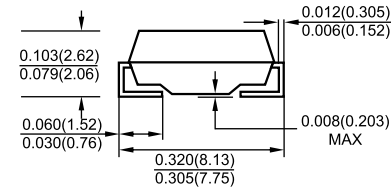
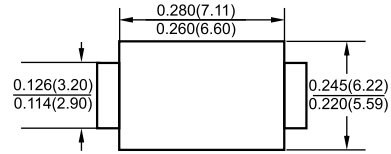




SMC/DO-214AB

Features

- ✧ For surface mounted application
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Excellent clamping capability
- ✧ Fast response time: Typically less than 1.0ps from 0 volt to BV min.
- ✧ Typical I_R less than $1 \mu A$ above 10V
- ✧ High temperature soldering guaranteed: $260^\circ C / 10$ seconds at terminals
- ✧ Plastic material used carries Underwriters Laboratory Flammability Classification 94V-0
- ✧ 1500 watts peak pulse power capability with a 10 X 1000 us waveform by 0.01% duty cycle



Dimensions in inches and (millimeters)

Mechanical Data

- ✧ Case: Molded plastic
- ✧ Terminals: Pure tin plated lead free.
- ✧ Polarity: Indicated by cathode band

Maximum Ratings and Electrical Characteristics

Rating at $25^\circ C$ ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A=25^\circ C$, $T_p=1ms$ (Note 1)	P_{PK}	Minimum 1500	Watts
Steady State Power Dissipation	P_d	6.5	Watts
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2, 3) - Unidirectional Only	I_{FSM}	200	Amps
Maximum Instantaneous Forward Voltage at 100.0A for Unidirectional Only (Note 4)	V_F	3.5 / 5.0	Volts
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	$^\circ C$

- Notes: 1. Non-repetitive Current Pulse Per Fig. 3 and Derated above $T_A=25^\circ C$ Per Fig. 2.
 2. Mounted on $8.0mm^2$ (.013mm Thick) Copper Pads to Each Terminal.
 3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minute Maximum.
 4. $V_F=3.5V$ on SMCJ5.0 thru SMCJ90 Devices and $V_F=5.0V$ on SMCJ100 thru SMCJ170 Devices.

Devices for Bipolar Applications

1. For Bidirectional Use C or CA Suffix for Types SMCJ5.0 through Types SMCJ170.
2. Electrical Characteristics Apply in Both Directions.

