

FEATURES

- 1500W Peak Pulse Power Dissipation
- 5.0V - 170V Standoff Voltages
- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability
- Classification Rating 94V-0



DO-214AB (SMC)

MECHANICAL DATA

- Case: SMC, Transfer Molded Epoxy
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity Indicator: Cathode Band
(Note: Bi-directional devices have no polarity indicator.)
- Marking: Marking Code See Page 2
- Weight: 0.20 grams (approx.)



Cathode

MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non repetitive current pulse derated above TA = 25°C) (Note 1)	P _{PPM}	1500	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I _{FSM}	200	A
Typical thermal resistance, junction to ambient (Note 4)	R _{θJA}	75	°C/W
Typical thermal resistance, junction to lead	R _{θJL}	15	°C/W
Operating and Storage Temperature Range	T _J , T _{STG}	-55 to +150	°C

Notes:

1. Valid provided that terminals are kept at ambient temperature.
2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
3. Unidirectional units only.
4. Mounted on minimum recommended pad layout

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

DEVICE TYPE MODIFIED "J" BEND LEAD	DEVICE MARKING CODE		BREAKDOWN VOLTAGE VBR AT $I_T^{(1)}$ (V)		TEST CURRENT I_T (mA)	STAND-OFF VOLTAGE V_{WM} (V)	MAXIMUM REVERSE LEAKAGE AT V_{WM} I_D (μA) ⁽³⁾	MAXIMUM PEAK PULSE SURGE CURRENT I_{PPM} (A) ⁽²⁾	MAXIMUM CLAMPING VOLTAGE AT I_{PPM} V_C (V)
	UNI	BI	MIN.	MAX.					
SMCJ5.0A ⁽⁵⁾	GDE	GDE	6.40	7.07	10	5.0	800	163.0	9.2
SMCJ6.0A	GDG	GDG	6.67	7.37	10	6.0	800	145.6	10.3
SMCJ6.5A	GDK	BDK	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0A	GDM	GDM	7.78	8.60	10	7.0	200	125.0	12.0
SMCJ7.5A	GDP	BDP	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0A	GDR	BDR	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5A	GDT	BDT	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0A	GDV	BDV	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10A	GDX	BDX	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11A	GDZ	GDZ	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12A	GEE	BEE	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13A	GEG	GEG	14.4	15.9	1.0	13	1.0	69.8	21.5
SMCJ14A	GEK	BEK	15.6	17.2	1.0	14	1.0	64.7	23.2
SMCJ15A	GEM	BEM	16.7	18.5	1.0	15	1.0	61.5	24.4
SMCJ16A	GEP	GEM	17.8	19.7	1.0	16	1.0	57.7	26.0
SMCJ17A	GER	GER	18.9	20.9	1.0	17	1.0	54.3	27.6
SMCJ18A	GET	BET	20.0	22.1	1.0	18	1.0	51.4	29.2
SMCJ20A	GEV	BEV	22.2	24.5	1.0	20	1.0	46.3	32.4
SMCJ22A	GEX	BEX	24.4	26.9	1.0	22	1.0	42.3	35.5
SMCJ24A	GEZ	BEZ	26.7	29.5	1.0	24	1.0	38.6	38.9
SMCJ26A	GFE	BFE	28.9	31.9	1.0	26	1.0	35.6	42.1
SMCJ28A	GFG	GFG	31.1	34.4	1.0	28	1.0	33.0	45.4
SMCJ30A	GFK	BFK	33.3	36.8	1.0	30	1.0	31.0	48.4
SMCJ33A	GFM	BFM	36.7	40.6	1.0	33	1.0	28.1	53.3
SMCJ36A	GFP	BFP	40.0	44.2	1.0	36	1.0	25.8	58.1
SMCJ40A	GFR	BFR	44.4	49.1	1.0	40	1.0	23.3	64.5
SMCJ43A	GFT	BFT	47.8	52.8	1.0	43	1.0	21.6	69.4
SMCJ45A	GFV	GFV	50.0	55.3	1.0	45	1.0	20.6	72.7
SMCJ48A	GFX	GFX	53.3	58.9	1.0	48	1.0	19.4	77.4
SMCJ51A	GFZ	GFZ	56.7	62.7	1.0	51	1.0	18.2	82.4
SMCJ54A	GGE	GGE	60.0	66.3	1.0	54	1.0	17.2	87.1
SMCJ58A	GGG	GGG	64.4	71.2	1.0	58	1.0	16.0	93.6
SMCJ60A	GGK	GGK	66.7	73.7	1.0	60	1.0	15.5	96.8
SMCJ64A	GGM	GGM	71.1	78.6	1.0	64	1.0	14.6	103
SMCJ70A	GGP	GGP	77.8	86.0	1.0	70	1.0	13.3	113
SMCJ75A	GGR	GGR	83.3	92.1	1.0	75	1.0	12.4	121
SMCJ78A	GGT	GGT	86.7	95.8	1.0	78	1.0	11.9	126
SMCJ85A	GGV	GGV	94.4	104	1.0	85	1.0	10.9	137
SMCJ90A	GGX	GGX	100	111	1.0	90	1.0	10.3	146
SMCJ100A	GGZ	GGZ	111	123	1.0	100	1.0	9.3	162
SMCJ110A	GHE	GHE	122	135	1.0	110	1.0	8.5	177
SMCJ120A	GHG	GHG	133	147	1.0	120	1.0	7.8	193
SMCJ130A	GHK	GHK	144	159	1.0	130	1.0	7.2	209
SMCJ150A	GHM	GHM	167	185	1.0	150	1.0	6.2	243
SMCJ160A	GHP	GHP	178	197	1.0	160	1.0	5.8	259
SMCJ170A	GHR	GHR	189	209	1.0	170	1.0	5.5	275

