Working Voltage: 5.0 to 440 V
Peak Pulse Power: 1500 W

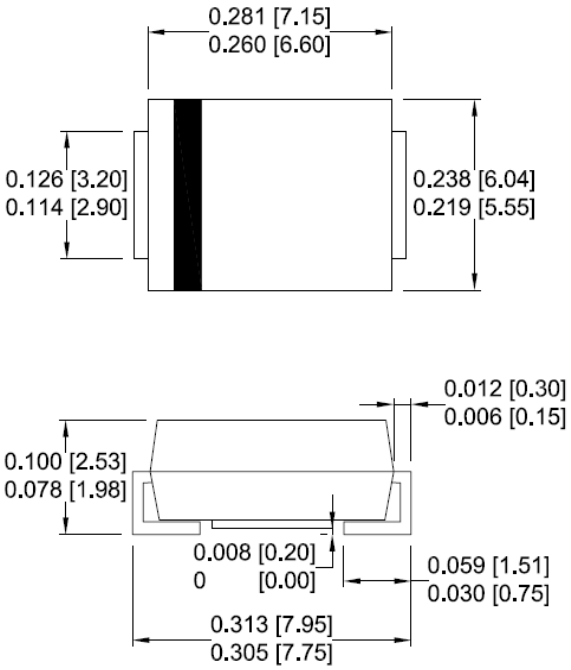
Features

- Glass passivated chip
- 1500 W peak pulse power capability with a 10/1000 μs waveform, repetitive rate (duty cycle):0.01 %
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

- Case: Molded plastic
- Epoxy: UL 94V-0 rate flame retardant
- Lead: Solderable per MIL-STD-750, method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any

SMC/ DO-214AB



Dimensions: inch[mm]

Maximum Ratings(T_A=25℃ unless otherwise noted)

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000μs waveform(1)	P_{PP}	1500	W
Peak pulse current wih a 10/1000μs waveform(1)	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at T_L = 75 °C	P_D	6.5	W
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(2)	I_{FSM}	200	A
Maximum instantaneous forward voltage at 100 A for unidirectional only(3)	V_F	3.5/5.0	V
Operating junction and storage temperature range	T_J, T_{STG}	–55 to +150	°C

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above T_A= 25 °C per Fig.1

(2)Measured on 8.3 ms single half sine-wave or equivalent square 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

Ratings and Characteristics Curves (T_A=25℃ unless otherwise noted)