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

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (uA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
SMCJ5.0	SMCJ5.0C	GDD	BDD	6.40	7.30	10	800	5.0	156.25	9.6
SMCJ5.0A	SMCJ5.0CA	GDE	BDE	6.40	7.00	10	800	5.0	163.04	9.2
SMCJ6.0	SMCJ6.0C	GDF	BDF	6.67	8.15	10	800	6.0	131.58	11.4
SMCJ6.0A	SMCJ6.0CA	GDG	BDG	6.67	7.37	10	800	6.0	145.63	10.3
SMCJ6.5	SMCJ6.5C	GDH	BDH	7.22	8.82	10	500	6.5	121.95	12.3
SMCJ6.5A	SMCJ6.5CA	GDK	BDK	7.22	7.98	10	500	6.5	133.93	11.2
SMCJ7.0	SMCJ7.0C	GDL	BDL	7.78	9.51	10	200	7.0	112.78	13.3
SMCJ7.0A	SMCJ7.0CA	GDM	BDM	7.78	8.60	10	200	7.0	125.00	12.0
SMCJ7.5	SMCJ7.5C	GDN	BDN	8.33	10.20	1	100	7.5	104.90	14.3
SMCJ7.5A	SMCJ7.5CA	GDP	BDP	8.33	9.21	1	100	7.5	116.28	12.9
SMCJ8.0	SMCJ8.0C	GDQ	BDQ	8.89	10.90	1	50	8.0	100.00	15.0
SMCJ8.0A	SMCJ8.0CA	GDR	BDR	8.89	9.83	1	50	8.0	110.29	13.6
SMCJ8.5	SMCJ8.5C	GDS	BDS	9.44	11.50	1	20	8.5	94.34	15.9
SMCJ8.5A	SMCJ8.5CA	GDT	BDT	9.44	10.40	1	20	8.5	104.17	14.4
SMCJ9.0	SMCJ9.0C	GDU	BDU	10.00	12.20	1	10	9.0	88.76	16.9
SMCJ9.0A	SMCJ9.0CA	GDV	BDV	10.00	11.10	1	10	9.0	97.40	15.4
SMCJ10	SMCJ10C	GDW	BDW	11.10	13.60	1	5	10.0	79.79	18.8
SMCJ10A	SMCJ10CA	GDX	BDX	11.10	12.30	1	5	10.0	88.24	17.0
SMCJ11	SMCJ11C	GDY	BDY	12.20	14.90	1	1	11.0	74.63	20.1
SMCJ11A	SMCJ11CA	GDZ	BDZ	12.20	13.50	1	1	11.0	82.42	18.2
SMCJ12	SMCJ12C	GED	BED	13.30	16.30	1	1	12.0	68.18	22.0
SMCJ12A	SMCJ12CA	GEE	BEE	13.30	14.70	1	1	12.0	75.38	19.9
SMCJ13	SMCJ13C	GEF	BEF	14.40	17.60	1	1	13.0	63.03	23.8
SMCJ13A	SMCJ13CA	GEG	BEG	14.40	15.90	1	1	13.0	69.77	21.5
SMCJ14	SMCJ14C	GEH	BEH	15.60	19.10	1	1	14.0	58.14	25.8
SMCJ14A	SMCJ14CA	GEK	BEK	15.60	17.20	1	1	14.0	64.66	23.2
SMCJ15	SMCJ15C	GEL	BEL	16.70	20.40	1	1	15.0	55.76	26.9
SMCJ15A	SMCJ15CA	GEM	BEM	16.70	18.50	1	1	15.0	61.48	24.4
SMCJ16	SMCJ16C	GEN	BEN	17.80	21.80	1	1	16.0	52.08	28.8
SMCJ16A	SMCJ16CA	GEP	BEP	17.80	19.70	1	1	16.0	57.69	26.0
SMCJ17	SMCJ17C	GEQ	BEQ	18.90	23.10	1	1	17.0	49.18	30.5
SMCJ17A	SMCJ17CA	GER	BER	18.90	20.90	1	1	17.0	54.35	27.6
SMCJ18	SMCJ18C	GES	BES	20.00	24.40	1	1	18.0	46.58	32.2
SMCJ18A	SMCJ18CA	GET	BET	20.00	22.10	1	1	18.0	51.37	29.2
SMCJ19	SMCJ19C	GEA	BEA	21.13	25.76	1	1	19.0	44.10	34.0
SMCJ19A	SMCJ19CA	GEB	BEB	21.10	23.30	1	1	19.0	48.73	30.8
SMCJ20	SMCJ20C	GEU	BEU	22.20	27.10	1	1	20.0	41.90	35.8
SMCJ20A	SMCJ20CA	GEV	BEV	22.20	24.50	1	1	20.0	46.30	32.4
SMCJ22	SMCJ22C	GEW	BEW	24.40	29.80	1	1	22.0	38.07	39.4
SMCJ22A	SMCJ22CA	GEX	BEX	24.40	26.90	1	1	22.0	42.25	35.5
SMCJ24	SMCJ24C	GEY	BEY	26.70	32.60	1	1	24.0	34.88	43.0
SMCJ24A	SMCJ24CA	GEZ	BEZ	26.70	29.50	1	1	24.0	38.56	38.9
SMCJ26	SMCJ26C	GFD	BFD	28.90	35.30	1	1	26.0	32.19	46.6
SMCJ26A	SMCJ26CA	GFE	BFE	28.90	31.90	1	1	26.0	35.63	42.1
SMCJ28	SMCJ28C	GFF	BFF	31.10	38.00	1	1	28.0	30.00	50.0
SMCJ28A	SMCJ28CA	GFG	BFG	31.10	34.40	1	1	28.0	33.04	45.4
SMCJ30	SMCJ30C	GFH	BFH	33.30	40.70	1	1	30.0	28.04	53.5
SMCJ30A	SMCJ30CA	GFK	BFK	33.30	36.80	1	1	30.0	30.99	48.4
SMCJ33	SMCJ33C	GFL	BFL	36.70	44.90	1	1	33.0	25.42	59.0
SMCJ33A	SMCJ33CA	GFM	BFM	36.70	40.60	1	1	33.0	28.14	53.3
SMCJ36	SMCJ36C	GFN	BFN	40.00	48.90	1	1	36.0	23.33	64.3
SMCJ36A	SMCJ36CA	GFP	BFP	40.00	44.20	1	1	36.0	25.82	58.1
SMCJ40	SMCJ40C	GFQ	BFQ	44.40	54.30	1	1	40.0	21.01	71.4
SMCJ40A	SMCJ40CA	GFR	BFR	44.40	49.10	1	1	40.0	23.26	64.5

