

SMCJ5.0A ~ 188CA

Stand-off Voltage : 5.0 to 188V

Peak Pulse Power : 1500 W

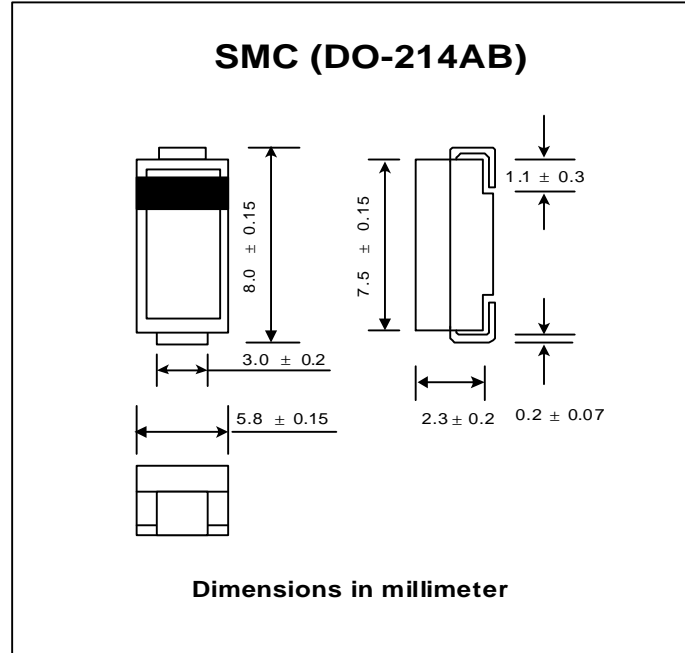
FEATURES :

- * 1500W surge capability at 1ms
- * Excellent clamping capability
- * Low zener impedance
- * Fast response time : typically less than 1.0 ps from 0 volt to $V_{BR(min)}$
- * Typical I_R less than $1\mu A$ above 10V

MECHANICAL DATA

- * Case : SMC Molded plastic
- * Epoxy : UL94V-O rate flame retardant
- * Lead : Lead Formed for Surface Mount
- * Polarity : Color band denotes cathode end except Bipolar.
- * Mounting position : Any
- * Weight : 0.21 gram

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



MAXIMUM RATINGS

Rating at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation ^{(1) (2)}	PPPM	Minimum 1500	W
Peak Forward Surge Current per Fig. 5 ⁽²⁾	IFSM	200	A
Peak Pulse Current on 10/1000μs waveform ⁽¹⁾	I _{PPM}	See Next Table	A
Typical Thermal Resistance , Junction to Ambient ⁽³⁾	R _{θJA}	75	°C/W
Operating Junction and Storage Temperature Range	T _J , T _{STG}	- 55 to + 150	°C

Notes :

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



SYNSEMI SEMICONDUCTOR

ELECTRICAL CHARACTERISTICS (Rating at 25°C ambient temperature unless otherwise specified)

