

## V. Transient Voltage Suppressor

### 5000W Surface Mount TVS (Reverse Stand-off Voltage: 11.0~400 Volts)

### 5.0SMDJ Series

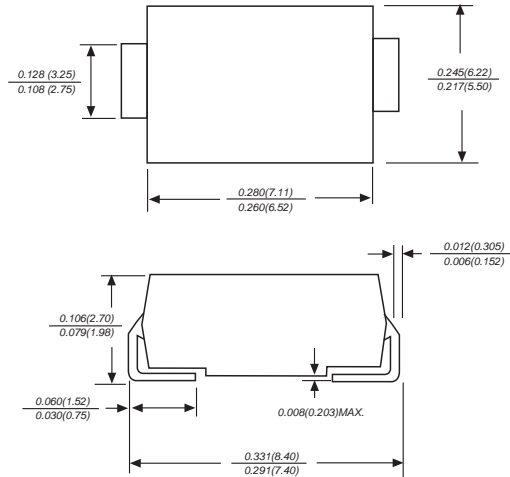
(Package: SMC (DO-214AB))

#### FEATURES

- Glass passivated chip
- 5000W peak pulse power capability with a 10/1000µs waveform, repetitive rate (duty cycle): 0.01%
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

#### MECHANICAL DATA

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



Case: SMC  
Dimensions in inches and (millimetres)

### Devices for Bi-Directional Applications

For bi-directional devices use suffix "CA" for types 5.0SMDJ11CA thru 5.0SMDJ400CA (e.g. 5.0SMDJ28CA)  
Electrical characteristics apply in both directions.

### Maximum Ratings, Thermal & Electrical Characteristics

(Ratings at 25 ambient temperature unless otherwise specified)

Ratings	Symbol	Value	Units
Peak power dissipation with a 10/1000µs waveform <sup>(1)</sup>	P <sub>PPM</sub>	5000	Watts
Peak pulse current with a 10/1000µs waveform <sup>(1)</sup>	I <sub>PPM</sub>	See next table	Amps
Power dissipation on infinite heatsink at T <sub>L</sub> = 75	P <sub>D</sub>	6.5	Watts
Peak forward surge current, 8.3ms single half sine-wave unidirectional only <sup>(2)</sup>	I <sub>FSM</sub>	300	Amps
Maximum instantaneous forward voltage at 100A for unidirectional only <sup>(3)</sup>	V <sub>F</sub>	3.5/6.5	Volts
Operating junction and storage temperature range	T <sub>j</sub> , T <sub>stg</sub>	-55 to +150	

Note:

1. Non-repetitive current pulse per Fig.5 and derated above Ta = 25 per Fig.1
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
3. V<sub>F</sub><3.5V for devices of V(BR)<200V and V<sub>F</sub><6.5V for devices of V(BR)>201V

**V. Transient Voltage Suppressor**

**5000W Surface Mount TVS (Reverse Stand-off Voltage: 11.0~400 Volts)**

**5.0SMDJ Series**

**(Package: SMC (DO-214AB))**

Device Type	Device Marking Code			Reverse Stand-off Voltage	Breakdown Voltage $V_{(BR)}$ @ $I_T$		Test Current	Max. Clamping Voltage @ $I_{PPM}$	Max. Peak Pulse Current	Max. Reverse Leakage @ $V_{RWM}$
	Option 1	Option 2			Min (V)	Max (V)				
	Full Part number	UNI-	BI-	$V_{RWM}$ (V)			$I_T$ (mA)	$V_C$ Max.(V)	$I_{PPM}$ (A)	$I_R$ ( $\mu$ A)
5.0SMDJ11(C)A	Full PN	5PEN	5BEN	11.0	12.20	13.50	10	18.2	277.47	800
5.0SMDJ12(C)A	Full PN	5PEP	5BEP	12.0	13.30	14.70	10	19.9	253.77	800
5.0SMDJ13(C)A	Full PN	5PEQ	5BEQ	13.0	14.40	15.90	10	21.5	234.88	500
5.0SMDJ14(C)A	Full PN	5PER	5BER	14.0	15.60	17.20	10	23.2	217.67	200
5.0SMDJ15(C)A	Full PN	5PES	5BES	15.0	16.70	18.50	1	24.4	206.97	100
5.0SMDJ16(C)A	Full PN	5PET	5BET	16.0	17.80	19.70	1	26.0	194.23	50
5.0SMDJ17(C)A	Full PN	5PEU	5BEU	17.0	18.90	20.90	1	27.6	182.97	20
5.0SMDJ18(C)A	Full PN	5PEV	5BEV	18.0	20.00	22.10	1	29.2	172.95	10
5.0SMDJ20(C)A	Full PN	5PEW	5BEW	20.0	22.20	24.50	1	32.4	155.86	5
5.0SMDJ22(C)A	Full PN	5PEX	5BEX	22.0	24.40	26.90	1	35.5	142.25	5
5.0SMDJ24(C)A	Full PN	5PEZ	5BEZ	24.0	26.70	29.50	1	38.9	129.82	5
5.0SMDJ26(C)A	Full PN	5PFE	5BFE	26.0	28.90	31.90	1	42.1	119.95	5
5.0SMDJ28(C)A	Full PN	5PFG	5BFG	28.0	31.10	34.40	1	45.4	111.23	5
5.0SMDJ30(C)A	Full PN	5PFK	5BFK	30.0	33.30	36.80	1	48.4	104.34	5
5.0SMDJ33(C)A	Full PN	5PFM	5BFM	33.0	36.70	40.60	1	53.3	94.75	5
5.0SMDJ36(C)A	Full PN	5PFP	5BFP	36.0	40.00	44.20	1	58.1	86.92	5
5.0SMDJ40(C)A	Full PN	5PFR	5BFR	40.0	44.40	49.10	1	64.5	78.29	5
5.0SMDJ43(C)A	Full PN	5PFT	5BFT	43.0	47.80	52.80	1	69.4	72.77	5
5.0SMDJ45(C)A	Full PN	5PFV	5BFV	45.0	50.00	55.30	1	72.7	69.46	5
5.0SMDJ48(C)A	Full PN	5PFX	5BFX	48.0	53.30	58.90	1	77.4	65.25	5
5.0SMDJ51(C)A	Full PN	5PFZ	5BFZ	51.0	56.70	62.70	1	82.4	61.29	5
5.0SMDJ54(C)A	Full PN	5PGE	5BGE	54.0	60.00	66.30	1	87.1	57.98	5
5.0SMDJ58(C)A	Full PN	5PGG	5BGG	58.0	64.40	71.20	1	93.6	53.95	5
5.0SMDJ60(C)A	Full PN	5PGK	5BGK	60.0	66.70	73.70	1	96.8	52.17	5
5.0SMDJ64(C)A	Full PN	5PGM	5BGM	64.0	71.10	78.60	1	103.0	49.03	5
5.0SMDJ70(C)A	Full PN	5PGP	5BGP	70.0	77.80	86.00	1	113.0	44.69	5
5.0SMDJ75(C)A	Full PN	5PGR	5BGR	75.0	83.30	92.10	1	121.0	41.74	5
5.0SMDJ78(C)A	Full PN	5PGT	5BGT	78.0	86.70	95.80	1	126.0	40.08	5
5.0SMDJ85(C)A	Full PN	5PGV	5BGV	85.0	94.40	104.0	1	137.0	36.86	5
5.0SMDJ90(C)A	Full PN	5PGX	5BGX	90.0	100.0	111.0	1	146.0	34.59	5
5.0SMDJ100(C)A	Full PN	5PGZ	5BGZ	100.0	111.0	123.0	1	162.0	31.17	5
5.0SMDJ110(C)A	Full PN	5PHE	5BHE	110.0	122.0	135.0	1	177.0	28.53	5
5.0SMDJ120(C)A	Full PN	5PHG	5BHG	120.0	133.0	147.0	1	193.0	26.17	5
5.0SMDJ130(C)A	Full PN	5PHK	5BHK	130.0	144.0	159.0	1	209.0	24.16	5
5.0SMDJ150(C)A	Full PN	5PHM	5BHM	150.0	155.0	171.0	1	226.8	22.27	5
5.0SMDJ160(C)A	Full PN	5PHP	5BHP	160.0	167.0	185.0	1	243.0	20.78	5
5.0SMDJ170(C)A	Full PN	5PHR	5BHR	170.0	178.0	197.0	1	259.0	19.50	5
5.0SMDJ180(C)A	Full PN	5PHT	5BHT	180.0	189.0	209.0	1	275.0	18.36	5
5.0SMDJ190(C)A	Full PN	5PHV	5DHV	190.0	200.0	220.0	1	291.6	17.32	5
5.0SMDJ200(C)A	Full PN	5PHX	5DHX	200.0	211.0	232.0	1	307.8	16.41	5
5.0SMDJ210(C)A	Full PN	5PHZ	5DHZ	210.0	224.0	247.0	1	324.0	15.59	5
5.0SMDJ220(C)A	Full PN	5PIE	5DIE	220.0	246.0	272.0	1	356.0	14.19	5
5.0SMDJ250(C)A	Full PN	5PIG	5DIG	250.0	279.0	309.0	1	405.0	12.47	5
5.0SMDJ300(C)A	Full PN	5PIK	5DIK	300.0	335.0	371.0	1	486.0	10.39	5
5.0SMDJ350(C)A	Full PN	5PIM	5DIM	350.0	391.0	432.0	1	567.0	8.91	5
5.0SMDJ400(C)A	Full PN	5PIP	5DIP	400.0	447.0	494.0	1	648.0	7.79	5

## Ratings and Characteristic Curves of 5.0SMDJ Series

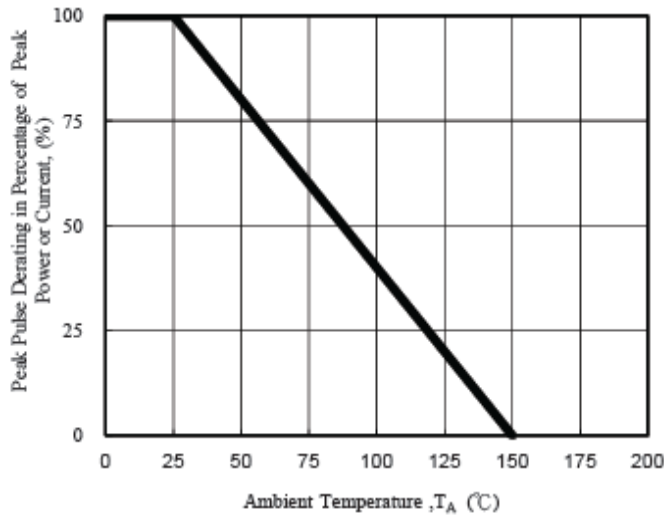


Fig. 1 - Pulse Derating Curve

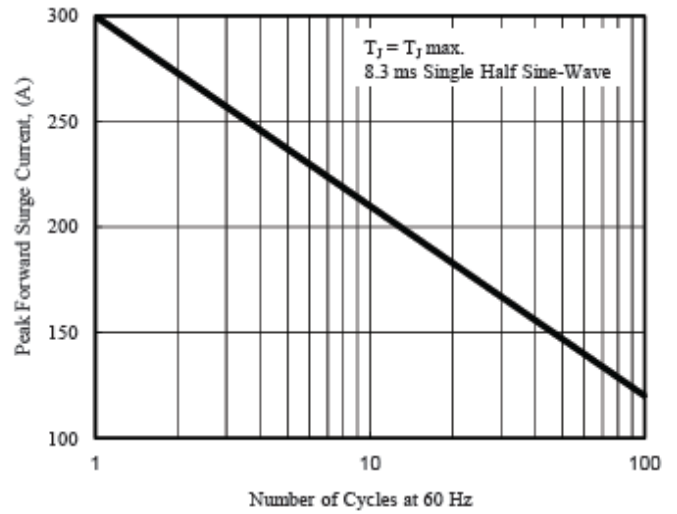


Fig. 2 - Maximum Non-Repetitive Surge Current

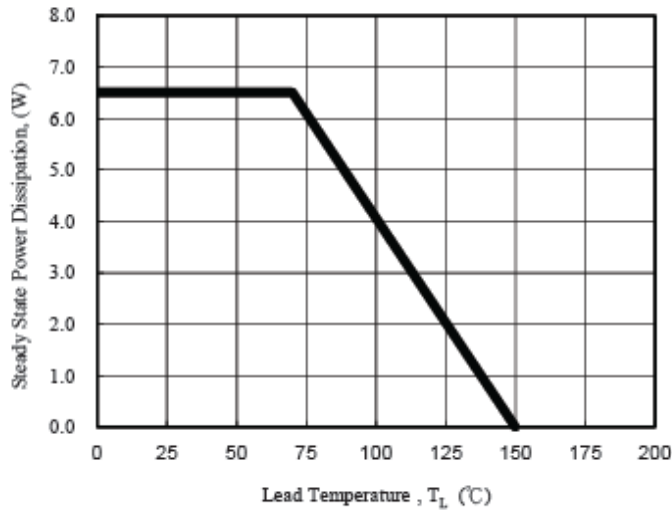


Fig. 3 - Steady State Power Derating Curve

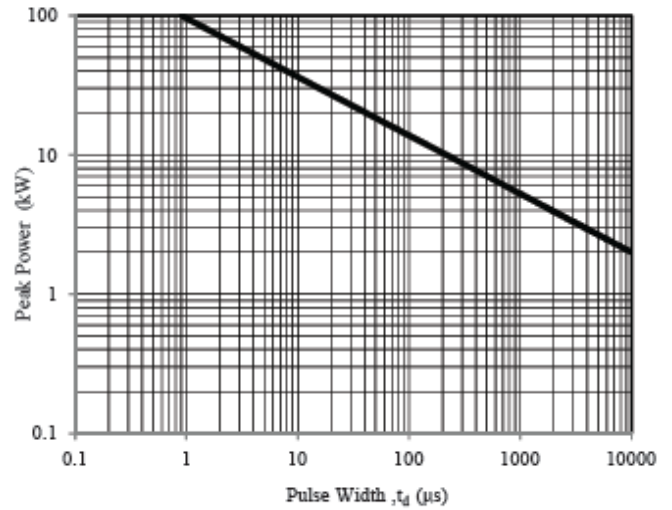


Fig. 4 - Peak Pulse Power Rating Curve

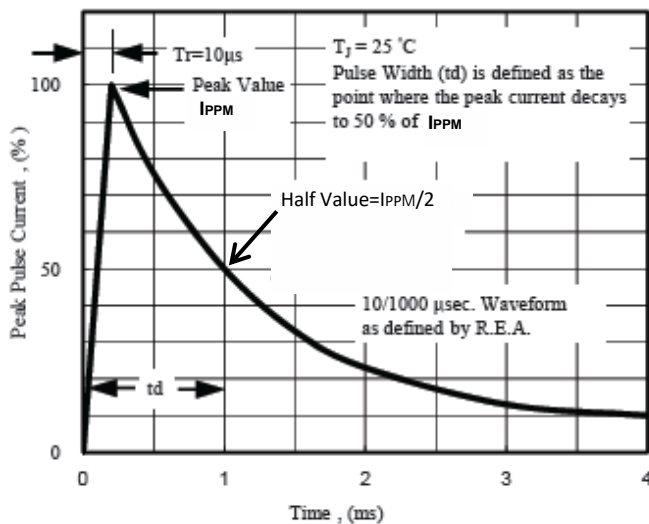


Fig. 5 - Pulse Waveform

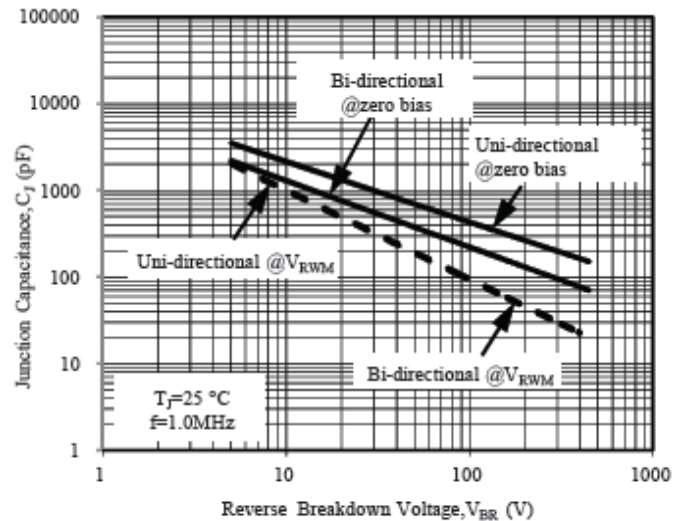


Fig. 6 - Typical Junction Capacitance