Note:

1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double



SMCJ SERIES

1500Watts Surface Mount Transient Voltage Suppressor

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

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage I_R @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @ I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
SMCJ43	SMCJ43C	GFS	BFS	47.80	58.40	1	1	43.0	19.56	76.7
SMCJ43A	SMCJ43CA	GFT	BFT	47.80	52.80	1	1	43.0	21.61	69.4
SMCJ45	SMCJ45C	GFU	BFU	50.00	61.10	1	1	45.0	18.68	80.3
SMCJ45A	SMCJ45CA	GFV	BFV	50.00	55.30	1	1	45.0	20.63	72.7
SMCJ48	SMCJ48C	GFW	BFW	53.30	65.10	1	1	48.0	17.54	85.5
SMCJ48A	SMCJ48CA	GFX	BFX	53.30	58.90	1	1	48.0	19.38	77.4
SMCJ51	SMCJ51C	GFY	BFY	56.70	69.30	1	1	51.0	16.47	91.1
SMCJ51A	SMCJ51CA	GFZ	BFZ	56.70	62.70	1	1	51.0	18.20	82.4
SMCJ54	SMCJ54C	GGD	BGD	60.00	73.30	1	1	54.0	15.58	96.3
SMCJ54A	SMCJ54CA	GGE	BGE	60.00	66.30	1	1	54.0	17.22	87.1
SMCJ58	SMCJ58C	GGF	BGF	64.40	78.70	1	1	58.0	14.56	103.0
SMCJ58A	SMCJ58CA	GGG	BGG	64.40	71.20	1	1	58.0	16.03	93.6
SMCJ60	SMCJ60C	GGH	BGH	66.70	81.50	1	1	60.0	14.02	107.0
SMCJ60A	SMCJ60CA	G GK	B GK	66.70	73.70	1	1	60.0	15.50	96.8
SMCJ64	SMCJ64C	GGL	BGL	71.10	86.90	1	1	64.0	13.16	114.0
SMCJ64A	SMCJ64CA	GGM	BGM	71.10	78.60	1	1	64.0	14.56	103.0
SMCJ70	SMCJ70C	GGN	BGN	77.80	95.10	1	1	70.0	12.00	125.0
SMCJ70A	SMCJ70CA	G GP	B GP	77.80	86.00	1	1	70.0	13.27	113.0
SMCJ75	SMCJ75C	GGQ	BGQ	83.30	102.00	1	1	75.0	11.19	134.0
SMCJ75A	SMCJ75CA	G GR	B GR	83.30	92.10	1	1	75.0	12.40	121.0
SMCJ78	SMCJ78C	GG S	B GS	86.70	106.00	1	1	78.0	10.79	139.0
SMCJ78A	SMCJ78CA	G GT	B GT	86.70	95.80	1	1	78.0	11.90	126.0
SMCJ80	SMCJ80C	G GA	B GA	88.96	108.80	1	1	80.0	10.47	143.2
SMCJ80A	SMCJ80CA	G GB	B GB	88.80	97.60	1	1	80.0	11.57	129.6
SMCJ85	SMCJ85C	G GU	B GU	94.40	115.00	1	1	85.0	9.93	151.0
SMCJ85A	SMCJ85CA	G GV	B GV	94.40	104.00	1	1	85.0	10.95	137.0
