Working Voltage: 5.0 to 440 V
Peak Pulse Power: 3000 W

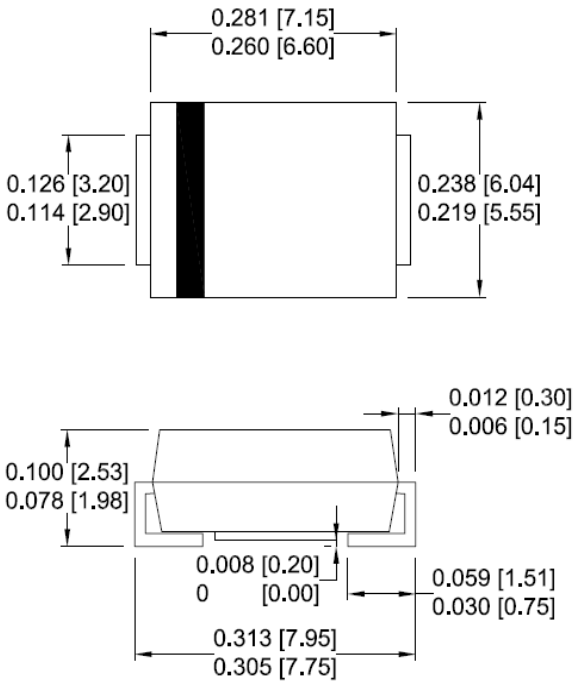
Features

- Glass passivated chip
- 3000 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}	3000	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}	300	A
Maximum instantaneous forward voltage at 100A 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)

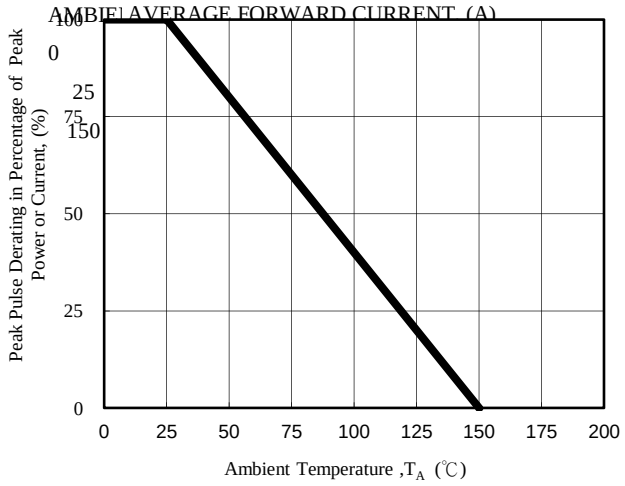


Fig. 1 - Pulse Derating Curve

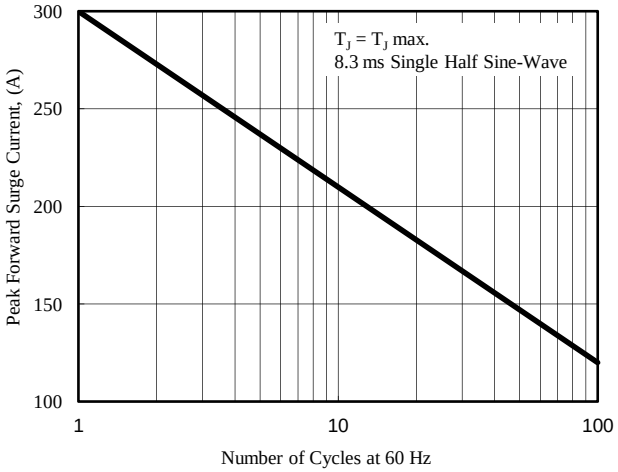


Fig. 2 - Maximum Non-Repetitive Surge Current

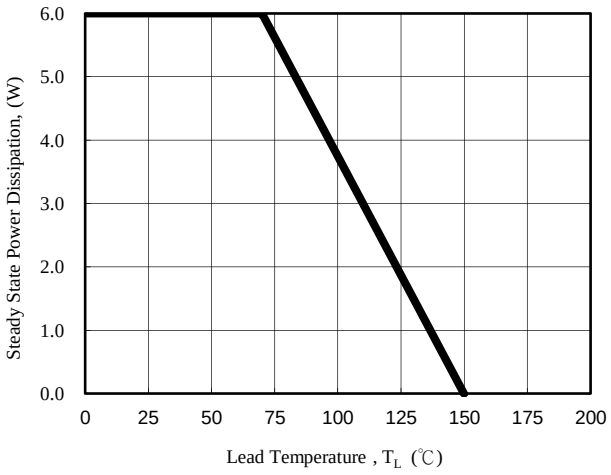


Fig. 3 - Steady State Power Derating Curve

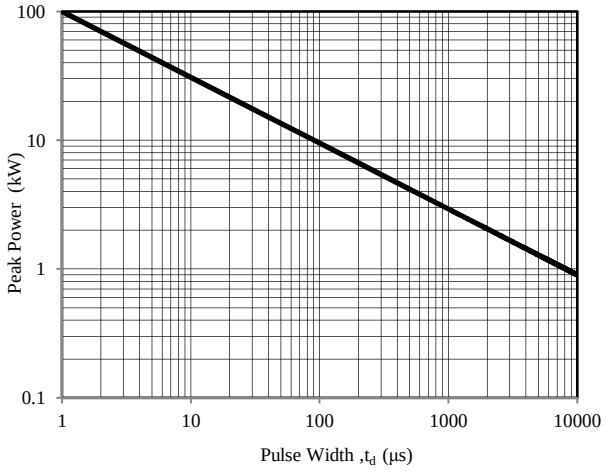


Fig. 4 - Peak Pulse Power Rating Curve

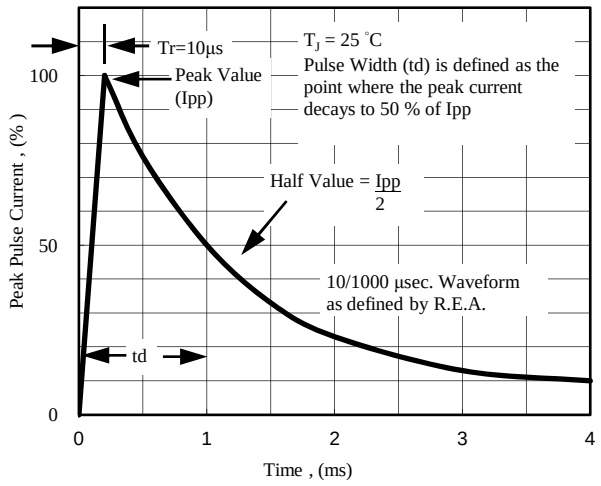


Fig. 5 - Pulse Waveform

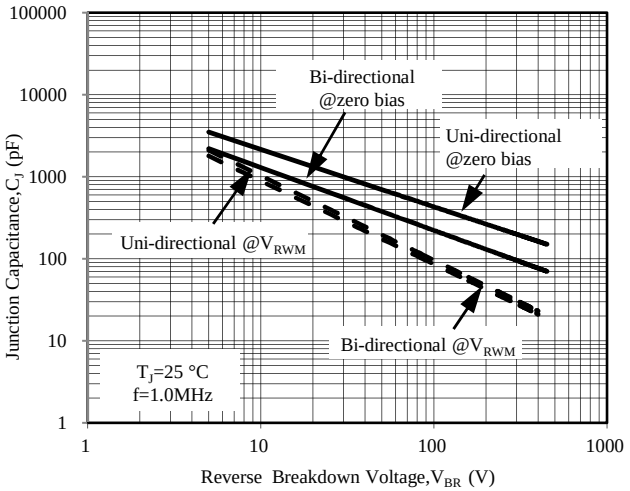


Fig. 6 - Typical Junction Capacitance

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} (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)				
TSMDJ5.0	TSMDJ5.0C	RDD	DDD	6.40	7.30	50	800	5.0	312.50	9.6
TSMDJ5.0A	TSMDJ5.0CA	RDE	DDE	6.40	7.00	50	800	5.0	326.09	9.2
TSMDJ6.0	TSMDJ6.0C	RDF	DDF	6.67	8.15	50	800	6.0	263.16	11.4
TSMDJ6.0A	TSMDJ6.0CA	RDG	DDG	6.67	7.37	50	800	6.0	291.26	10.3
TSMDJ6.5	TSMDJ6.5C	RDH	DDH	7.22	8.82	50	500	6.5	243.90	12.3
TSMDJ6.5A	TSMDJ6.5CA	RDK	DDK	7.22	7.98	50	500	6.5	267.86	11.2
TSMDJ7.0	TSMDJ7.0C	RDL	DDL	7.78	9.51	50	200	7.0	225.56	13.3
TSMDJ7.0A	TSMDJ7.0CA	PDM	DDM	7.78	8.60	50	200	7.0	250.00	12.0
TSMDJ7.5	TSMDJ7.5C	PDN	DDN	8.33	10.20	5	100	7.5	209.79	14.3
TSMDJ7.5A	TSMDJ7.5CA	PDP	DDP	8.33	9.21	5	100	7.5	232.56	12.9
TSMDJ8.0	TSMDJ8.0C	PDQ	DDQ	8.89	10.90	5	50	8.0	200.00	15.0
TSMDJ8.0A	TSMDJ8.0CA	PDR	DDR	8.89	9.83	5	50	8.0	220.59	13.6
TSMDJ8.5	TSMDJ8.5C	PDS	DDS	9.44	11.50	5	20	8.5	188.68	15.9
TSMDJ8.5A	TSMDJ8.5CA	PDT	DDT	9.44	10.40	5	20	8.5	208.33	14.4
TSMDJ9.0	TSMDJ9.0C	PDU	DDU	10.00	12.20	5	10	9.0	177.51	16.9
TSMDJ9.0A	TSMDJ9.0CA	PDV	DDV	10.00	11.10	5	10	9.0	194.81	15.4
TSMDJ10	TSMDJ10C	PDW	DDW	11.10	13.60	5	5	10.0	159.57	18.8
TSMDJ10A	TSMDJ10CA	PDX	DDX	11.10	12.30	5	5	10.0	176.47	17.0
TSMDJ11	TSMDJ11C	PDY	DDY	12.20	14.90	5	2	11.0	149.25	20.1
TSMDJ11A	TSMDJ11CA	PDZ	DDZ	12.20	13.50	5	2	11.0	164.84	18.2
TSMDJ12	TSMDJ12C	PED	DED	13.30	16.30	5	2	12.0	136.36	22.0
TSMDJ12A	TSMDJ12CA	PEE	DEE	13.30	14.70	5	2	12.0	150.75	19.9
TSMDJ13	TSMDJ13C	PEF	DEF	14.40	17.60	5	2	13.0	126.05	23.8
TSMDJ13A	TTSMDJ13CA	PEG	DEG	14.40	15.90	5	2	13.0	139.53	21.5
TSMDJ14	TSMDJ14C	PEH	DEH	15.60	19.10	5	2	14.0	116.28	25.8
TSMDJ14A	TSMDJ14CA	PEK	DEK	15.60	17.20	5	2	14.0	129.31	23.2
TSMDJ15	TSMDJ15C	PEL	DEL	16.70	20.40	5	2	15.0	111.52	26.9
TSMDJ15A	TSMDJ15CA	PEM	DEM	16.70	18.50	5	2	15.0	122.95	24.4
TSMDJ16	TSMDJ16C	PEN	DEN	17.80	21.80	5	2	16.0	104.17	28.8
TSMDJ16A	TSMDJ16CA	PEP	DEP	17.80	19.70	5	2	16.0	115.38	26.0
TSMDJ17	TSMDJ17C	PEQ	DEQ	18.90	23.10	5	2	17.0	98.36	30.5
TSMDJ17A	TSMDJ17CA	PER	DER	18.90	20.90	5	2	17.0	108.70	27.6
TSMDJ18	TSMDJ18C	PES	DES	20.00	24.40	5	2	18.0	93.17	32.2
TSMDJ18A	TSMDJ18CA	PET	DET	20.00	22.10	5	2	18.0	102.74	29.2
TSMDJ19	TSMDJ19C	PEA	DEA	21.13	25.76	5	2	19.0	88.21	34.0
TSMDJ19A	TSMDJ19CA	PEB	DEB	21.10	23.30	5	2	19.0	97.47	30.8
TSMDJ20	TSMDJ20C	PEU	DEU	22.20	27.10	5	2	20.0	83.80	35.8
TSMDJ20A	TSMDJ20CA	PEV	DEV	22.20	24.50	5	2	20.0	92.59	32.4
TSMDJ22	TSMDJ22C	PEW	DEW	24.40	29.80	5	2	22.0	76.14	39.4
TSMDJ22A	TSMDJ22CA	PEX	DEX	24.40	26.90	5	2	22.0	84.51	35.5
TSMDJ24	TSMDJ24C	PEY	DEY	26.70	32.60	5	2	24.0	69.77	43.0
TSMDJ24A	TSMDJ24CA	PEZ	DEZ	26.70	29.50	5	2	24.0	77.12	38.9
TSMDJ26	TSMDJ26C	PFD	DFD	28.90	35.30	5	2	26.0	64.38	46.6
TSMDJ26A	TSMDJ26CA	PFE	DFE	28.90	31.90	5	2	26.0	71.26	42.1
TSMDJ28	TSMDJ28C	PFF	DFF	31.10	38.00	5	2	28.0	60.00	50.0
TSMDJ28A	TSMDJ28CA	PFG	DFG	31.10	34.40	5	2	28.0	66.08	45.4
TSMDJ30	TSMDJ30C	PFH	DFH	33.30	40.70	5	2	30.0	56.07	53.5
TSMDJ30A	TSMDJ30CA	PFK	DFK	33.30	36.80	5	2	30.0	61.98	48.4
TSMDJ33	TSMDJ33C	PFL	DFL	36.70	44.90	5	2	33.0	50.85	59.0
TSMDJ33A	TSMDJ33CA	PFM	DFM	36.70	40.60	5	2	33.0	56.29	53.3
TSMDJ36	TSMDJ36C	PFN	DFN	40.00	48.90	5	2	36.0	46.66	64.3
TSMDJ36A	TSMDJ36CA	PFP	DFP	40.00	44.20	5	2	36.0	51.64	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
3. For Bi-Directional devices having V_R of 10 volts and under, the I_R limit is double

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} (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)				
TSMDJ40	TSMDJ40C	PFQ	DFQ	44.40	54.30	5	2	40.0	42.02	71.4
TSMDJ40A	TSMDJ40CA	PFR	DFR	44.40	49.10	5	2	40.0	46.51	64.5
TSMDJ43	TSMDJ43C	PFS	DFS	47.80	58.40	5	2	43.0	39.11	76.7
TSMDJ43A	TSMDJ43CA	PFT	DFT	47.80	52.80	5	2	43.0	43.23	69.4
TSMDJ45	TSMDJ45C	PFU	DFU	50.00	61.10	5	2	45.0	37.36	80.3
TSMDJ45A	TSMDJ45CA	PFV	DFV	50.00	55.30	5	2	45.0	41.27	72.7
TSMDJ48	TSMDJ48C	PFW	DFW	53.30	65.10	5	2	48.0	35.09	85.5
TSMDJ48A	TSMDJ48CA	PFX	DFX	53.30	58.90	5	2	48.0	38.76	77.4
TSMDJ51	TSMDJ51C	PFY	DFY	56.70	69.30	5	2	51.0	32.93	91.1
TSMDJ51A	TSMDJ51CA	PFZ	DFZ	56.70	62.70	5	2	51.0	36.41	82.4
TSMDJ54	TSMDJ54C	RGD	DGD	60.00	73.30	5	2	54.0	31.15	96.3
TSMDJ54A	TSMDJ54CA	RGE	DGE	60.00	66.30	5	2	54.0	34.44	87.1
TSMDJ58	TSMDJ58C	RGF	DGF	64.40	78.70	5	2	58.0	29.13	103.0
TSMDJ58A	TSMDJ58CA	PGG	DGG	64.40	71.20	5	2	58.0	32.05	93.6
TSMDJ60	TSMDJ60C	RGH	DGH	66.70	81.50	5	2	60.0	28.04	107.0
TSMDJ60A	TSMDJ60CA	PGK	DGK	66.70	73.70	5	2	60.0	30.99	96.8
TSMDJ64	TSMDJ64C	PGL	DGL	71.10	86.90	5	2	64.0	26.32	114.0
TSMDJ64A	TSMDJ64CA	PGM	DGM	71.10	78.60	5	2	64.0	29.13	103.0
TSMDJ70	TSMDJ70C	PGN	DGN	77.80	95.10	5	2	70.0	24.00	125.0
TSMDJ70A	TSMDJ70CA	PGP	DGP	77.80	86.00	5	2	70.0	26.55	113.0
TSMDJ75	TSMDJ75C	PGQ	DGQ	83.30	102.00	5	2	75.0	22.39	134.0
TSMDJ75A	TSMDJ75CA	PGR	DGR	83.30	92.10	5	2	75.0	24.79	121.0
TSMDJ78	TSMDJ78C	PGS	DGS	86.70	106.00	5	2	78.0	21.58	139.0
TSMDJ78A	TSMDJ78CA	PGT	DGT	86.70	95.80	5	2	78.0	23.81	126.0
TSMDJ80	TSMDJ80C	PGA	DGA	88.96	108.80	5	2	80.0	20.95	143.2
TSMDJ80A	TSMDJ80CA	PGB	DGB	88.80	97.60	5	2	80.0	23.15	129.6
TSMDJ85	TSMDJ85C	PGU	DGU	94.40	115.00	5	2	85.0	19.87	151.0
TSMDJ85A	TSMDJ85CA	PGV	DGV	94.40	104.00	5	2	85.0	21.90	137.0
TSMDJ90	TSMDJ90C	PGW	DGW	100.00	122.00	5	2	90.0	18.75	160.0
TSMDJ90A	TSMDJ90CA	PGX	DGX	100.00	111.00	5	2	90.0	20.55	146.0
TSMDJ100	TSMDJ100C	PGY	DGY	111.00	136.00	5	2	100.0	16.76	179.0
TSMDJ100A	TSMDJ100CA	PGZ	DGZ	111.00	123.00	5	2	100.0	18.52	162.0
TSMDJ110	TSMDJ110C	PHD	DHD	122.00	149.00	5	2	110.0	15.31	196.0
TSMDJ110A	TSMDJ110CA	PHE	DHE	122.00	135.00	5	2	110.0	16.95	177.0
TSMDJ120	TSMDJ120C	PHF	DHF	133.00	163.00	5	2	120.0	14.02	214.0
TSMDJ120A	TSMDJ120CA	PHG	DHG	133.00	147.00	5	2	120.0	15.54	193.0
TSMDJ130	TSMDJ130C	PHH	DHH	144.00	176.00	5	2	130.0	12.99	231.0
TSMDJ130A	TSMDJ130CA	PHK	DHK	144.00	159.00	5	2	130.0	14.35	209.0
TSMDJ140	TSMDJ140C	PHA	DHA	155.68	190.40	5	2	140.0	11.97	250.6
TSMDJ140A	TSMDJ140CA	PHB	DHB	155.00	171.00	5	2	140.0	13.23	226.8
TSMDJ150	TSMDJ150C	PHL	DHL	167.00	204.00	5	2	150.0	11.19	268.0
TSMDJ150A	TSMDJ150CA	PHM	DHM	167.00	185.00	5	2	150.0	12.35	243.0
TSMDJ160	TSMDJ160C	PHN	DHN	178.00	218.00	5	2	160.0	10.45	287.0
TSMDJ160A	TSMDJ160CA	PHP	DHP	178.00	197.00	5	2	160.0	11.58	259.0
TSMDJ170	TSMDJ170C	PHQ	DHQ	189.00	231.00	5	2	170.0	9.87	304.0
TSMDJ170A	TSMDJ170CA	PHR	DHR	189.00	209.00	5	2	170.0	10.91	275.0
TSMDJ180	TSMDJ180C	PHS	DHS	200.16	244.80	5	2	180.0	9.31	322.2
TSMDJ180A	TSMDJ180CA	PHT	DHT	200.00	220.00	5	2	180.0	10.29	291.6
TSMDJ190	TSMDJ190C	PHU	DHU	211.28	258.40	5	2	190.0	8.82	340.1
TSMDJ190A	TSMDJ190CA	PHV	DHV	211.00	232.00	5	2	190.0	9.75	307.8
TSMDJ200A	TSMDJ200CA	PHW	DHW	224.00	247.00	5	2	200.0	9.26	324.0
TSMDJ220A	TSMDJ220CA	PHX	DHX	246.00	272.00	5	2	220.0	8.43	356.0
TSMDJ250A	TSMDJ250CA	PHZ	DHZ	279.00	309.00	5	2	250.0	7.41	405.0
TSMDJ300A	TSMDJ300CA	PJE	DJE	335.00	371.00	5	2	300.0	6.17	486.0
TSMDJ350A	TSMDJ350CA	PJG	DJG	391.00	432.00	5	2	350.0	5.29	567.0
TSMDJ400A	TSMDJ400CA	PJK	DJK	447.00	494.00	5	2	400.0	4.63	648.0
TSMDJ440A	TSMDJ440CA	PJM	DJM	492.00	543.00	5	2	440.0	4.21	713.0