

Transient Voltage Suppressor

3.0SMCJ5.0CA - 3.0SMCJ440CA

Features

- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 3000W peak pulse power capability with very fast response time
- High temperature soldering guaranteed: 260°C / 10s at terminals
- Bi-Directional Types
- RoHS compliant with Halogen-free



Mechanical Data

- Case: SMC molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208

Maximum Ratings (@T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000μs waveform ^{*1} (FIG.1)	P _{PPM}	3000	W
Peak pulse current with a 10/1000μs waveform ^{*1}	I _{PP}	see E. Characteristics	A
Typical Thermal Resistance ^{*2}	R _{θJA}	56	°C/W
	R _{θJC}	23	
	R _{θJL}	14	
Operating junction and storage temperature range	T _J , T _{STG}	-55 ~ +150	°C

Note *1: Non-repetitive current pulses, per Fig. 3 and derated above T_A = 25°C

Note *2: Device mounted on p.c.b. with 10 mm x 20 mm x 0.1 mm copper pad area

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Electrical Characteristics (@T_A = 25°C unless otherwise specified)

Type	Breakdown Voltage V _{BR} @I _T		Test Current	Reverse Standoff Voltage	Max. Reverse Leakage@ V _{RWM}	Max. Peak Pulse Current	Max. Clamping Voltage @I _{PP}
	V		I _T	V _{RWM}	I _R	I _{PP}	V _C
	Min	Max	mA	V	uA	A	V
3.0SMCJ5.0CA	6.4	7.07	10	5	1000	326.1	9.2
3.0SMCJ6.0CA	6.67	7.37	10	6	1000	291.3	10.3
3.0SMCJ6.5CA	7.22	7.98	10	6.5	500	267.9	11.2
3.0SMCJ6.8CA	7.56	8.35	10	6.8	500	250	12
3.0SMCJ7.0CA	7.78	8.6	10	7	200	250	12
3.0SMCJ7.5CA	8.33	9.21	1	7.5	100	232.6	12.9
3.0SMCJ8.0CA	8.89	9.83	1	8	50	220.6	13.6
3.0SMCJ8.5CA	9.44	10.4	1	8.5	20	208.3	14.4
3.0SMCJ9.0CA	10	11.1	1	9	10	194.8	15.4
3.0SMCJ10CA	11.1	12.3	1	10	5	176.5	17
3.0SMCJ11CA	12.2	13.5	1	11	1	164.8	18.2
3.0SMCJ12CA	13.3	14.7	1	12	1	150.8	19.9
3.0SMCJ13CA	14.4	15.9	1	13	1	139.5	21.5
3.0SMCJ14CA	15.6	17.2	1	14	1	129.3	23.2
3.0SMCJ15CA	16.7	18.5	1	15	1	123	24.4
3.0SMCJ16CA	17.8	19.7	1	16	1	115.4	26
3.0SMCJ17CA	18.9	20.9	1	17	1	108.7	27.6
3.0SMCJ18CA	20	22.1	1	18	1	102.7	29.2
3.0SMCJ20CA	22.2	24.5	1	20	1	92.6	32.4
3.0SMCJ22CA	24.4	26.9	1	22	1	84.5	35.5
3.0SMCJ24CA	26.7	29.5	1	24	1	77.1	38.9
3.0SMCJ26CA	28.9	31.9	1	26	1	71.3	42.1
3.0SMCJ28CA	31.1	34.4	1	28	1	66.1	45.4
3.0SMCJ30CA	33.3	36.8	1	30	1	62	48.4
3.0SMCJ33CA	36.7	40.6	1	33	1	56.3	53.3
3.0SMCJ36CA	40	44.2	1	36	1	51.6	58.1
3.0SMCJ40CA	44.4	49.1	1	40	1	46.5	64.5
3.0SMCJ43CA	47.8	52.8	1	43	1	43.2	69.4
3.0SMCJ45CA	50	55.3	1	45	1	41.3	72.7
3.0SMCJ48CA	53.3	58.9	1	48	1	38.8	77.4