Type No.		Breakdown Voltage @ $I_T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ IPPM
Uni-directional	Bi-directional	V_{BR} (V)		I_T	V_{WM}	I_D	IPPM	V_C
		Min.	Max.	(mA)	(V)	(μ A)	(A)	(V)
SMCJ5.0A	SMCJ5.0CA ⁽⁴⁾	6.40	7.07	10	5.0	1000	163.0	9.2
SMCJ6.0A	SMCJ6.0CA	6.67	7.37	10	6.0	1000	145.6	10.3
SMCJ6.5A	SMCJ6.5CA	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0A	SMCJ7.0CA	7.78	8.6	10	7.0	200	125.0	12.0
SMCJ7.5A	SMCJ7.5CA	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0A	SMCJ8.0CA	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5A	SMCJ8.5CA	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0A	SMCJ9.0CA	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10A	SMCJ10CA	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11A	SMCJ11CA	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12A	SMCJ12CA	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13A	SMCJ13CA	14.4	15.9	1.0	13	5.0	69.8	21.5
SMCJ14A	SMCJ14CA	15.6	17.2	1.0	14	5.0	64.7	23.2
SMCJ15A	SMCJ15CA	16.7	18.5	1.0	15	5.0	61.5	24.4
SMCJ16A	SMCJ16CA	17.8	19.7	1.0	16	5.0	57.7	26.0
SMCJ17A	SMCJ17CA	18.9	20.9	1.0	17	5.0	54.3	27.6
SMCJ18A	SMCJ18CA	20.0	22.1	1.0	18	5.0	51.4	29.2
SMCJ20A	SMCJ20CA	22.2	24.5	1.0	20	5.0	46.3	32.4
SMCJ22A	SMCJ22CA	24.4	26.9	1.0	22	5.0	42.3	35.5
SMCJ24A	SMCJ24CA	26.7	29.5	1.0	24	5.0	38.6	38.9
SMCJ26A	SMCJ26CA	28.9	31.9	1.0	26	5.0	35.6	42.1
SMCJ28A	SMCJ28CA	31.1	34.4	1.0	28	5.0	33.0	45.4
SMCJ30A	SMCJ30CA	33.3	36.8	1.0	30	5.0	31.0	48.4
SMCJ33A	SMCJ33CA	36.7	40.6	1.0	33	5.0	28.1	53.3
SMCJ36A	SMCJ36CA	40.0	44.2	1.0	36	5.0	25.8	58.1
SMCJ40A	SMCJ40CA	44.4	49.1	1.0	40	5.0	23.3	64.5
SMCJ43A	SMCJ43CA	47.8	52.8	1.0	43	5.0	21.6	69.4
SMCJ45A	SMCJ45CA	50.0	55.3	1.0	45	5.0	20.6	72.7
SMCJ48A	SMCJ48CA	53.3	58.9	1.0	48	5.0	19.4	77.4
SMCJ51A	SMCJ51CA	56.7	62.7	1.0	51	5.0	18.2	82.4
SMCJ54A	SMCJ54CA	60.0	66.3	1.0	54	5.0	17.2	87.1
SMCJ58A	SMCJ58CA	64.4	71.2	1.0	58	5.0	16.0	93.6
SMCJ60A	SMCJ60CA	66.7	73.7	1.0	60	5.0	15.5	96
SMCJ64A	SMCJ64CA	71.1	78.6	1.0	64	5.0	14.6	103
SMCJ70A	SMCJ70CA	77.8	86	1.0	70	5.0	13.3	113
SMCJ75A	SMCJ75CA	83.3	92.1	1.0	75	5.0	12.4	121
SMCJ78A	SMCJ78CA	86.7	95.8	1.0	78	5.0	11.9	126
SMCJ85A	SMCJ85CA	94.4	104	1.0	85	5.0	10.9	137
SMCJ90A	SMCJ90CA	100	111	1.0	90	5.0	10.3	146
SMCJ100A	SMCJ100CA	111	123	1.0	100	5.0	9.3	162
SMCJ110A	SMCJ110CA	122	135	1.0	110	5.0	8.5	177
SMCJ120A	SMCJ120CA	133	147	1.0	120	5.0	7.8	193
SMCJ130A	SMCJ130CA	144	159	1.0	130	5.0	7.2	209
SMCJ150A	SMCJ150CA	167	185	1.0	150	5.0	6.2	243
SMCJ160A	SMCJ160CA	178	197	1.0	160	5.0	5.8	259
SMCJ170A	SMCJ170CA	189	209	1.0	170	5.0	5.50	275
SMCJ188A	SMCJ188CA	209	231	1.0	188	5.0	4.60	328

Notes :

- (1) Pulse test : $t_p \leq 50$ ms.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) For bi-directional types have V_{WM} of 10 Volts and less , the I_D limit is doubled
- (4) For the bi-directional SMBJ5.0CA, the maximum V_{BR} is 7.25V
- (5) "SMCJ" will be omitted in marking on the diode.

