SMCJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS

GW



FEATURES

* For surface mount application
* Built-in strain relief
* Excellent clamping capability
* Low profile package
* Fast response time: Typically less than 1.0ps from 0 volt to BV min.
* Typical I_R less than 1 A above 10V

MECHANICAL DATA

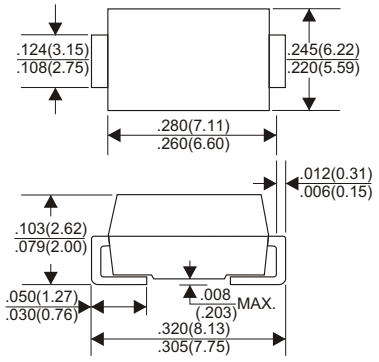
* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Lead: Solderable per MIL-STD-202, method 208 guranteed
* Polarity: Color band denotes cathode end except Bidirectional
* Mounting position: Any

VOLTAGE RANGE

5.0 to 440 Volts

1500 Watts Peak Power

DO-214AB



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature uniess otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

RATINGS	SYMBOL	VALUE	UNITS
Peak Power Dissipation at T_A=25°C, T_P=1ms(NOTE 1)	P_{PK}	Minimum 1500	Watts
Power Dissipation on infinite heatsink at T_L=75°C	P_D	5.0	Watts
Peak Forward Surge Current at 8.3ms Single Half Sine-Wave superimposed on rated load (JEDEC method) (NOTE 3)	I_{FSM}	200	Amps
Maximum Instantenous Forward Voltage at 100A for Unidirectional only	V_F	3.5/5.0	Volts
Operating 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°C per Fig. 2.
2. 8.3ms single half sine-wave, duty cycle = 4 pulses per minute maximum.
3. V_F<3.5V for devices of V_{BR}<200V and V_F<5.0V for devices of V_{BR}>201V.

DEVICES FOR BIPOLAR APPLICATIONS

1. For Bidirectional use C or CA Suffix for types SMCJ5.0 thru SMCJ440.
2. Electrical characteristics apply in both directions.

RATING AND CHARACTERISTIC CURVES (SMCJ SERIES)