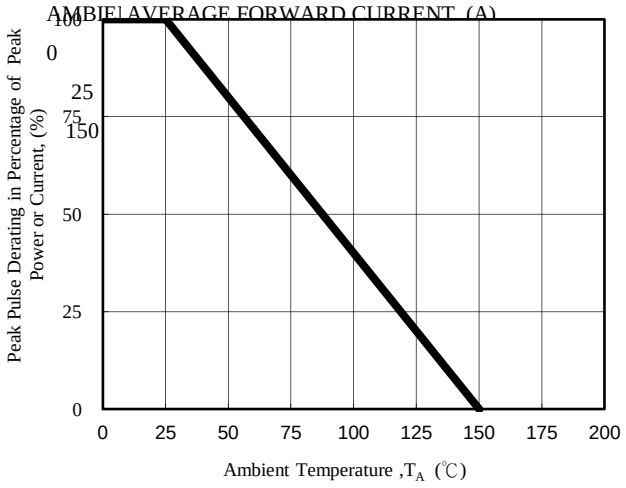


Fig. 1 - Pulse Derating Curve

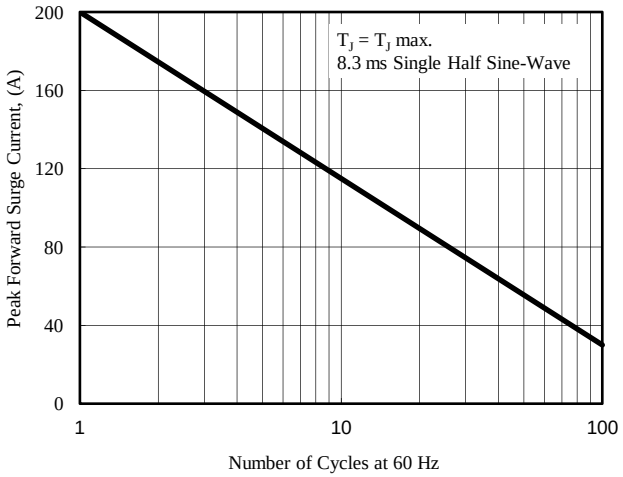


Fig. 2 - Maximum Non-Repetitive Surge Current

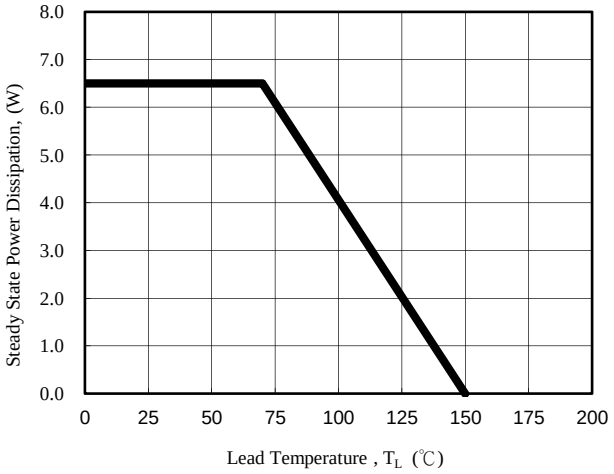


Fig. 3 - Steady State Power Derating Curve

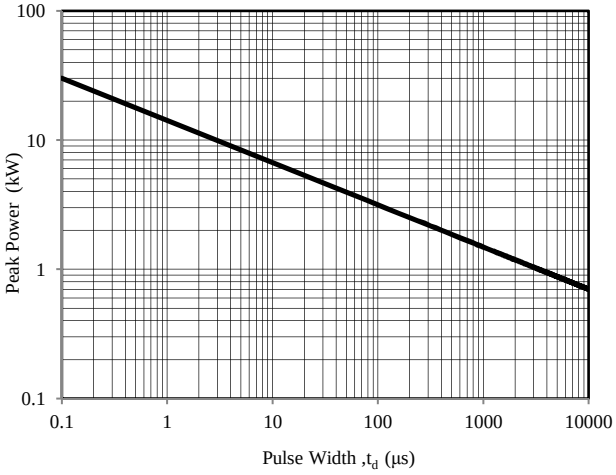


Fig. 4 - Peak Pulse Power Rating Curve

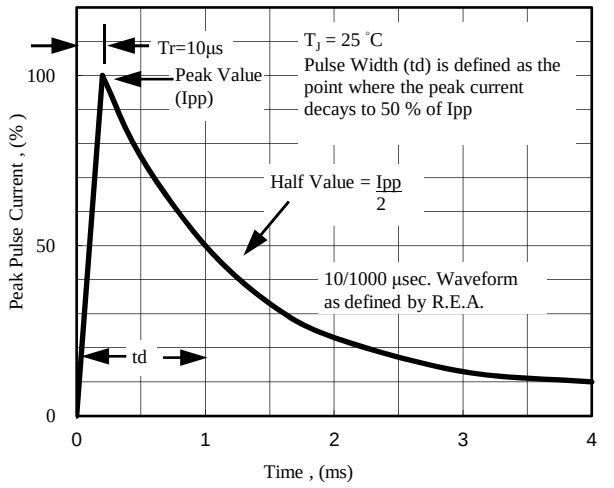


Fig. 5 - Pulse Waveform

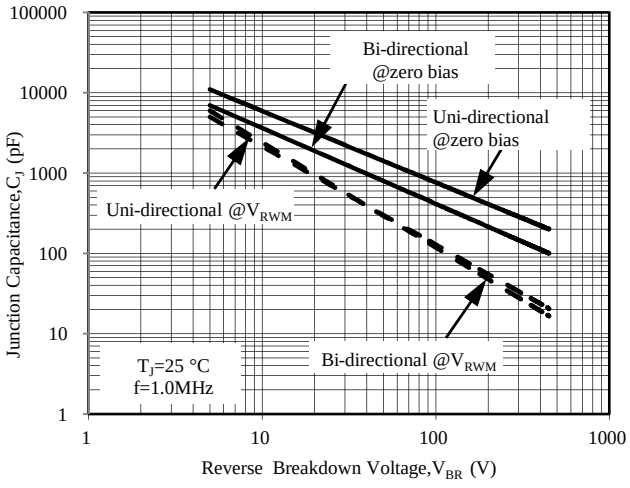


Fig. 6 - Typical Junction Capacitance

Electrical Characteristics(T_A=25℃ 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}	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
TSMCJ5.0	TSMCJ5.0C	GDD	BDD	6.40	7.30	10	800	5.0	156.25	9.6
TSMCJ5.0A	TSMCJ5.0CA	GDE	BDE	6.40	7.00	10	800	5.0	163.04	9.2
TSMCJ6.0	TSMCJ6.0C	GDF	BDF	6.67	8.15	10	800	6.0	131.58	11.4
TSMCJ6.0A	TSMCJ6.0CA	GDG	BDG	6.67	7.37	10	800	6.0	145.63	10.3
TSMCJ6.5	TSMCJ6.5C	GDH	BDH	7.22	8.82	10	500	6.5	121.95	12.3
TSMCJ6.5A	TSMCJ6.5CA	GDK	BDK	7.22	7.98	10	500	6.5	133.93	11.2
TSMCJ7.0	TSMCJ7.0C	GDL	BDL	7.78	9.51	10	200	7.0	112.78	13.3
TSMCJ7.0A	TSMCJ7.0CA	GDM	BDM	7.78	8.60	10	200	7.0	125.00	12.0
TSMCJ7.5	TSMCJ7.5C	GDN	BDN	8.33	10.20	1	100	7.5	104.90	14.3
TSMCJ7.5A	TSMCJ7.5CA	GDP	BDP	8.33	9.21	1	100	7.5	116.28	12.9
TSMCJ8.0	TSMCJ8.0C	GDQ	BDQ	8.89	10.90	1	50	8.0	100.00	15.0
TSMCJ8.0A	TSMCJ8.0CA	GDR	BDR	8.89	9.83	1	50	8.0	110.29	13.6
TSMCJ8.5	TSMCJ8.5C	GDS	BDS	9.44	11.50	1	20	8.5	94.34	15.9
TSMCJ8.5A	TSMCJ8.5CA	GDT	BDT	9.44	10.40	1	20	8.5	104.17	14.4
TSMCJ9.0	TSMCJ9.0C	GDU	BDU	10.00	12.20	1	10	9.0	88.76	16.9
TSMCJ9.0A	TSMCJ9.0CA	GDV	BDV	10.00	11.10	1	10	9.0	97.40	15.4
TSMCJ10	TSMCJ10C	GDW	BDW	11.10	13.60	1	5	10.0	79.79	18.8
TSMCJ10A	TSMCJ10CA	GDX	BDX	11.10	12.30	1	5	10.0	88.24	17.0
TSMCJ11	TSMCJ11C	GDY	BDY	12.20	14.90	1	1	11.0	74.63	20.1
TSMCJ11A	TSMCJ11CA	GDZ	BDZ	12.20	13.50	1	1	11.0	82.42	18.2
TSMCJ12	TSMCJ12C	GED	BED	13.30	16.30	1	1	12.0	68.18	22.0
TSMCJ12A	TSMCJ12CA	GEE	BEE	13.30	14.70	1	1	12.0	75.38	19.9
TSMCJ13	TSMCJ13C	GEF	BEF	14.40	17.60	1	1	13.0	63.03	23.8
TSMCJ13A	TSMCJ13CA	GEG	BEG	14.40	15.90	1	1	13.0	69.77	21.5
TSMCJ14	TSMCJ14C	GEH	BEH	15.60	19.10	1	1	14.0	58.14	25.8
TSMCJ14A	TSMCJ14CA	GEK	BEK	15.60	17.20	1	1	14.0	64.66	23.2
TSMCJ15	TSMCJ15C	GEL	BEL	16.70	20.40	1	1	15.0	55.76	26.9
TSMCJ15A	TSMCJ15CA	GEM	BEM	16.70	18.50	1	1	15.0	61.48	24.4
TSMCJ16	TSMCJ16C	GEN	BEN	17.80	21.80	1	1	16.0	52.08	28.8
TSMCJ16A	TSMCJ16CA	GEP	BEP	17.80	19.70	1	1	16.0	57.69	26.0
TSMCJ17	TSMCJ17C	GEQ	BEQ	18.90	23.10	1	1	17.0	49.18	30.5