RATING AND CHARACTERISTIC CURVES (SMCJ5.0A - SMCJ188CA)

FIG.1 - PULSE DERATING CURVE

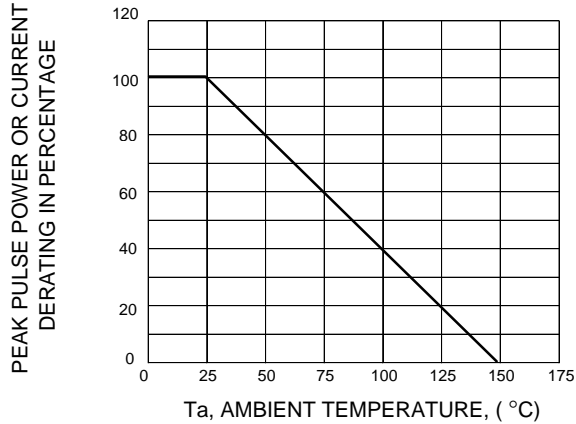


FIG.2 - TYPICAL JUNCTION CAPACITANCE

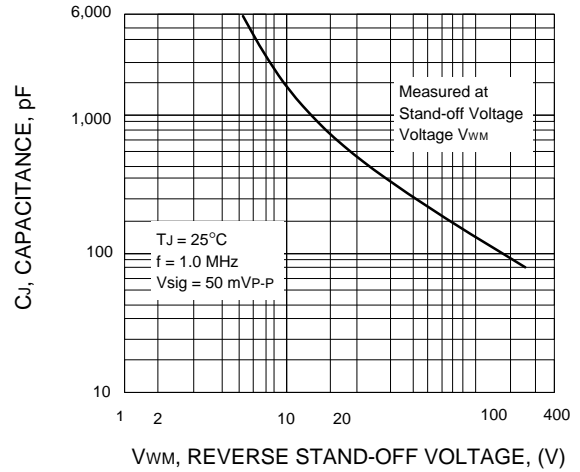


FIG.3 - PULSE WAVEFORM

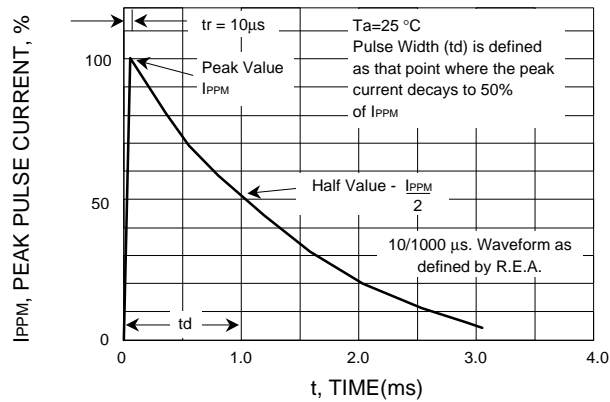


FIG.4 - PEAK PULSE POWER RATING CURVE

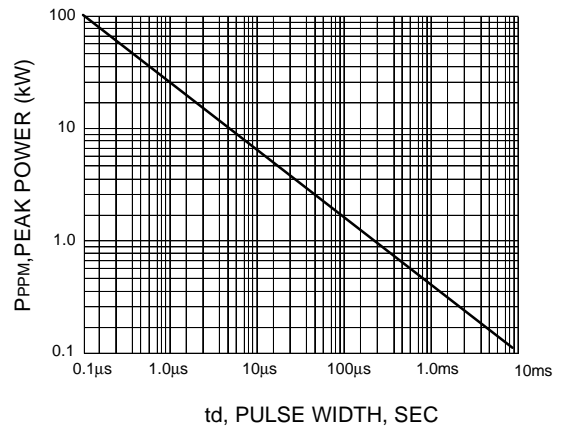


FIG.5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