FIG.1-PEAK PULSE POWER DERATING CURVE

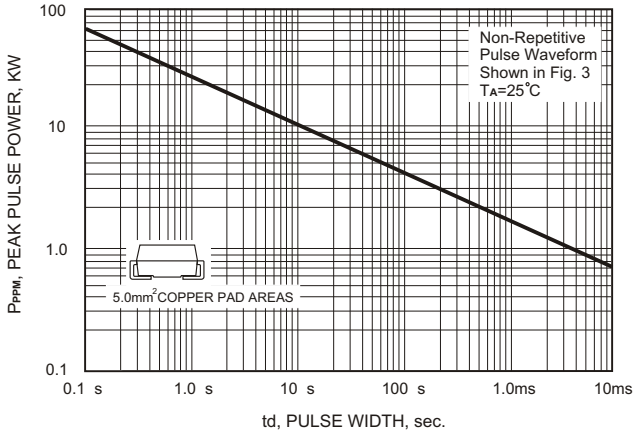


FIG.2-PULSE DERATING CURVE

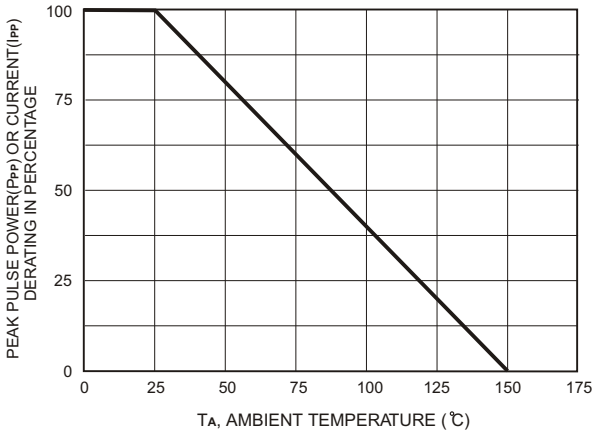


FIG.3-PULSE WAVE FORM

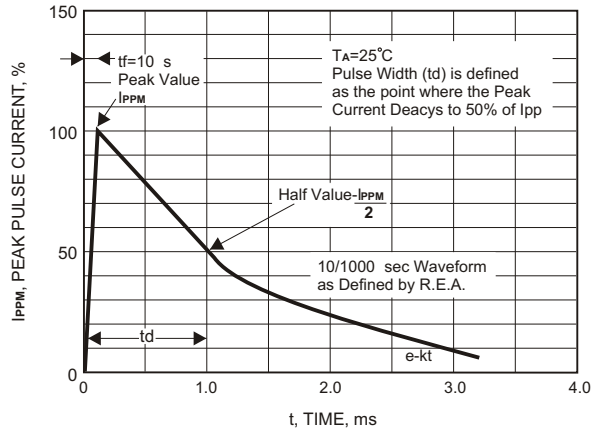


FIG.4-TYPICAL JUNCTION CAPACITANCE

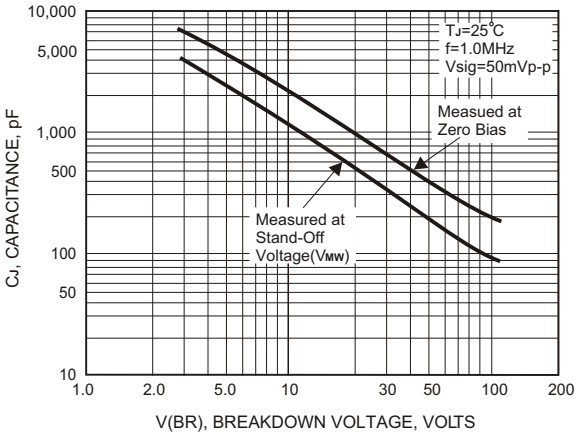


FIG.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

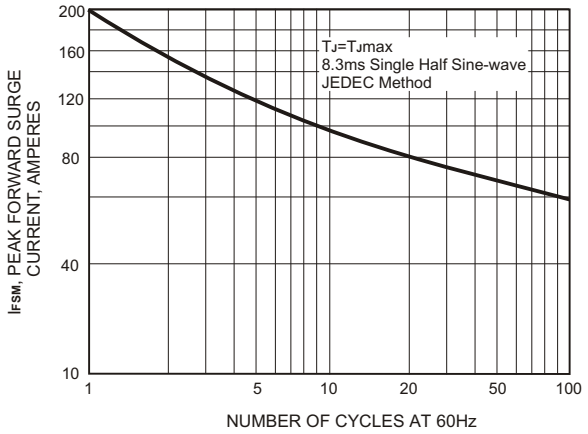
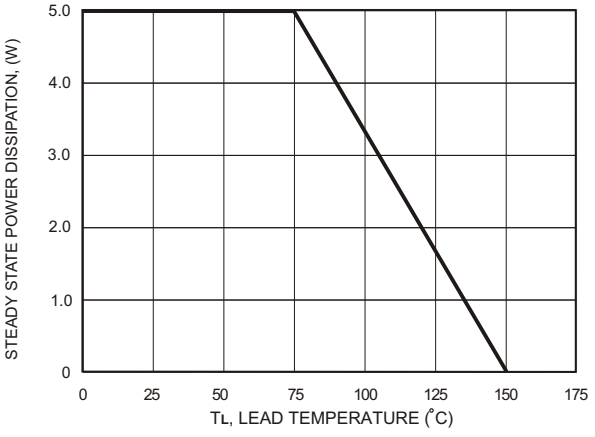


