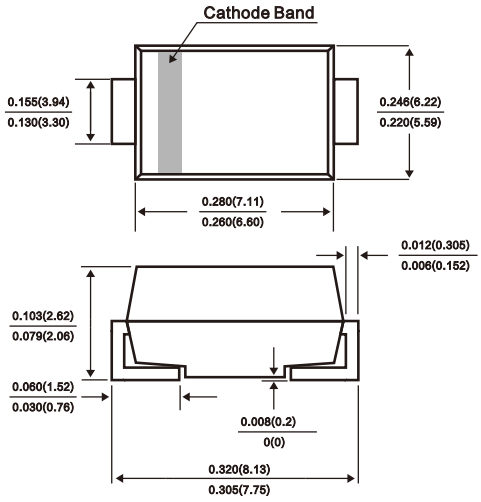
FEATURES

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

SMC(DO-214AB)



Dimensions in inches and (millimeters)

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

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation (1) (2)	P_{PPM}	Minimum 1500	W
Peak Forward Surge Current per Fig. 5 (2)	I_{FSM}	200	A
Maximum Instantaneous Forward Voltage at 50.0A for Unidirectional Only	V_F	3.5	Volts
Typical Thermal Resistance , Junction to Ambient (3)	$R_{\theta JA}$	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 Ta = 25 °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