SMCJ90	SMCJ90C	G GW	B GW	100.00	122.00	1	1	90.0	9.38	160.0
SMCJ90A	SMCJ90CA	G GX	B GX	100.00	111.00	1	1	90.0	10.27	146.0
SMCJ100	SMCJ100C	G GY	B GY	111.00	136.00	1	1	100.0	8.38	179.0
SMCJ100A	SMCJ100CA	G GZ	B GZ	111.00	123.00	1	1	100.0	9.26	162.0
SMCJ110	SMCJ110C	G HD	B HD	122.00	149.00	1	1	110.0	7.65	196.0
SMCJ110A	SMCJ110CA	G HE	B HE	122.00	135.00	1	1	110.0	8.47	177.0
SMCJ120	SMCJ120C	G HF	B HF	133.00	163.00	1	1	120.0	7.01	214.0
SMCJ120A	SMCJ120CA	G HG	B HG	133.00	147.00	1	1	120.0	7.77	193.0
SMCJ130	SMCJ130C	G HH	B HH	144.00	176.00	1	1	130.0	6.49	231.0
SMCJ130A	SMCJ130CA	G HK	B HK	144.00	159.00	1	1	130.0	7.18	209.0
SMCJ140	SMCJ140C	G HA	B HA	155.68	190.40	1	1	140.0	5.99	250.6
SMCJ140A	SMCJ140CA	G HB	B HB	155.00	171.00	1	1	140.0	6.61	226.8
SMCJ150	SMCJ150C	G HL	B HL	167.00	204.00	1	1	150.0	5.60	268.0
SMCJ150A	SMCJ150CA	G HM	B HM	167.00	185.00	1	1	150.0	6.17	243.0
SMCJ160	SMCJ160C	G HN	B HN	178.00	218.00	1	1	160.0	5.23	287.0
SMCJ160A	SMCJ160CA	G HP	B HP	178.00	197.00	1	1	160.0	5.79	259.0
SMCJ170	SMCJ170C	G HQ	B HQ	189.00	231.00	1	1	170.0	4.93	304.0
SMCJ170A	SMCJ170CA	G HR	B HR	189.00	209.00	1	1	170.0	5.45	275.0
SMCJ180	SMCJ180C	G HS	B HS	200.16	244.80	1	1	180.0	4.66	322.2
SMCJ180A	SMCJ180CA	G HT	B HT	200.00	220.00	1	1	180.0	5.14	291.6
SMCJ190	SMCJ190C	G HU	B HU	211.28	258.40	1	1	190.0	4.41	340.1
SMCJ190A	SMCJ190CA	G HV	B HV	211.00	232.00	1	1	190.0	4.87	307.8
SMCJ200A	SMCJ200CA	G HW	B HW	224.00	247.00	1	1	200.0	4.60	324.0
SMCJ220A	SMCJ220CA	G HX	B HX	246.00	272.00	1	1	220.0	4.20	356.0
SMCJ250A	SMCJ250CA	G HZ	B HZ	279.00	309.00	1	1	250.0	3.70	405.0
SMCJ300A	SMCJ300CA	G JE	B JE	335.00	371.00	1	1	300.0	3.10	486.0
SMCJ350A	SMCJ350CA	G JG	B JG	391.00	432.00	1	1	350.0	2.60	567.0
SMCJ400A	SMCJ400CA	G JK	B JK	447.00	494.00	1	1	400.0	2.30	648.0
SMCJ440A	SMCJ440CA	G JM	B JM	492.00	543.00	1	1	440.0	2.10	713.0

