.0	45.2	33.2	0.09
1.5SMC27A(CA)	GEZ	BEZ	25.7	28.4	1.0	23.1	1.0	40.0	37.5	0.096
1.5SMC30A(CA)	GFE	BFE	28.5	31.5	1.0	25.6	1.0	36.2	41.4	0.097
1.5SMC33A(CA)	GFG	GFG	31.4	34.7	1.0	28.2	1.0	32.8	45.7	0.098
1.5SMC36A(CA)	GFK	BFK	34.2	37.8	1.0	30.8	1.0	30.1	49.9	0.099
1.5SMC39A(CA)	GFM	BFM	37.1	41.0	1.0	33.3	1.0	27.8	53.9	0.100
1.5SMC43A(CA)	GFP	BFP	40.9	45.2	1.0	36.8	1.0	25.3	59.3	0.101
1.5SMC47A(CA)	GFR	BFR	44.7	49.4	1.0	40.2	1.0	23.1	64.8	0.101
1.5SMC51A(CA)	GFV	GFV	48.5	53.6	1.0	43.6	1.0	21.4	70.1	0.102
1.5SMC56A(CA)	GFX	GFX	53.2	58.8	1.0	47.8	1.0	19.5	77.0	0.103
1.5SMC62A(CA)	GGE	GGE	58.9	65.1	1.0	53.0	1.0	17.6	85.0	0.104
1.5SMC68A(CA)	GGG	GGG	64.6	71.4	1.0	58.1	1.0	16.3	92.0	0.104
1.5SMC75A(CA)	GGM	GGM	71.3	78.8	1.0	64.1	1.0	14.6	104	0.105
1.5SMC82A(CA)	GGP	GGP	77.9	86.1	1.0	70.1	1.0	13.3	113	0.105
1.5SMC91A(CA)	GGR	GGR	86.5	95.5	1.0	77.8	1.0	12.0	125	0.106
1.5SMC100A(CA)	GGT	GGT	95.0	105	1.0	85.5	1.0	10.9	137	0.106
1.5SMC110A(CA)	GGV	GGV	105	116	1.0	94.0	1.0	9.9	152	0.107
1.5SMC120A(CA)	GGX	GGX	114	126	1.0	102	1.0	9.1	165	0.107
1.5SMC130A(CA)	GGZ	GGZ	124	137	1.0	111	1.0	8.4	179	0.107
1.5SMC150A(CA)	GHK	GHK	143	158	1.0	128	1.0	7.2	207	0.106
1.5SMC160A(CA)	GHM	GHM	152	168	1.0	136	1.0	6.8	219	0.108
1.5SMC170A(CA)	GHM	GHM	162	179	1.0	145	1.0	6.4	234	0.108
1.5SMC180A(CA)	GHP	GHP	171	189	1.0	154	1.0	6.1	246	0.108
1.5SMC200A(CA)	GHR	GHR	190	210	1.0	171	1.0	5.5	274	0.108
1.5SMC220A(CA)	-	-	209	231	1.0	185	1.0	4.6	328	0.108
1.5SMC250A(CA)	-	-	237	263	1.0	214	1.0	4.4	344	0.110
1.5SMC300A(CA)	-	-	285	315	1.0	256	1.0	3.6	414	0.110
1.5SMC350A(CA)	-	-	333	368	1.0	300	1.0	3.1	482	0.110
1.5SMC400A(CA)	-	-	380	420	1.0	342	1.0	2.7	548	0.110
1.5SMC440A(CA)	-	-	418	462	1.0	376	1.0	2.5	602	0.110
1.5SMC480A(CA)	-	-	456	504	1.0	408	1.0	2.28	658	0.110
1.5SMC510A(CA)	-	-	485	535	1.0	434	1.0	2.15	698	0.110
1.5SMC540A(CA)	-	-	513	567	1.0	459	1.0	2.03	740	0.110

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