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

DEVICE TYPE	DEVICE MARKING CODE		Breakdown Voltage @ I_T (1)			Working Peak Reverse Voltage	Maximum Reverse Leakage @ V_{WM}	Maximum Peak Pulse Surge Current	Maximum Clamping Voltage @ I_{PPM}
	UNI	BI	V_{BR} (V)		I_T	V_{WM}	I_D	I_{PPM}	V_C
			Min.	Max.	(mA)	(V)	(μA)	(A)	(V)
SMCJ5.0A(CA)	GDE	GDE	6.40	7.07	10	5.0	1000	163.0	9.2
SMCJ6.0A(CA)	GDG	GDG	6.67	7.37	10	6.0	1000	145.6	10.3
SMCJ6.5A(CA)	GDK	BDK	7.22	7.98	10	6.5	500	133.9	11.2
SMCJ7.0A(CA)	GDM	GDM	7.78	8.6	10	7.0	200	125.0	12.0
SMCJ7.5A(CA)	GDP	BDP	8.33	9.21	1.0	7.5	100	116.3	12.9
SMCJ8.0A(CA)	GDR	BDR	8.89	9.83	1.0	8.0	50	110.3	13.6
SMCJ8.5A(CA)	GDT	BDT	9.44	10.4	1.0	8.5	20	104.2	14.4
SMCJ9.0A(CA)	GDV	BDV	10.0	11.1	1.0	9.0	10	97.4	15.4
SMCJ10A(CA)	GDX	BDX	11.1	12.3	1.0	10	5.0	88.2	17.0
SMCJ11A(CA)	GDZ	GDZ	12.2	13.5	1.0	11	5.0	82.4	18.2
SMCJ12A(CA)	GEE	BEE	13.3	14.7	1.0	12	5.0	75.4	19.9
SMCJ13A(CA)	GEG	GEG	14.4	15.9	1.0	13	5.0	69.8	21.5
SMCJ14A(CA)	GEK	BEK	15.6	17.2	1.0	14	5.0	64.7	23.2
SMCJ15A(CA)	GEM	BEM	16.7	18.5	1.0	15	5.0	61.5	24.4
SMCJ16A(CA)	GEP	GEP	17.8	19.7	1.0	16	5.0	57.7	26.0
SMCJ17A(CA)	GER	GER	18.9	20.9	1.0	17	5.0	54.3	27.6
SMCJ18A(CA)	GET	BET	20.0	22.1	1.0	18	5.0	51.4	29.2
SMCJ20A(CA)	GEV	BEV	22.2	24.5	1.0	20	5.0	46.3	32.4
SMCJ22A(CA)	GEX	BEX	24.4	26.9	1.0	22	5.0	42.3	35.5
SMCJ24A(CA)	GEZ	BEZ	26.7	29.5	1.0	24	5.0	38.6	38.9
SMCJ26A(CA)	GFE	BFE	28.9	31.9	1.0	26	5.0	35.6	42.1
SMCJ28A(CA)	GFG	BFG	31.1	34.4	1.0	28	5.0	33.0	45.4
SMCJ30A(CA)	GFK	BFK	33.3	36.8	1.0	30	5.0	31.0	48.4
SMCJ33A(CA)	GFM	BFM	36.7	40.6	1.0	33	5.0	28.1	53.3
SMCJ36A(CA)	GFP	BFP	40.0	44.2	1.0	36	5.0	25.8	58.1
SMCJ40A(CA)	GFR	BFR	44.4	49.1	1.0	40	5.0	23.3	64.5
SMCJ43A(CA)	GFT	BFT	47.8	52.8	1.0	43	5.0	21.6	69.4
SMCJ45A(CA)	GFV	GFV	50.0	55.3	1.0	45	5.0	20.6	72.7
SMCJ48A(CA)	GFX	GFX	53.3	58.9	1.0	48	5.0	19.4	77.4
SMCJ51A(CA)	GFZ	GFZ	56.7	62.7	1.0	51	5.0	18.2	82.4
SMCJ54A(CA)	GGE	GGE	60.0	66.3	1.0	54	5.0	17.2	87.1
SMCJ58A(CA)	GGG	GGG	64.4	71.2	1.0	58	5.0	16.0	93.6
SMCJ60A(CA)	GGK	GGK	66.7	73.7	1.0	60	5.0	15.5	96
SMCJ64A(CA)	GGM	GGM	71.1	78.6	1.0	64	5.0	14.6	103
SMCJ70A(CA)	GGP	GGP	77.8	86	1.0	70	5.0	13.3	113
SMCJ75A(CA)	GGR	GGR	83.3	92.1	1.0	75	5.0	12.4	121
SMCJ78A(CA)	GGT	GGT	86.7	95.8	1.0	78	5.0	11.9	126
SMCJ85A(CA)	GGV	GGV	94.4	104	1.0	85	5.0	10.9	137
SMCJ90A(CA)	GGX	GGX	100	111	1.0	90	5.0	10.3	146
SMCJ100A(CA)	GGZ	GGZ	111	123	1.0	100	5.0	9.3	162
SMCJ110A(CA)	GHE	GHE	122	135	1.0	110	5.0	8.5	177
SMCJ120A(CA)	GHG	GHG	133	147	1.0	120	5.0	7.8	193
SMCJ130A(CA)	GHK	GHK	144	159	1.0	130	5.0	7.2	209
SMCJ150A(CA)	GHM	GHM	167	185	1.0	150	5.0	6.2	243
SMCJ160A(CA)	GHP	GHP	178	197	1.0	160	5.0	5.8	259
SMCJ170A(CA)	GHR	GHR	189	209	1.0	170	5.0	5.50	275
SMCJ188A(CA)	GHS	GHS	209	231	1.0	188	5.0	4.60	328

Notes :

(1) Pulse test : tp < 50ms.
(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.