TSMCJ17A	TSMCJ17CA	GER	BER	18.90	20.90	1	1	17.0	54.35	27.6
TSMCJ18	TSMCJ18C	GES	BES	20.00	24.40	1	1	18.0	46.58	32.2
TSMCJ18A	TSMCJ18CA	GET	BET	20.00	22.10	1	1	18.0	51.37	29.2
TSMCJ19	TSMCJ19C	GEA	BEA	21.13	25.76	1	1	19.0	44.10	34.0
TSMCJ19A	TSMCJ19CA	GEB	BEB	21.10	23.30	1	1	19.0	48.73	30.8
TSMCJ20	TSMCJ20C	GEU	BEU	22.20	27.10	1	1	20.0	41.90	35.8
TSMCJ20A	TSMCJ20CA	GEV	BEV	22.20	24.50	1	1	20.0	46.30	32.4
TSMCJ22	TSMCJ22C	GEW	BEW	24.40	29.80	1	1	22.0	38.07	39.4
TSMCJ22A	TSMCJ22CA	GEX	BEX	24.40	26.90	1	1	22.0	42.25	35.5
TSMCJ24	TSMCJ24C	GEY	BEY	26.70	32.60	1	1	24.0	34.88	43.0
TSMCJ24A	TSMCJ24CA	GEZ	BEZ	26.70	29.50	1	1	24.0	38.56	38.9
TSMCJ26	TSMCJ26C	GFD	BFD	28.90	35.30	1	1	26.0	32.19	46.6
TSMCJ26A	TSMCJ26CA	GFE	BFE	28.90	31.90	1	1	26.0	35.63	42.1
TSMCJ28	TSMCJ28C	GFF	BFF	31.10	38.00	1	1	28.0	30.00	50.0
TSMCJ28A	TSMCJ28CA	GFG	BFG	31.10	34.40	1	1	28.0	33.04	45.4
TSMCJ30	TSMCJ30C	GFH	BFH	33.30	40.70	1	1	30.0	28.04	53.5
TSMCJ30A	TSMCJ30CA	GFK	BFK	33.30	36.80	1	1	30.0	30.99	48.4
TSMCJ33	TSMCJ33C	GFL	BFL	36.70	44.90	1	1	33.0	25.42	59.0
TSMCJ33A	TSMCJ33CA	GFM	BFM	36.70	40.60	1	1	33.0	28.14	53.3
TSMCJ36	TSMCJ36C	GFN	BFN	40.00	48.90	1	1	36.0	23.33	64.3
TSMCJ36A	TSMCJ36CA	GFP	BFP	40.00	44.20	1	1	36.0	25.82	58.1

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

Electrical Characteristics(T_A=25℃ 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}	Maximum Reverse Surge Current I_{PP} (A)	Maximum Clamping Voltage V_C @I_{PP} (V)
		Uni	Bi	Min (V)	Max (V)	I_T (mA)				
TSMCJ40	TSMCJ40C	GFQ	BFQ	44.40	54.30	1	1	40.0	21.01	71.4
TSMCJ40A	TSMCJ40CA	GFR	BFR	44.40	49.10	1	1	40.0	23.26	64.5
TSMCJ43	TSMCJ43C	GFS	BFS	47.80	58.40	1	1	43.0	19.56	76.7
TSMCJ43A	TSMCJ43CA	GFT	BFT	47.80	52.80	1	1	43.0	21.61	69.4
TSMCJ45	TSMCJ45C	GFU	BFU	50.00	61.10	1	1	45.0	18.68	80.3
TSMCJ45A	TSMCJ45CA	GFV	BFV	50.00	55.30	1	1	45.0	20.63	72.7
TSMCJ48	TSMCJ48C	GFW	BFW	53.30	65.10	1	1	48.0	17.54	85.5
TSMCJ48A	TSMCJ48CA	GFX	BFX	53.30	58.90	1	1	48.0	19.38	77.4
TSMCJ51	TSMCJ51C	GFY	BFY	56.70	69.30	1	1	51.0	16.47	91.1
TSMCJ51A	TSMCJ51CA	GFZ	BFZ	56.70	62.70	1	1	51.0	18.20	82.4
TSMCJ54	TSMCJ54C	GGD	BGD	60.00	73.30	1	1	54.0	15.58	96.3
TSMCJ54A	TSMCJ54CA	GGE	BGE	60.00	66.30	1	1	54.0	17.22	87.1
TSMCJ58	TSMCJ58C	GGF	BGF	64.40	78.70	1	1	58.0	14.56	103.0
TSMCJ58A	TSMCJ58CA	GGG	BGG	64.40	71.20	1	1	58.0	16.03	93.6
TSMCJ60	TSMCJ60C	GGH	BGH	66.70	81.50	1	1	60.0	14.02	107.0
TSMCJ60A	TSMCJ60CA	GGK	BGK	66.70	73.70	1	1	60.0	15.50	96.8
TSMCJ64	TSMCJ64C	GGL	BGL	71.10	86.90	1	1	64.0	13.16	114.0
TSMCJ64A	TSMCJ64CA	GGM	BGM	71.10	78.60	1	1	64.0	14.56	103.0
TSMCJ70	TSMCJ70C	GGN	BGN	77.80	95.10	1	1	70.0	12.00	125.0
TSMCJ70A	TSMCJ70CA	GGP	BGP	77.80	86.00	1	1	70.0	13.27	113.0
TSMCJ75	TSMCJ75C	GGQ	BGQ	83.30	102.00	1	1	75.0	11.19	134.0
TSMCJ75A	TSMCJ75CA	GGR	BGR	83.30	92.10	1	1	75.0	12.40	121.0
TSMCJ78	TSMCJ78C	GGS	BGS	86.70	106.00	1	1	78.0	10.79	139.0
TSMCJ78A	TSMCJ78CA	GGT	BGT	86.70	95.80	1	1	78.0	11.90	126.0
TSMCJ80	TSMCJ80C	GGA	BGA	88.96	108.80	1	1	80.0	10.47	143.2
TSMCJ80A	TSMCJ80CA	GGB	BGB	88.80	97.60	1	1	80.0	11.57	129.6
TSMCJ85	TSMCJ85C	GGU	BGU	94.40	115.00	1	1	85.0	9.93	151.0
TSMCJ85A	TSMCJ85CA	GGV	BGV	94.40	104.00	1	1	85.0	10.95	137.0
TSMCJ90	TSMCJ90C	GGW	BGW	100.00	122.00	1	1	90.0	9.38	160.0
TSMCJ90A	TSMCJ90CA	GGX	BGX	100.00	111.00	1	1	90.0	10.27	146.0
TSMCJ100	TSMCJ100C	GGY	BGY	111.00	136.00	1	1	100.0	8.38	179.0
TSMCJ100A	TSMCJ100CA	GGZ	BGZ	111.00	123.00	1	1	100.0	9.26	162.0
TSMCJ110	TSMCJ110C	GHD	BHD	122.00	149.00	1	1	110.0	7.65	196.0
TSMCJ110A	TSMCJ110CA	GHE	BHE	122.00	135.00	1	1	110.0	8.47	177.0
TSMCJ120	TSMCJ120C	GHF	BHF	133.00	163.00	1	1	120.0	7.01	214.0
TSMCJ120A	TSMCJ120CA	GHG	BHG	133.00	147.00	1	1	120.0	7.77	193.0
TSMCJ130	TSMCJ130C	GHH	BHH	144.00	176.00	1	1	130.0	6.49	231.0
TSMCJ130A	TSMCJ130CA	GHK	BHK	144.00	159.00	1	1	130.0	7.18	209.0
TSMCJ140	TSMCJ140C	GHA	BHA	155.68	190.40	1	1	140.0	5.99	250.6
TSMCJ140A	TSMCJ140CA	GHB	BHB	155.00	171.00	1	1	140.0	6.61	226.8
TSMCJ150	TSMCJ150C	GHL	BHL	167.00	204.00	1	1	150.0	5.60	268.0
TSMCJ150A	TSMCJ150CA	GHM	BHM	167.00	185.00	1	1	150.0	6.17	243.0
TSMCJ160	TSMCJ160C	GHN	BHN	178.00	218.00	1	1	160.0	5.23	287.0
TSMCJ160A	TSMCJ160CA	GHP	BHP	178.00	197.00	1	1	160.0	5.79	259.0
TSMCJ170	TSMCJ170C	GHQ	BHQ	189.00	231.00	1	1	170.0	4.93	304.0
TSMCJ170A	TSMCJ170CA	GHR	BHR	189.00	209.00	1	1	170.0	5.45	275.0
TSMCJ180	TSMCJ180C	GHS	BHS	200.16	244.80	1	1	180.0	4.66	322.2
TSMCJ180A	TSMCJ180CA	GHT	BHT	200.00	220.00	1	1	180.0	5.14	291.6
TSMCJ190	TSMCJ190C	GHU	BHU	211.28	258.40	1	1	190.0	4.41	340.1
TSMCJ190A	TSMCJ190CA	GHV	BHV	211.00	232.00	1	1	190.0	4.87	307.8
TSMCJ200A	TSMCJ200CA	GHW	BHW	224.00	247.00	1	1	200.0	4.60	324.0
TSMCJ220A	TSMCJ220CA	GHX	BHX	246.00	272.00	1	1	220.0	4.20	356.0
TSMCJ250A	TSMCJ250CA	GHZ	BHZ	279.00	309.00	1	1	250.0	3.70	405.0
TSMCJ300A	TSMCJ300CA	GJE	BJE	335.00	371.00	1	1	300.0	3.10	486.0
TSMCJ350A	TSMCJ350CA	GJG	BJG	391.00	432.00	1	1	350.0	2.60	567.0
TSMCJ400A	TSMCJ400CA	GJK	BJK	447.00	494.00	1	1	400.0	2.30	648.0
TSMCJ440A	TSMCJ440CA	GJM	BJM	492.00	543.00	1	1	440.0	2.10	713.0