Ratings and Characteristics Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

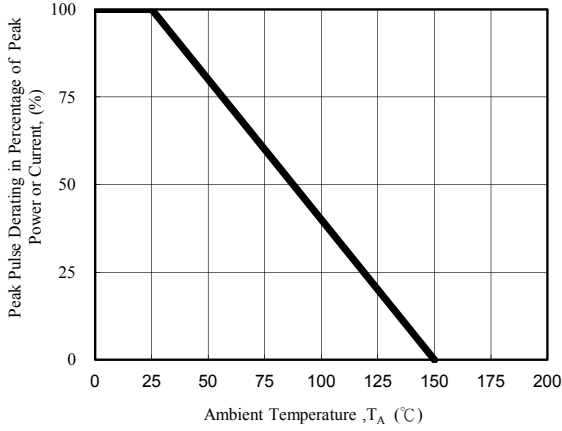


Fig. 1 - Pulse Derating Curve

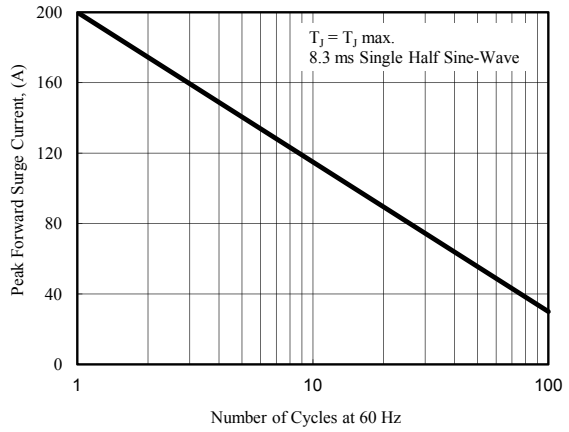


Fig. 2 - Maximum Non-Repetitive Surge Current

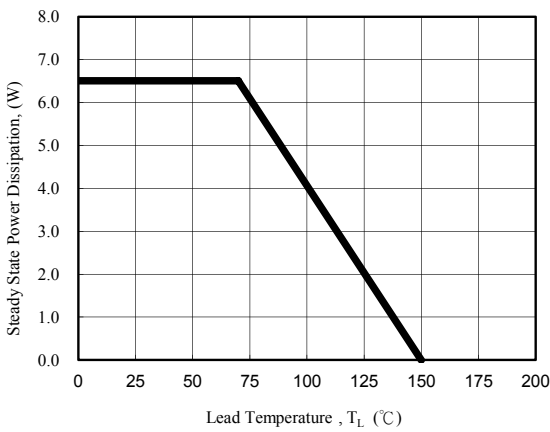


Fig. 3 - Steady State Power Derating Curve

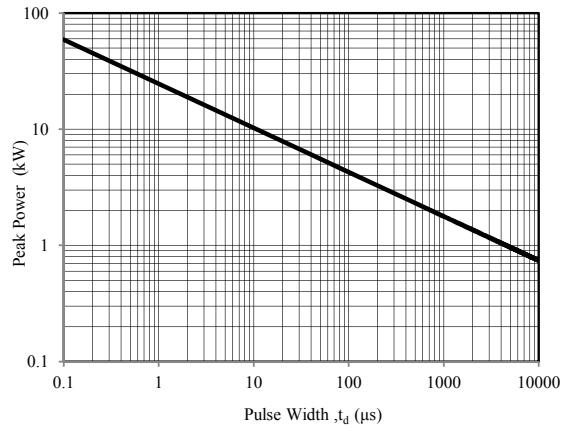


Fig. 4 - Peak Pulse Power Rating Curve

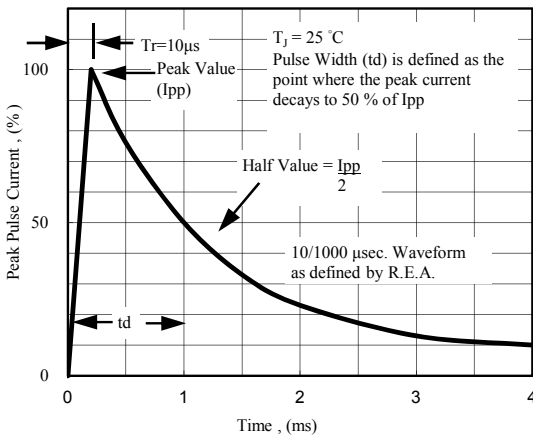


Fig. 5 - Pulse Waveform

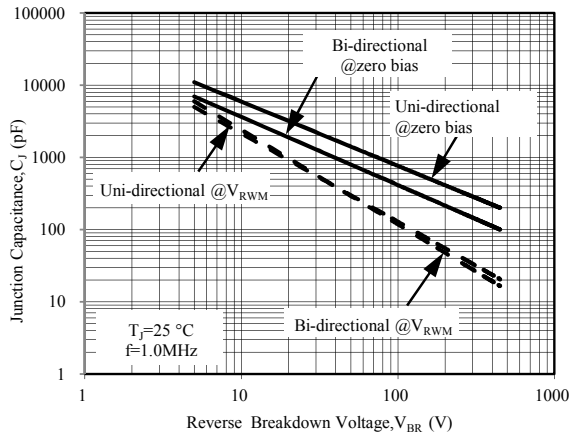


Fig. 6 - Typical Junction Capacitance