

Transient Voltage Suppressor

1.0SMBJ5.0CA - 1.0SMBJ440CA

Features

- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 1000W peak pulse power capability with very fast response time
- High temperature soldering guaranteed: 260°C / 10s at terminals
- Bi-directional applications
- RoHS compliant with Halogen-free



Mechanical Data

- Case: SMB 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	P _{PPM}	1000	W
Peak pulse current with a 10/1000μs waveform *1	I _{PP}	see E. Characteristics	A
Typical Thermal Resistance *2	R _{θJA}	60	°C/W
	R _{θJC}	23	
	R _{θJL}	25	
Operating junction and storage temperature range	T _J , T _{STG}	-55 ~ +150	°C

Note *1: Non-repetitive current pulses

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	μA	A	V
1.0SMBJ5.0CA	6.4	7.07	10	5	800	108.6	9.2
1.0SMBJ6.8CA	7.56	8.35	10	6.8	500	83.3	12
1.0SMBJ7.0CA	7.78	8.6	10	7	200	83.3	12
1.0SMBJ7.5CA	8.33	9.21	1	7.5	100	77.5	12.9
1.0SMBJ8.0CA	8.89	9.83	1	8	50	73.5	13.6
1.0SMBJ8.5CA	9.44	10.4	1	8.5	20	69.4	14.4
1.0SMBJ9.0CA	10	11.1	1	9	10	64.9	15.4
1.0SMBJ10CA	11.1	12.3	1	10	5	58.8	17
1.0SMBJ11CA	12.2	13.5	1	11	1	54.9	18.2
1.0SMBJ12CA	13.3	14.7	1	12	1	50.3	19.9
1.0SMBJ13CA	14.4	15.9	1	13	1	47.6	21
1.0SMBJ14CA	15.6	17.2	1	14	1	43.1	23.2
1.0SMBJ15CA	16.7	18.5	1	15	1	41	24.4
1.0SMBJ16CA	17.8	19.7	1	16	1	38.5	26
1.0SMBJ17CA	18.9	20.9	1	17	1	36.2	27.6
1.0SMBJ18CA	20	22.1	1	18	1	34.2	29.2
1.0SMBJ20CA	22.2	24.5	1	20	1	30.9	32.4
1.0SMBJ22CA	24.4	26.9	1	22	1	28.2	35.5
1.0SMBJ24CA	26.7	29.5	1	24	1	25.7	38.9
1.0SMBJ26CA	28.9	31.9	1	26	1	23.8	42.1
1.0SMBJ28CA	31.1	34.4	1	28	1	22	45.4
1.0SMBJ30CA	33.3	36.8	1	30	1	20.7	48.4
1.0SMBJ33CA	36.7	40.6	1	33	1	18.8	53.3
1.0SMBJ36CA	40	44.2	1	36	1	17.2	58.1
1.0SMBJ40CA	44.4	49.1	1	40	1	15.5	64.5
1.0SMBJ43CA	47.8	52.8	1	43	1	14.4	69.4
1.0SMBJ45CA	50	55.3	1	45	1	13.8	72.7
1.0SMBJ48CA	53.3	58.9	1	48	1	12.9	77.4
1.0SMBJ51CA	56.7	62.7	1	51	1	12.1	82.4
1.0SMBJ54CA	60	66.3	1	54	1	11.5	87.1

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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	μA	A	V
1.0SMBJ58CA	64.4	71.2	1	58	1	10.7	93.6
1.0SMBJ60CA	66.7	73.7	1	60	1	10.3	96.8
1.0SMBJ64CA	71.1	78.6	1	64	1	9.7	103
1.0SMBJ68CA	75.5	83.5	1	68	1	9.2	109
1.0SMBJ70CA	77.8	86	1	70	1	8.8	113
1.0SMBJ75CA	83.3	92.1	1	75	1	8.3	121
1.0SMBJ78CA	86.7	95.8	1	78	1	7.9	126
1.0SMBJ85CA	94.4	104	1	85	1	7.3	137
1.0SMBJ90CA	100	111	1	90	1	6.8	146
1.0SMBJ100CA	111	123	1	100	1	6.2	162
1.0SMBJ110CA	122	135	1	110	1	5.6	177
1.0SMBJ120CA	133	147	1	120	1	5.2	193
1.0SMBJ130CA	144	159	1	130	1	4.8	209
1.0SMBJ150CA	167	185	1	150	1	4.1	243
1.0SMBJ160CA	178	197	1	160	1	3.9	259
1.0SMBJ170CA	189	209	1	170	1	3.6	275
1.0SMBJ188CA	209	231	1	188	1	3	328
1.0SMBJ200CA	222	246	1	200	1	3.1	323
1.0SMBJ220CA	245	270	1	220	1	2.8	355
1.0SMBJ240CA	267	295	1	240	1	2.6	388
1.0SMBJ250CA	278	307	1	250	1	2.5	404
1.0SMBJ300CA	333	368	1	300	1	2.1	485
1.0SMBJ350CA	389	429	1	350	1	1.8	566
1.0SMBJ360CA	400	442	1	360	1	1.7	582
1.0SMBJ400CA	445	491	1	400	1	1.5	646
1.0SMBJ440CA	489	540	1	440	1	1.4	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