FIG.6-STEADY STATE POWER DERATING CURVE



1500 Watt Surface Mount TVS

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

1500 Watt Surface Mount TVS

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T			Maximum Reverse Leakage @ VR	Maximum Peak Pulse Current	Maximum Clamping Voltage @ Ipp
		Uni	Bi	VR (V)	Min (V)	Max (V)	I_T (mA)	IR (μA)	Ipp (A)	Vc (V)
SMCJ43	SMCJ43C	GFS	BFS	43.0	47.80	58.40	1	5	19.56	76.7
SMCJ43A	SMCJ43CA	GFT	BFT	43.0	47.80	52.80	1	5	21.61	69.4
SMCJ45	SMCJ45C	GFU	BFU	45.0	50.00	61.10	1	5	18.68	80.3
SMCJ45A	SMCJ45CA	GFV	BFV	45.0	50.00	55.30	1	5	20.63	72.7
SMCJ48	SMCJ48C	GFW	BFW	48.0	53.30	65.10	1	5	17.54	85.5
SMCJ48A	SMCJ48CA	GFX	BFX	48.0	53.30	58.90	1	5	19.38	77.4
SMCJ51	SMCJ51C	GFY	BFY	51.0	56.70	69.30	1	5	16.47	91.1
SMCJ51A	SMCJ51CA	GFZ	BFZ	51.0	56.70	62.70	1	5	18.20	82.4
SMCJ54	SMCJ54C	GGD	BGD	54.0	60.00	73.30	1	5	15.58	96.3
SMCJ54A	SMCJ54CA	GGE	BGE	54.0	60.00	66.30	1	5	17.22	87.1
SMCJ58	SMCJ58C	GGF	BGF	58.0	64.40	78.70	1	5	14.56	103.0
SMCJ58A	SMCJ58CA	GGG	BGG	58.0	64.40	71.20	1	5	16.03	93.6
SMCJ60	SMCJ60C	GGH	BGH	60.0	66.70	81.50	1	5	14.02	107.0
SMCJ60A	SMCJ60CA	GGK	BGK	60.0	66.70	73.70	1	5	15.50	96.8
SMCJ64	SMCJ64C	GGL	BGL	64.0	71.10	86.40	1	5	13.16	114.0
SMCJ64A	SMCJ64CA	GGM	BGM	64.0	71.10	78.60	1	5	14.56	103.0
SMCJ70	SMCJ70C	GGN	BGN	70.0	77.80	95.10	1	5	12.00	125.0
SMCJ70A	SMCJ70CA	GGP	BGP	70.0	77.80	86.00	1	5	13.27	113.0
SMCJ75	SMCJ75C	GGQ	BGQ	75.0	83.30	102.00	1	5	11.19	134.0
SMCJ75A	SMCJ75CA	GGR	BGR	75.0	83.30	92.10	1	5	12.40	121.0
SMCJ78	SMCJ78C	GGS	BGS	78.0	86.70	106.00	1	5	10.79	139.0
SMCJ78A	SMCJ78CA	GGT	BGT	78.0	86.70	95.80	1	5	11.90	126.0
SMCJ85	SMCJ85C	GGU	BGU	85.0	94.40	115.00	1	5	9.93	151.0
SMCJ85A	SMCJ85CA	GGV	BGV	85.0	94.40	104.00	1	5	10.95	137.0
SMCJ90	SMCJ90C	GGW	BGW	90.0	100.00	122.00	1	5	9.38	160.0
SMCJ90A	SMCJ90CA	GGX	BGX	90.0	100.00	111.00	1	5	10.27	146.0
SMCJ100	SMCJ100C	GGY	BGY	100.0	111.00	136.00	1	5	8.38	179.0
SMCJ100A	SMCJ100CA	GGZ	BGZ	100.0	111.00	123.00	1	5	9.26	162.0
SMCJ110	SMCJ110C	GHD	BHD	110.0	122.00	149.00	1	5	7.65	196.0
SMCJ110A	SMCJ110CA	GHE	BHE	110.0	122.00	135.00	1	5	8.47	177.0
SMCJ120	SMCJ120C	GHF	BHF	120.0	133.00	163.00	1	5	7.01	214.0
SMCJ120A	SMCJ120CA	GHG	BHG	120.0	133.00	147.00	1	5	7.77	193.0
SMCJ130	SMCJ130C	GHH	BHH	130.0	144.00	176.00	1	5	6.49	231.0
SMCJ130A	SMCJ130CA	GHK	BHK	130.0	144.00	159.00	1	5	7.18	209.0
SMCJ150	SMCJ150C	GHL	BHL	150.0	167.00	204.00	1	5	5.60	268.0
SMCJ150A	SMCJ150CA	GHM	BHM	150.0	167.00	185.00	1	5	6.17	243.0
SMCJ160	SMCJ160C	GHN	BHN	160.0	178.00	218.00	1	5	5.23	287.0
SMCJ160A	SMCJ160CA	GHP	BHP	160.0	178.00	197.00	1	5	5.79	259.0
SMCJ170	SMCJ170C	GHQ	BHQ	170.0	189.00	231.00	1	5	4.93	304.0
SMCJ170A	SMCJ170CA	GHR	BHR	170.0	189.00	209.00	1	5	5.45	275.0
SMCJ180	SMCJ180C	GHS	BHS	180.0	200.00	244.00	1	5	4.66	322.2
SMCJ180A	SMCJ180CA	GHT	BHT	180.0	200.00	220.00	1	5	5.14	291.6
SMCJ190	SMCJ190C	GHU	BHU	190.0	211.00	258.00	1	5	4.41	340.1
SMCJ190A	SMCJ190CA	GHV	BHV	190.0	211.00	232.00	1	5	4.87	307.8
SMCJ200A	SMCJ200CA	GHW	BHW	200.0	224.00	247.00	1	5	4.63	324.0
SMCJ220A	SMCJ220CA	GHX	BHX	220.0	246.00	272.00	1	5	4.21	356.0
SMCJ250A	SMCJ250CA	GHZ	BHZ	250.0	279.00	309.00	1	5	3.70	405.0
SMCJ300A	SMCJ300CA	GJE	BJE	300.0	335.00	371.00	1	5	3.09	486.0
SMCJ350A	SMCJ350CA	GJG	BJG	350.0	391.00	432.00	1	5	2.65	567.0
SMCJ400A	SMCJ400CA	GJK	BJK	400.0	447.00	494.00	1	5	2.31	648.0
SMCJ440A	SMCJ440CA	GJM	BJM	440.0	492.00	543.00	1	5	2.10	713.0