FIG.1 - PULSE DERATING CURVE

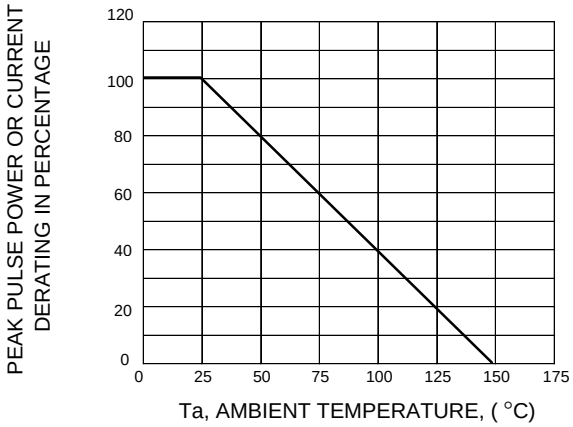


FIG.2 - TYPICAL JUNCTION CAPACITANCE

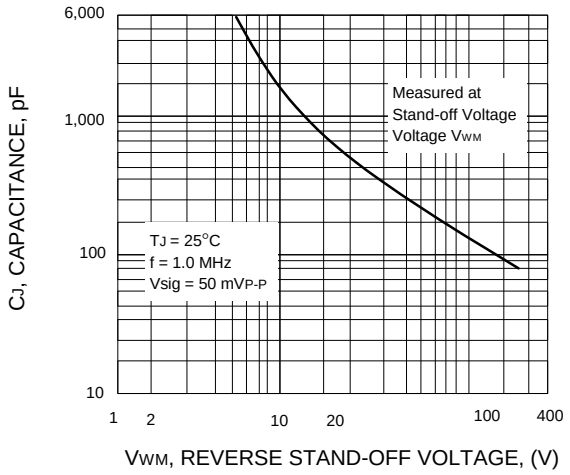


FIG.3 - PULSE WAVEFORM

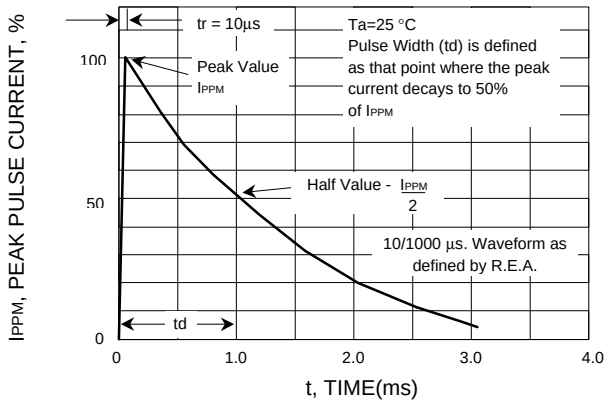


FIG.4 - PEAK PULSE POWER RATING CURVE

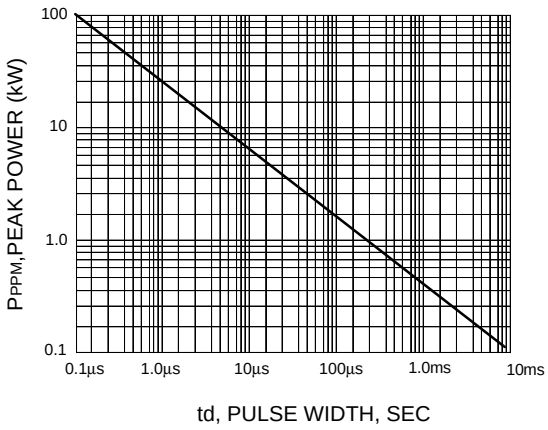
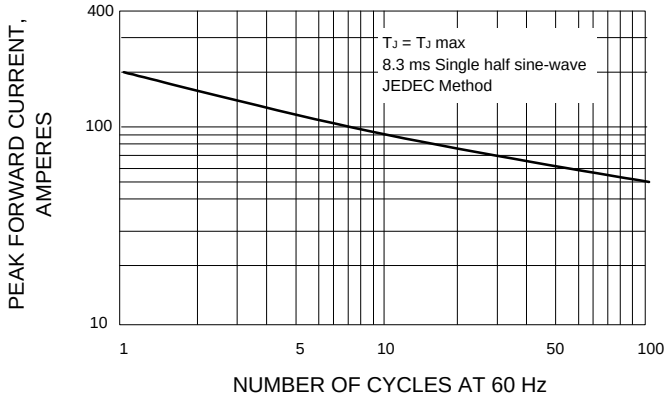



FIG.5 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT