

Working Voltage: 5.0 to 440 V

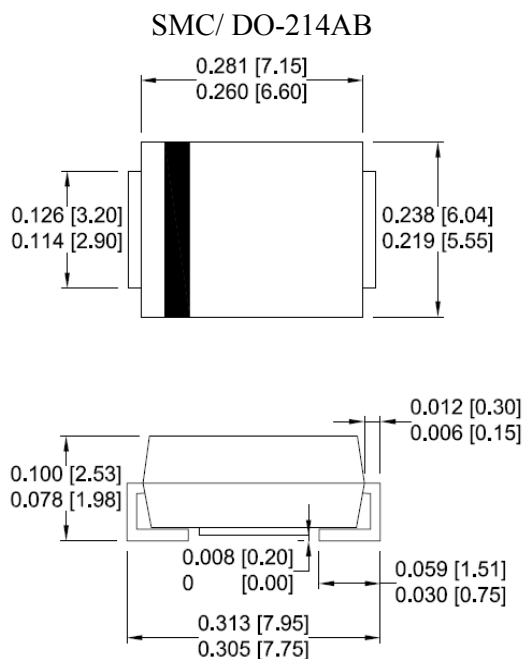
Peak Pulse Power: 3000 W

Features

- Glass passivated chip
- 3000 W peak pulse power capability with a 10/1000 μ s 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



Dimensions: inch[mm]

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

Parameter	Symbol	Value	UNIT
Peak power dissipation with a 10/1000 μ s waveform ⁽¹⁾	P_{PP}	3000	W
Peak pulse current with a 10/1000 μ s waveform ⁽¹⁾	I_{PP}	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^{\circ}\text{C}$	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	$^{\circ}\text{C}$

Note:

(1)Non-repetitive current pulse per Fig.5 and derated above $T_A = 25^{\circ}\text{C}$ 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) $V_F < 3.5\text{V}$ for devices of $V_{BR} < 200\text{V}$ and $V_F < 5.0\text{V}$ for devices of $V_{BR} > 201\text{V}$

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

Part Number (Uni)	Part Number (Bi)	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)
		Min (V)	Max (V)	I_T (mA)				
SMDJ5.0	SMDJ5.0C	6.40	7.30	10	800	5.0	312.50	9.6
SMDJ5.0A	SMDJ5.0CA	6.40	7.00	10	800	5.0	326.09	9.2
SMDJ6.0	SMDJ6.0C	6.67	8.15	10	800	6.0	263.16	11.4
SMDJ6.0A	SMDJ6.0CA	6.67	7.37	10	800	6.0	291.26	10.3
SMDJ6.5	SMDJ6.5C	7.22	8.82	10	500	6.5	243.90	12.3
SMDJ6.5A	SMDJ6.5CA	7.22	7.98	10	500	6.5	267.86	11.2
SMDJ7.0	SMDJ7.0C	7.78	9.51	10	200	7.0	225.56	13.3
SMDJ7.0A	SMDJ7.0CA	7.78	8.60	10	200	7.0	250.00	12.0
SMDJ7.5	SMDJ7.5C	8.33	10.20	1	100	7.5	209.79	14.3
SMDJ7.5A	SMDJ7.5CA	8.33	9.21	1	100	7.5	232.56	12.9
SMDJ8.0	SMDJ8.0C	8.89	10.90	1	50	8.0	200.00	15.0
SMDJ8.0A	SMDJ8.0CA	8.89	9.83	1	50	8.0	220.59	13.6
SMDJ8.5	SMDJ8.5C	9.44	11.50	1	20	8.5	188.68	15.9
SMDJ8.5A	SMDJ8.5CA	9.44	10.40	1	20	8.5	208.33	14.4
SMDJ9.0	SMDJ9.0C	10.00	12.20	1	10	9.0	177.51	16.9
SMDJ9.0A	SMDJ9.0CA	10.00	11.10	1	10	9.0	194.81	15.4
SMDJ10	SMDJ10C	11.10	13.60	1	5	10.0	159.57	18.8
SMDJ10A	SMDJ10CA	11.10	12.30	1	5	10.0	176.47	17.0
SMDJ11	SMDJ11C	12.20	14.90	1	2	11.0	149.25	20.1
SMDJ11A	SMDJ11CA	12.20	13.50	1	2	11.0	164.84	18.2
SMDJ12	SMDJ12C	13.30	16.30	1	2	12.0	136.36	22.0
SMDJ12A	SMDJ12CA	13.30	14.70	1	2	12.0	150.75	19.9
SMDJ13	SMDJ13C	14.40	17.60	1	2	13.0	126.05	23.8
SMDJ13A	SMDJ13CA	14.40	15.90	1	2	13.0	139.53	21.5
SMDJ14	SMDJ14C	15.60	19.10	1	2	14.0	116.28	25.8
SMDJ14A	SMDJ14CA	15.60	17.20	1	2	14.0	129.31	23.2
SMDJ15	SMDJ15C	16.70	20.40	1	2	15.0	111.52	26.9
SMDJ15A	SMDJ15CA	16.70	18.50	1	2	15.0	122.95	24.4
SMDJ16	SMDJ16C	17.80	21.80	1	2	16.0	104.17	28.8
SMDJ16A	SMDJ16CA	17.80	19.70	1	2	16.0	115.38	26.0
SMDJ17	SMDJ17C	18.90	23.10	1	2	17.0	98.36	30.5
SMDJ17A	SMDJ17CA	18.90	20.90	1	2	17.0	108.70	27.6
SMDJ18	SMDJ18C	20.00	24.40	1	2	18.0	93.17	32.2
SMDJ18A	SMDJ18CA	20.00	22.10	1	2	18.0	102.74	29.2
SMDJ19	SMDJ19C	21.13	25.76	1	2	19.0	88.21	34.0
SMDJ19A	SMDJ19CA	21.10	23.30	1	2	19.0	97.47	30.8
SMDJ20	SMDJ20C	22.20	27.10	1	2	20.0	83.80	35.8
SMDJ20A	SMDJ20CA	22.20	24.50	1	2	20.0	92.59	32.4
SMDJ22	SMDJ22C	24.40	29.80	1	2	22.0	76.14	39.4
SMDJ22A	SMDJ22CA	24.40	26.90	1	2	22.0	84.51	35.5
SMDJ24	SMDJ24C	26.70	32.60	1	2	24.0	69.77	43.0
SMDJ24A	SMDJ24CA	26.70	29.50	1	2	24.0	77.12	38.9
SMDJ26	SMDJ26C	28.90	35.30	1	2	26.0	64.38	46.6
SMDJ26A	SMDJ26CA	28.90	31.90	1	2	26.0	71.26	42.1
SMDJ28	SMDJ28C	31.10	38.00	1	2	28.0	60.00	50.0
SMDJ28A	SMDJ28CA	31.10	34.40	1	2	28.0	66.08	45.4
SMDJ30	SMDJ30C	33.30	40.70	1	2	30.0	56.07	53.5
SMDJ30A	SMDJ30CA	33.30	36.80	1	2	30.0	61.98	48.4
SMDJ33	SMDJ33C	36.70	44.90	1	2	33.0	50.85	59.0
SMDJ33A	SMDJ33CA	36.70	40.60	1	2	33.0	56.29	53.3
SMDJ36	SMDJ36C	40.00	48.90	1	2	36.0	46.66	64.3
SMDJ36A	SMDJ36CA	40.00	44.20	1	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($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	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)
		Min (V)	Max (V)	I_T (mA)				
SMDJ40	SMDJ40C	44.40	54.30	1	2	40.0	42.02	71.4
SMDJ40A	SMDJ40CA	44.40	49.10	1	2	40.0	46.51	64.5
SMDJ43	SMDJ43C	47.80	58.40	1	2	43.0	39.11	76.7
SMDJ43A	SMDJ43CA	47.80	52.80	1	2	43.0	43.23	69.4
SMDJ45	SMDJ45C	50.00	61.10	1	2	45.0	37.36	80.3
SMDJ45A	SMDJ45CA	50.00	55.30	1	2	45.0	41.27	72.7
SMDJ48	SMDJ48C	53.30	65.10	1	2	48.0	35.09	85.5
SMDJ48A	SMDJ48CA	53.30	58.90	1	2	48.0	38.76	77.4
SMDJ51	SMDJ51C	56.70	69.30	1	2	51.0	32.93	91.1
SMDJ51A	SMDJ51CA	56.70	62.70	1	2	51.0	36.41	82.4
SMDJ54	SMDJ54C	60.00	73.30	1	2	54.0	31.15	96.3
SMDJ54A	SMDJ54CA	60.00	66.30	1	2	54.0	34.44	87.1
SMDJ58	SMDJ58C	64.40	78.70	1	2	58.0	29.13	103.0
SMDJ58A	SMDJ58CA	64.40	71.20	1	2	58.0	32.05	93.6
SMDJ60	SMDJ60C	66.70	81.50	1	2	60.0	28.04	107.0
SMDJ60A	SMDJ60CA	66.70	73.70	1	2	60.0	30.99	96.8
SMDJ64	SMDJ64C	71.10	86.90	1	2	64.0	26.32	114.0
SMDJ64A	SMDJ64CA	71.10	78.60	1	2	64.0	29.13	103.0
SMDJ70	SMDJ70C	77.80	95.10	1	2	70.0	24.00	125.0
SMDJ70A	SMDJ70CA	77.80	86.00	1	2	70.0	26.55	113.0
SMDJ75	SMDJ75C	83.30	102.00	1	2	75.0	22.39	134.0
SMDJ75A	SMDJ75CA	83.30	92.10	1	2	75.0	24.79	121.0
SMDJ78	SMDJ78C	86.70	106.00	1	2	78.0	21.58	139.0
SMDJ78A	SMDJ78CA	86.70	95.80	1	2	78.0	23.81	126.0
SMDJ80	SMDJ80C	88.96	108.80	1	2	80.0	20.95	143.2
SMDJ80A	SMDJ80CA	88.80	97.60	1	2	80.0	23.15	129.6
SMDJ85	SMDJ85C	94.40	115.00	1	2	85.0	19.87	151.0
SMDJ85A	SMDJ85CA	94.40	104.00	1	2	85.0	21.90	137.0
SMDJ90	SMDJ90C	100.00	122.00	1	2	90.0	18.75	160.0
SMDJ90A	SMDJ90CA	100.00	111.00	1	2	90.0	20.55	146.0
SMDJ100	SMDJ100C	111.00	136.00	1	2	100.0	16.76	179.0
SMDJ100A	SMDJ100CA	111.00	123.00	1	2	100.0	18.52	162.0
SMDJ110	SMDJ110C	122.00	149.00	1	2	110.0	15.31	196.0
SMDJ110A	SMDJ110CA	122.00	135.00	1	2	110.0	16.95	177.0
SMDJ120	SMDJ120C	133.00	163.00	1	2	120.0	14.02	214.0
SMDJ120A	SMDJ120CA	133.00	147.00	1	2	120.0	15.54	193.0
SMDJ130	SMDJ130C	144.00	176.00	1	2	130.0	12.99	231.0
SMDJ130A	SMDJ130CA	144.00	159.00	1	2	130.0	14.35	209.0
SMDJ140	SMDJ140C	155.68	190.40	1	2	140.0	11.97	250.6
SMDJ140A	SMDJ140CA	155.00	171.00	1	2	140.0	13.23	226.8
SMDJ150	SMDJ150C	167.00	204.00	1	2	150.0	11.19	268.0
SMDJ150A	SMDJ150CA	167.00	185.00	1	2	150.0	12.35	243.0
SMDJ160	SMDJ160C	178.00	218.00	1	2	160.0	10.45	287.0
SMDJ160A	SMDJ160CA	178.00	197.00	1	2	160.0	11.58	259.0
SMDJ170	SMDJ170C	189.00	231.00	1	2	170.0	9.87	304.0
SMDJ170A	SMDJ170CA	189.00	209.00	1	2	170.0	10.91	275.0
SMDJ180	SMDJ180C	200.16	244.80	1	2	180.0	9.31	322.2
SMDJ180A	SMDJ180CA	200.00	220.00	1	2	180.0	10.29	291.6
SMDJ190	SMDJ190C	211.28	258.40	1	2	190.0	8.82	340.1
SMDJ190A	SMDJ190CA	211.00	232.00	1	2	190.0	9.75	307.8
SMDJ200A	SMDJ200CA	224.00	247.00	1	2	200.0	9.26	324.0
SMDJ220A	SMDJ220CA	246.00	272.00	1	2	220.0	8.43	356.0
SMDJ250A	SMDJ250CA	279.00	309.00	1	2	250.0	7.41	405.0
SMDJ300A	SMDJ300CA	335.00	371.00	1	2	300.0	6.17	486.0
SMDJ350A	SMDJ350CA	391.00	432.00	1	2	350.0	5.29	567.0
SMDJ400A	SMDJ400CA	447.00	494.00	1	2	400.0	4.63	648.0
SMDJ440A	SMDJ440CA	492.00	543.00	1	2	440.0	4.21	713.0

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

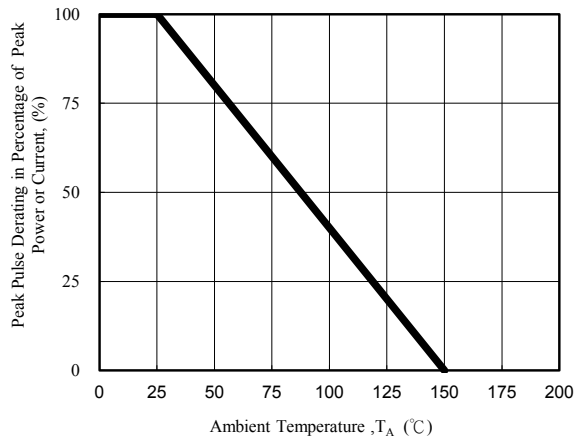


Fig. 1 - Pulse Derating Curve

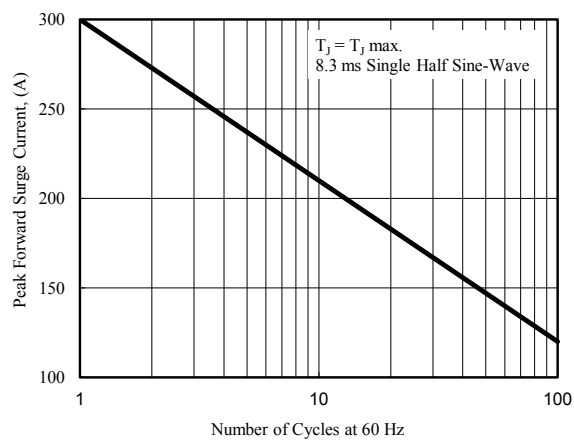


Fig. 2 - Maximum Non-Repetitive Surge Current

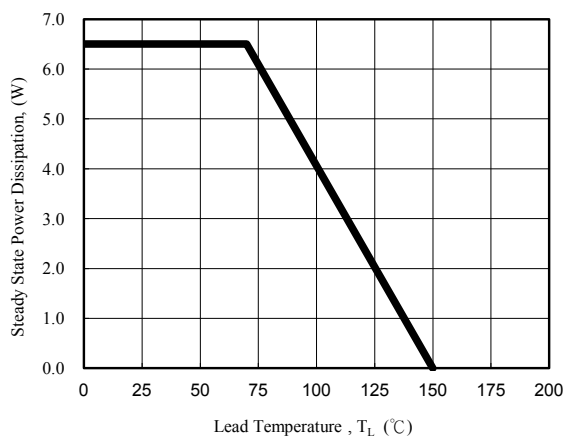


Fig. 3 - Steady State Power Derating Curve

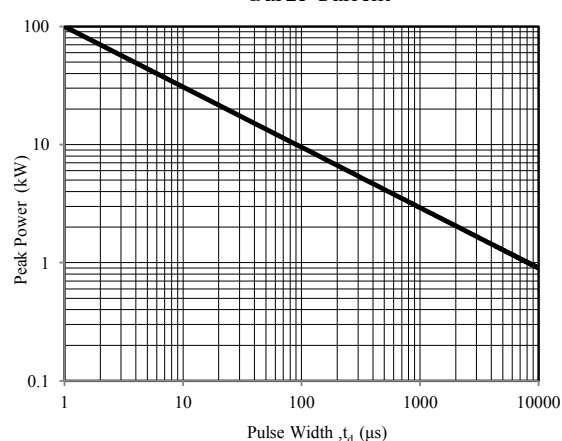


Fig. 4 - Peak Pulse Power Rating Curve

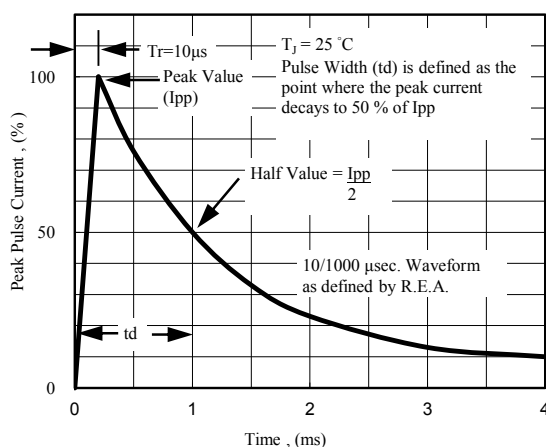


Fig. 5 - Pulse Waveform

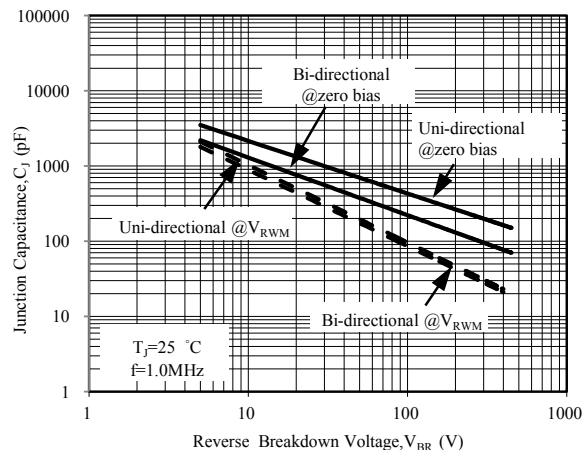


Fig. 6 - Typical Junction Capacitance

PACKAGE	SPQ/PCS	CARTON SPQ/PCS	CARTON SIZE/CM	CARTON GW/KG	CARTON NW/KG
SMC	3000/REEL	42000	36X36X36.5	18.50	15.50