

## V. Transient Voltage Suppressor

### 1500W Surface Mount TVS (Stand-off Voltage: 5.0~440 Volts)

#### SMCJ Series

(Package: SMC (DO-214AB))

<p><b>FEATURES</b></p> <ul style="list-style-type: none"> <li>• Plastic package has Underwriters Laboratory Flammability Classification 94V-0.</li> <li>• Glass passivated junction.</li> <li>• 1500W peak pulse power capability.</li> <li>• Excellent clamping capability.</li> <li>• Low incremental surge resistance.</li> <li>• Fast response time.</li> </ul> <p><b>MECHANICAL DATA</b></p> <ul style="list-style-type: none"> <li>• Case : JEDEC DO-214AB molded plastic body over passivated junction.</li> <li>• Terminals : Solder plated, solderable per MIL-STD-202, method 208</li> <li>• Polarity : Color band denotes cathode except for bi-directional types.</li> <li>• Mounting Position : Any</li> <li>• Weight : 0.220 grams</li> </ul>	<p>Case: SMC Dimensions in inches and (millimetres)</p>
---	---

### Devices for Bi-Directional Applications

For bi-directional devices, use suffix "CA" for types SMCJ5.0CA thru SMCJ440CA (e.g. SMCJ10CA). Electrical characteristics apply in both directions.

### Maximum Ratings, Thermal & Electrical Characteristics

(Ratings at 25°C ambient temperature unless otherwise specified)

Ratings	Symbol	Value	Units
Peak pulse power dissipation (Non-repetitive current pulse derated above Ta=25°C) <sup>(1)</sup>	P <sub>PPM</sub>	Minimum 1500	Watts
Steady state power dissipation @ T <sub>L</sub> =75°C	P <sub>M(AV)</sub>	5.0	Watts
Peak forward surge current, 8.3ms single half sine-wave Superimposed on rated load (JEDEC Method) <sup>(1) (2) (3)</sup>	I <sub>FSM</sub>	200	Amps
Maximum instantaneous forward voltage at 100 A <sup>(1) (2) (3)</sup>	V <sub>F</sub>	3.5	Volts
Operating junction temperature range	T <sub>j</sub>	-55 to +150	°C
Storage temperature range	T <sub>stg</sub>	-55 to +175	°C

Note:

1. Valid provided that terminals are kept at ambient temperature.
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
3. For uni-directional devices only.

<http://patron-components.com/>

## V. TVS & Overvoltage Protection Device

**1500W Surface Mount TVS (Stand-off Voltage: 5.0~440 Volts)**

**SMCJ Series**

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

Device Type	Device Marking Code			Breakdown Voltage $V_{(BR)}$ @1T			Maximum Reverse Leakage $I_R(\mu A)$ @ $V_{WM}$	Stand-off Voltage $V_{WM}$ (Volts)	Maximum Peak Pulse Current $I_{PPM}$ (A)	Maximum Clamping Voltage $V_c$ (Volts) @ $I_{PPM}$
	Option 1	Option 2		Min (V)	Max (V)	$I_T$ (mA)				
	Full Part number	Uni	Bi							
SMCJ5.0(C)A	Full PN	GDE	BDE	6.40	7.00	10	800	5.0	163.0	9.20
SMCJ6.0(C)A	Full PN	GDG	BDG	6.67	7.37	10	800	6.0	145.7	10.3
SMCJ6.5(C)A	Full PN	GDK	BDK	7.22	7.98	10	500	6.5	134.0	11.2
SMCJ7.0(C)A	Full PN	GDM	BDM	7.78	8.60	10	200	7.0	125.0	12.0
SMCJ7.5(C)A	Full PN	GDP	BDP	8.33	9.21	1	100	7.5	116.3	12.9
SMCJ8.0(C)A	Full PN	GDR	BDR	8.89	9.83	1	50	8.0	110.3	13.6
SMCJ8.5(C)A	Full PN	GDT	BDT	9.44	10.4	1	20	8.5	104.2	14.4
SMCJ9.0(C)A	Full PN	GDV	BDV	10.0	11.1	1	10	9.0	97.4	15.4
SMCJ10(C)A	Full PN	GDX	BDX	11.1	12.3	1	5.0	10.0	88.3	17.0
SMCJ11(C)A	Full PN	GDZ	BDZ	12.2	13.5	1	5.0	11.0	82.5	18.2
SMCJ12(C)A	Full PN	GEE	BEE	13.3	14.7	1	5.0	12.0	75.4	19.9
SMCJ13(C)A	Full PN	GEG	BEG	14.4	15.9	1	5.0	13.0	69.8	21.5
SMCJ14(C)A	Full PN	GEK	BEK	15.6	17.2	1	5.0	14.0	64.7	23.2
SMCJ15(C)A	Full PN	GEM	BEM	16.7	18.5	1	5.0	15.0	61.5	24.4
SMCJ16(C)A	Full PN	GEP	BEP	17.8	19.7	1	5.0	16.0	57.7	26.0
SMCJ17(C)A	Full PN	GER	BER	18.9	20.9	1	5.0	17.0	54.4	27.6
SMCJ18(C)A	Full PN	GET	BET	20.0	22.1	1	5.0	18.0	51.4	29.2
SMCJ20(C)A	Full PN	GEV	BEV	22.2	24.5	1	5.0	20.0	46.3	32.4
SMCJ22(C)A	Full PN	GEX	BEX	24.4	26.9	1	5.0	22.0	42.3	35.5
SMCJ24(C)A	Full PN	GEZ	BEZ	26.7	29.5	1	5.0	24.0	38.6	38.9
SMCJ26(C)A	Full PN	GFE	BFE	28.9	31.9	1	5.0	26.0	35.7	42.1
SMCJ28(C)A	Full PN	GFG	BFG	31.1	34.4	1	5.0	28.0	33.1	45.4
SMCJ30(C)A	Full PN	GFK	BFK	33.3	36.8	1	5.0	30.0	31.0	48.4
SMCJ33(C)A	Full PN	GFM	BFM	36.7	40.6	1	5.0	33.0	28.2	53.3
SMCJ36(C)A	Full PN	GFP	BFP	40.0	44.2	1	5.0	36.0	25.9	58.1
SMCJ40(C)A	Full PN	GFR	BFR	44.4	49.1	1	5.0	40.0	23.3	64.5
SMCJ43(C)A	Full PN	GFT	BFT	47.8	52.8	1	5.0	43.0	21.7	69.4
SMCJ45(C)A	Full PN	GFV	BFV	50.0	55.3	1	5.0	45.0	20.6	72.7
SMCJ48(C)A	Full PN	GFX	BFX	53.3	58.9	1	5.0	48.0	19.4	77.4
SMCJ51(C)A	Full PN	GFZ	BFZ	56.7	62.7	1	5.0	51.0	18.2	82.4
SMCJ54(C)A	Full PN	GGE	BGE	60.0	66.3	1	5.0	54.0	17.3	87.1
SMCJ58(C)A	Full PN	GGG	BGG	64.4	71.2	1	5.0	58.0	16.1	93.6
SMCJ60(C)A	Full PN	GGK	BGK	66.7	73.7	1	5.0	60.0	15.5	96.8
SMCJ64(C)A	Full PN	GGM	BGM	71.1	78.6	1	5.0	64.0	14.6	103
SMCJ70(C)A	Full PN	GGP	BGP	77.8	86.0	1	5.0	70.0	13.3	113
SMCJ75(C)A	Full PN	GGR	BGR	83.3	92.1	1	5.0	75.0	12.4	121
SMCJ78(C)A	Full PN	GGT	BGT	86.7	95.8	1	5.0	78.0	11.9	126
SMCJ85(C)A	Full PN	GGV	BGV	94.4	104	1	5.0	85.0	11.0	137
SMCJ90(C)A	Full PN	GGX	BGX	100	111	1	5.0	90	10.3	146
SMCJ100(C)A	Full PN	GGZ	BGZ	111	123	1	5.0	100	9.3	162
SMCJ110(C)A	Full PN	GHE	BHE	122	135	1	5.0	110	8.5	177
SMCJ120(C)A	Full PN	GHG	BHG	133	147	1	5.0	120	7.8	193
SMCJ130(C)A	Full PN	GHK	BHK	144	159	1	5.0	130	7.2	209
SMCJ150(C)A	Full PN	GHM	BHM	167	185	1	5.0	150	6.2	243
SMCJ160(C)A	Full PN	GHP	BHP	178	197	1	5.0	160	5.8	259
SMCJ170(C)A	Full PN	GHR	BHR	189	209	1	5.0	170	5.5	275
SMCJ180(C)A	Full PN	GHT	BHT	201	222	1	5.0	180	5.1	292
SMCJ200(C)A	Full PN	GHV	BHV	224	247	1	5.0	200	4.6	324
SMCJ220(C)A	Full PN	GHX	BHX	246	272	1	5.0	220	4.2	356
SMCJ250(C)A	Full PN	GHZ	BHZ	279	309	1	5.0	250	3.7	405
SMCJ300(C)A	Full PN	GJE	BJE	335	371	1	5.0	300	3.1	486
SMCJ350(C)A	Full PN	GJG	BJG	391	432	1	5.0	350	2.6	567
SMCJ400(C)A	Full PN	GJK	BJK	447	494	1	5.0	400	2.3	648
SMCJ440(C)A	Full PN	GJM	BJM	492	543	1	5.0	440	2.1	713

## Ratings and Characteristic Curves of SMCJ Series

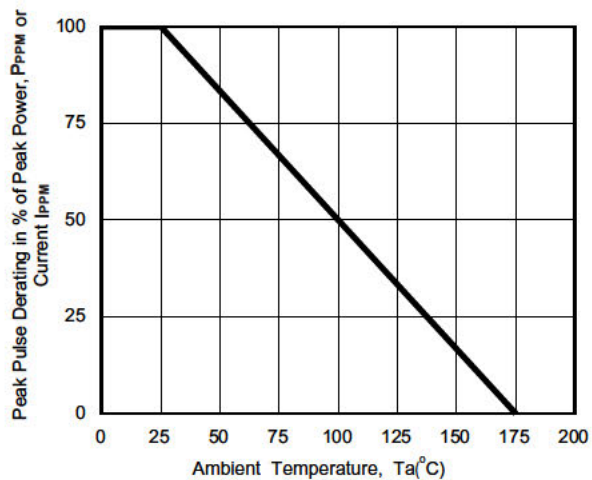


Fig. 1 - Pulse Derating Curve

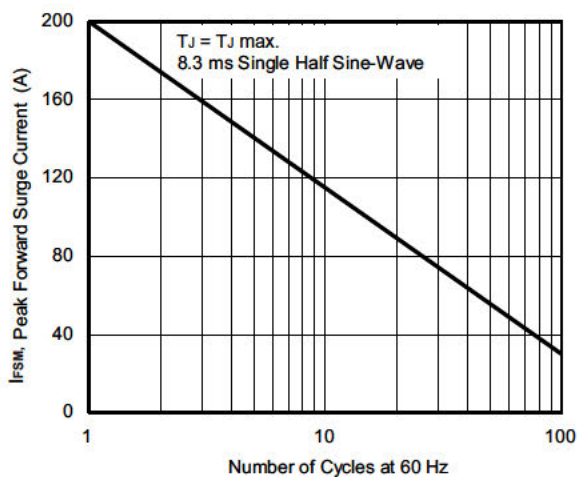


Fig. 2 - Maximum Non-Repetitive Surge Current

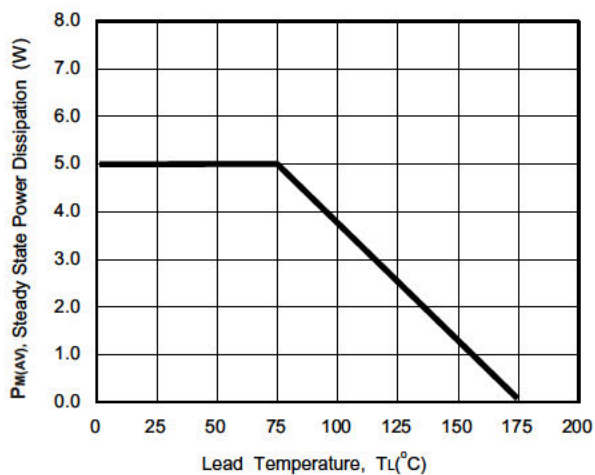


Fig. 3 - Steady State Power Derating Curve

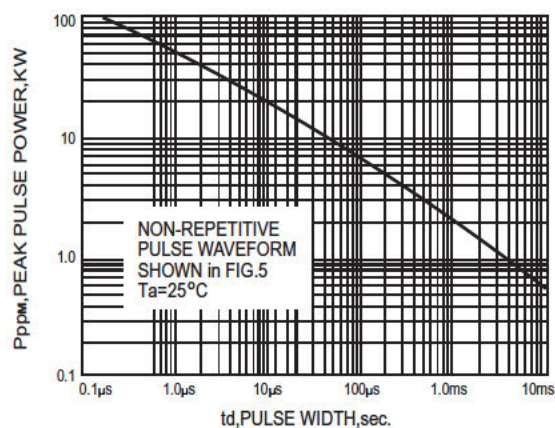


Fig. 4 - Peak Pulse Power Rating Curve

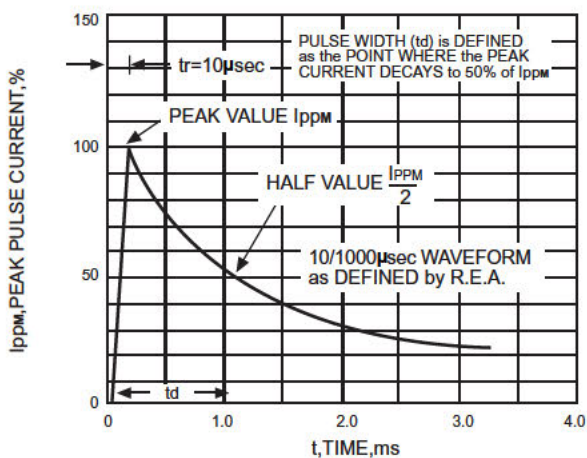


Fig. 5 - Pulse Waveform