 Notes (1) Pulse test: $t_p \leq 50$ ms (2) Surge current waveform per fig. 3 and derate per fig. 2

 (3) For bi-directional types having V_{WM} of 10 V and less, the I_D limit is doubled

(4) All terms and symbols are consistent with ANSI/IEEE C62.35

 (5) For the bi-directional SMC5.0CA, the maximum V_{BR} is 7.25 V

 (6) $V_F = 3.5$ V max. at $I_F = 25$ A (uni-directional only)

(7) For bi-directional use CA suffix (e.g. SMCJ100CA).

Typical Characteristics

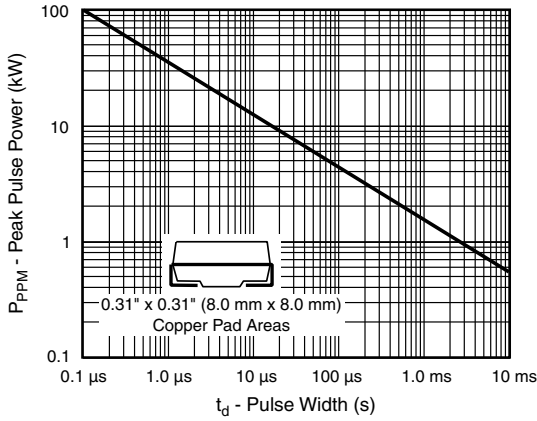


Fig. 1 - Peak Pulse Power Rating Curve

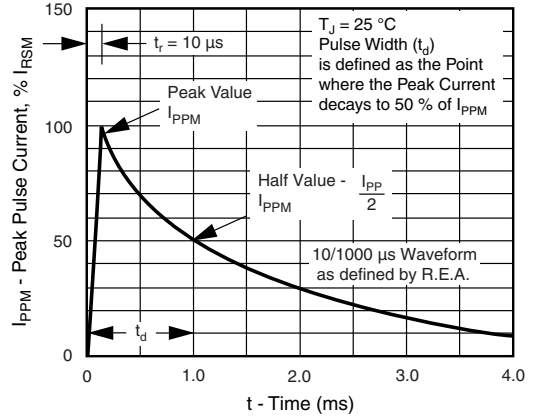


Fig. 3 - Pulse Waveform

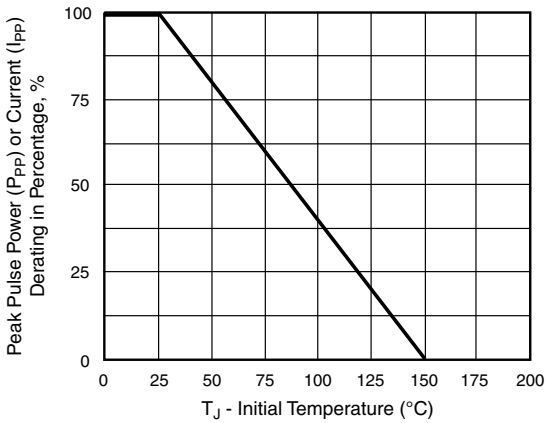


Fig. 2 - Pulse Power or Current vs. Initial Junction Temperature

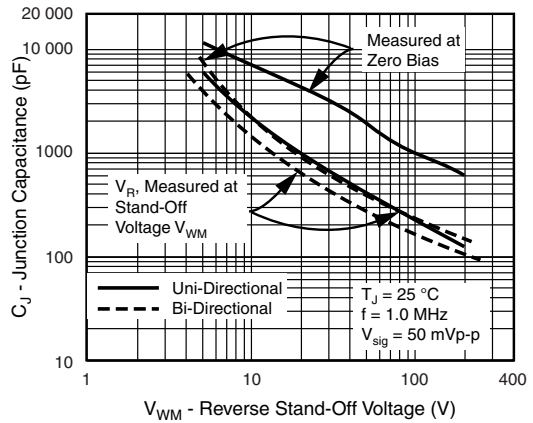