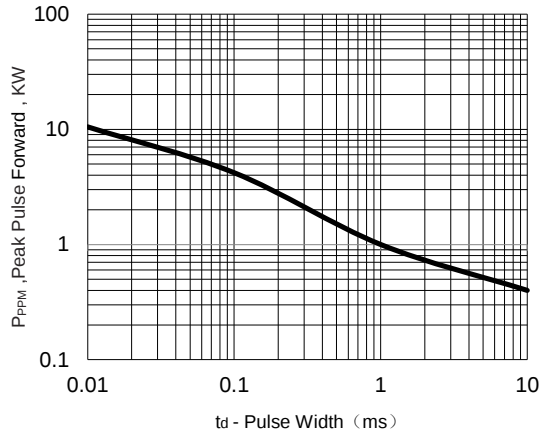


Fig.2 DERATING CURVE

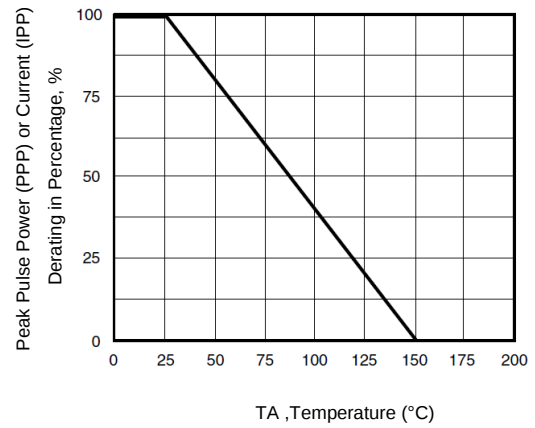
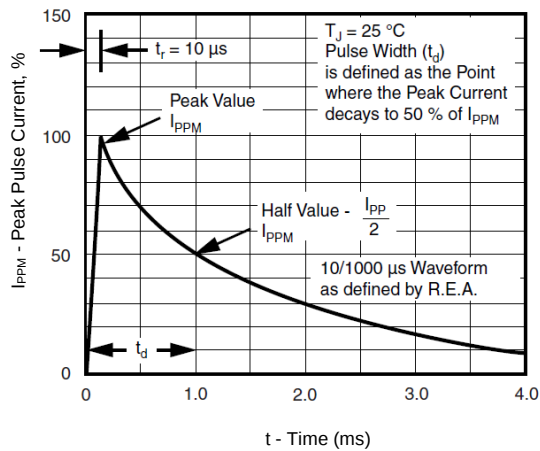


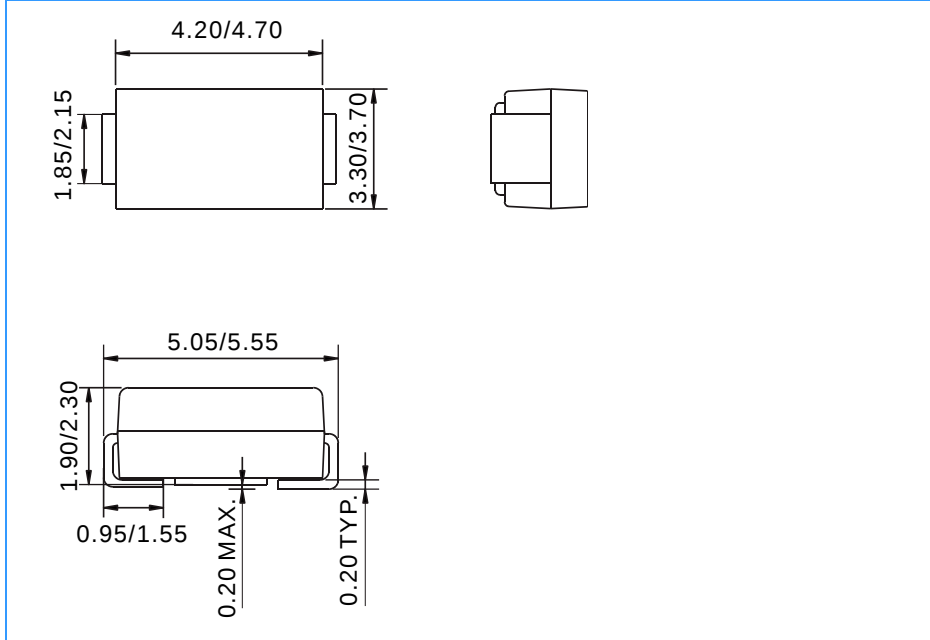
Fig.3 Pulse Waveform



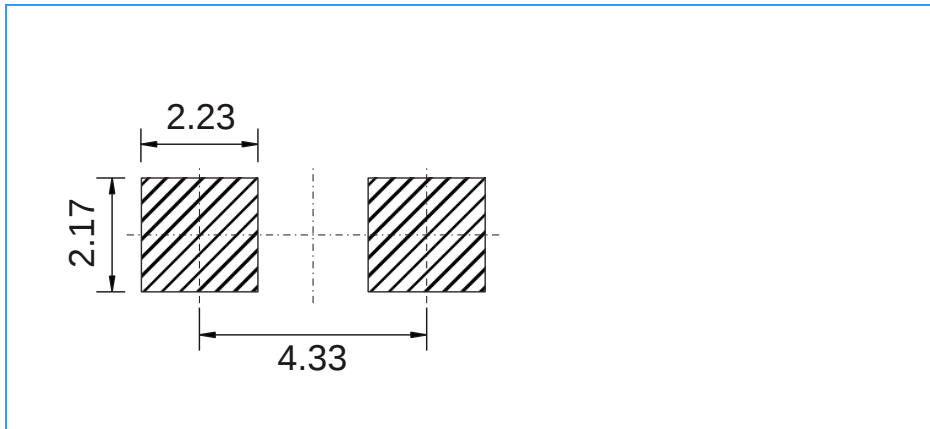
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

Part Number	Package	Package
1.0SMBJ5.0CA - 1.0SMBJ440CA	SMB	3000 / Tape & Reel