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Type	Breakdown Voltage $V_{BR}@I_T$		Test Current	Reverse Standoff Voltage	Max. Reverse Leakage@ V_{RWM}	Max. Peak Pulse Current	Max. Clamping Voltage @ I_{PP}
	V		I_T	V_{RWM}	I_R	I_{PP}	V_C
	Min	Max	mA	V	uA	A	V
3.0SMCJ51CA	56.7	62.7	1	51	1	36.4	82.4
3.0SMCJ54CA	60	66.3	1	54	1	34.4	87.1
3.0SMCJ58CA	64.4	71.2	1	58	1	32.1	93.6
3.0SMCJ60CA	66.7	73.7	1	60	1	31	96.8
3.0SMCJ64CA	71.1	78.6	1	64	1	29.1	103
3.0SMCJ68CA	75.5	83.5	1	68	1	27.5	109
3.0SMCJ70CA	77.8	86	1	70	1	26.5	113
3.0SMCJ75CA	83.3	92.1	1	75	1	24.8	121
3.0SMCJ78CA	86.7	95.8	1	78	1	23.8	126
3.0SMCJ85CA	94.4	104	1	85	1	21.9	137
3.0SMCJ90CA	100	111	1	90	1	20.5	146
3.0SMCJ100CA	111	123	1	100	1	18.5	162
3.0SMCJ110CA	122	135	1	110	1	16.9	177
3.0SMCJ120CA	133	147	1	120	1	15.5	193
3.0SMCJ130CA	144	159	1	130	1	14.4	209
3.0SMCJ150CA	167	185	1	150	1	12.3	243
3.0SMCJ160CA	178	197	1	160	1	11.6	259
3.0SMCJ170CA	189	209	1	170	1	10.9	275
3.0SMCJ188CA	209	231	1	188	1	9.1	328
3.0SMCJ200CA	222	246	1	200	1	9.3	323
3.0SMCJ220CA	245	270	1	220	1	8.5	355
3.0SMCJ240CA	267	295	1	240	1	7.7	388
3.0SMCJ250CA	278	307	1	250	1	7.4	404
3.0SMCJ300CA	333	368	1	300	1	6.2	485
3.0SMCJ350CA	389	429	1	350	1	5.3	566
3.0SMCJ360CA	400	442	1	360	1	5.2	582
3.0SMCJ400CA	445	491	1	400	1	4.6	646
3.0SMCJ440CA	489	540	1	440	1	4.2	711

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

Fig.1 Peak Pulse Power Rating Curve

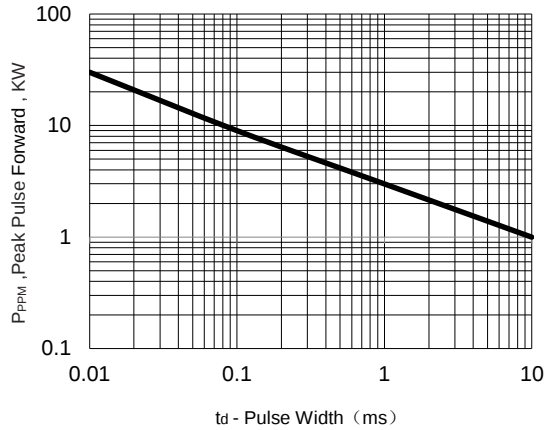


Fig.2 DERATING CURVE

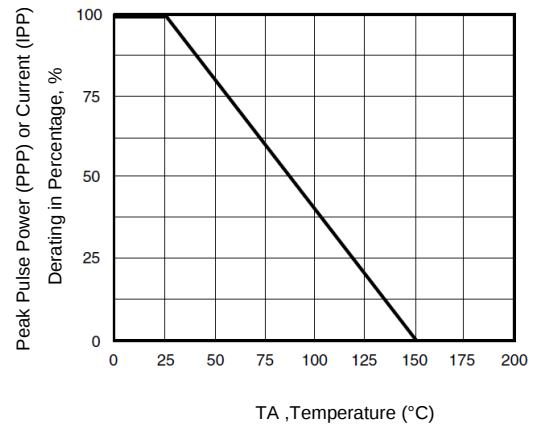
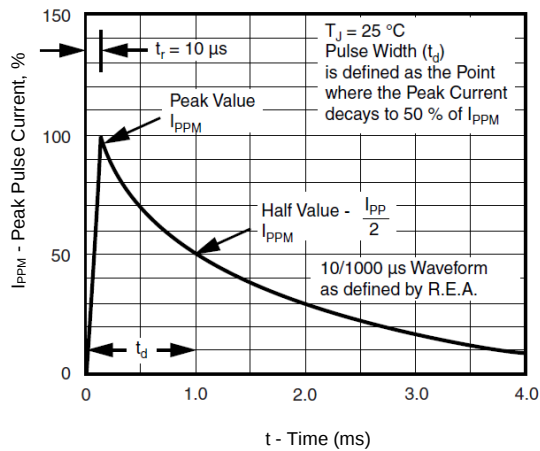


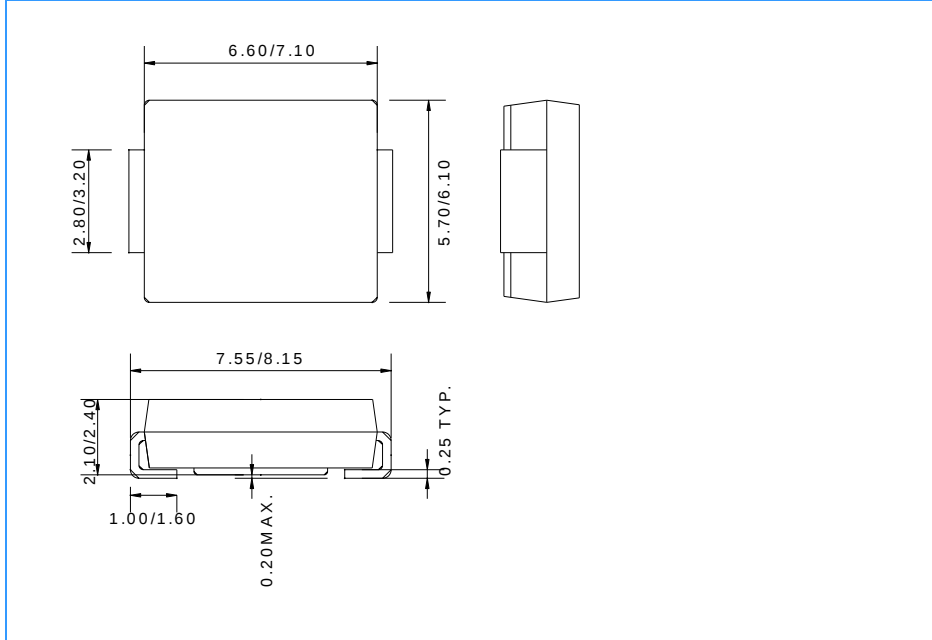
Fig.3 Pulse Waveform



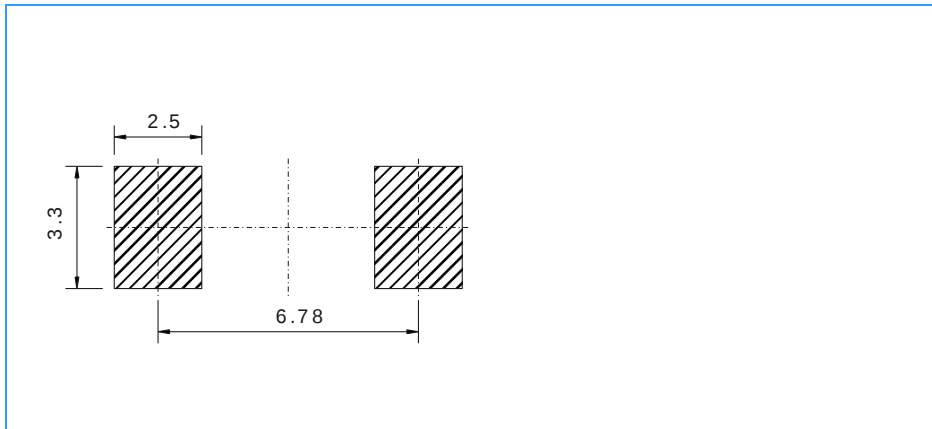
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Package Outline Dimensions (unit:mm)



Mounting Pad Layout (unit:mm)



Ordering Information

Part Number	Package	Shipping Quantity
3.0SMCJ5.0CA - 3.0SMCJ440CA	SMC	3000 / Tape & Reel