Fig. 4 - Typical Junction Capacitance

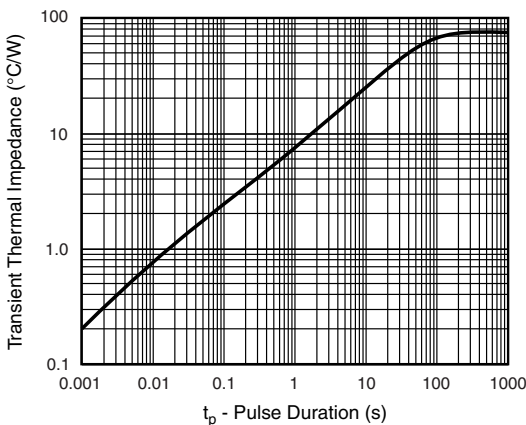


Fig. 5 - Typical Transient Thermal Impedance

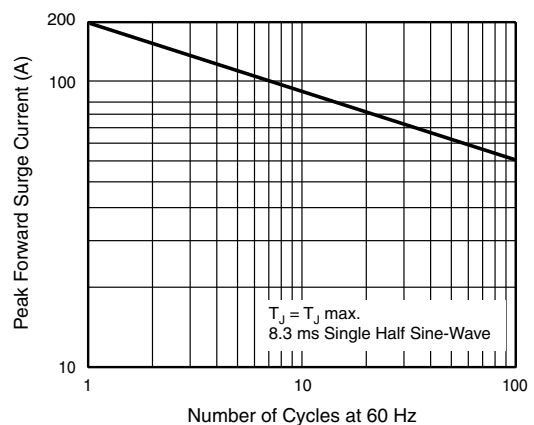
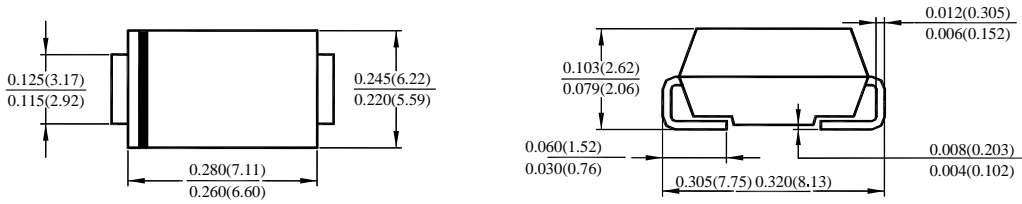


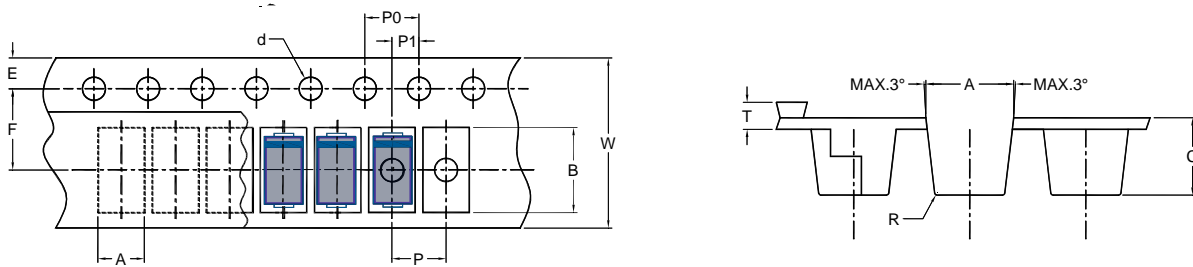
Fig. 6 - Maximum Non-Repetitive Forward Surge Current
Uni-Directional Only

SMC Package Outline Dimensions



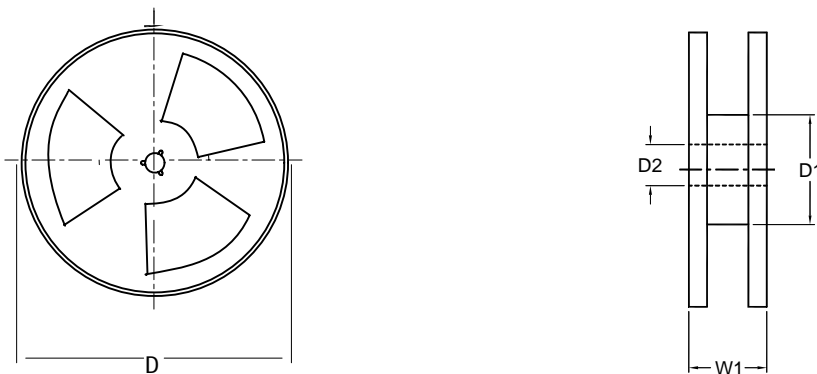
(DIMENSIONS ARE IN MILLIMETER)

SMC Embossed Carrier Tape



DIMENSIONS ARE IN MILLIMETER											
TYPE	A	B	C	d	E	F	P	P0	P1	T	W
SMC	6.0	8.30	2.5	1.5	1.5	7.65	8	4	4	0.6 Max.	16
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.1	±0.1	±0.1	±0.1	±0.2

SMC Reel



DIMENSIONS ARE IN MILLIMETER				
REEL OPTION	D	D1	D2	W1
7" DIA	178	50 min.	13	24
TOLERANCE	±2	±0.1	±0.5	±2