

Transient Voltage Suppressor

SMBJ5.0CA - SMBJ440CA

Features

- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 600W 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 (FIG.1)	P _{PPM}	600	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, 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	Marking	Breakdown Voltage V _{BR} @ I _r		Test Current	Reverse Standoff Voltage	Max. Reverse Leakage @ V _{RWM}	Max. Peak Pulse Current	Max. Clamping Voltage @ I _{PP}
		V		I _r	V _{RWM}	I _R	I _{PP}	V _C
		Min.	Max.	mA	V	μA	A	V
SMBJ5.0CA	SMBJ5.0CA	6.4	7.07	10	5	800	65.2	9.2
SMBJ6.0CA	SMBJ6.0CA	6.67	7.37	10	6	800	58.3	10.3
SMBJ6.5CA	SMBJ6.5CA	7.22	7.98	10	6.5	500	53.6	11.2
SMBJ6.8CA	SMBJ6.8CA	7.56	8.35	10	6.8	200	54.6	11
SMBJ7.0CA	SMBJ7.0CA	7.78	8.6	10	7	200	50	12
SMBJ7.5CA	SMBJ7.5CA	8.33	9.21	1	7.5	100	46.5	12.9
SMBJ8.0CA	SMBJ8.0CA	8.89	9.83	1	8	50	44.1	13.6
SMBJ8.5CA	SMBJ8.5CA	9.44	10.4	1	8.5	20	41.7	14.4
SMBJ9.0CA	SMBJ9.0CA	10	11.1	1	9	10	39	15.4
SMBJ10CA	SMBJ10CA	11.1	12.3	1	10	5	35.3	17
SMBJ11CA	SMBJ11CA	12.2	13.5	1	11	1	33	18.2
SMBJ12CA	SMBJ12CA	13.3	14.7	1	12	1	30.2	19.9
SMBJ13CA	SMBJ13CA	14.4	15.9	1	13	1	27.9	21.5
SMBJ14CA	SMBJ14CA	15.6	17.2	1	14	1	25.9	23.2
SMBJ15CA	SMBJ15CA	16.7	18.5	1	15	1	24.6	24.4
SMBJ16CA	SMBJ16CA	17.8	19.7	1	16	1	23.1	26
SMBJ17CA	SMBJ17CA	18.9	20.9	1	17	1	21.7	27.6
SMBJ18CA	SMBJ18CA	20	22.1	1	18	1	20.5	29.2
SMBJ20CA	SMBJ20CA	22.2	24.5	1	20	1	18.5	32.4
SMBJ22CA	SMBJ22CA	24.4	26.9	1	22	1	16.9	35.5
SMBJ24CA	SMBJ24CA	26.7	29.5	1	24	1	15.4	38.9
SMBJ26CA	SMBJ26CA	28.9	31.9	1	26	1	14.3	42.1
SMBJ28CA	SMBJ28CA	31.1	34.4	1	28	1	13.2	45.4
SMBJ30CA	SMBJ30CA	33.3	36.8	1	30	1	12.4	48.4
SMBJ33CA	SMBJ33CA	36.7	40.6	1	33	1	11.3	53.3
SMBJ34CA	SMBJ34CA	37.8	41.8	1	34	1	10.9	54.9
SMBJ36CA	SMBJ36CA	40	44.2	1	36	1	10.3	58.1
SMBJ40CA	SMBJ40CA	44.4	49.1	1	40	1	9.3	64.5
SMBJ43CA	SMBJ43CA	47.8	52.8	1	43	1	8.6	69.4
SMBJ45CA	SMBJ45CA	50	55.3	1	45	1	8.3	72.7

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Type	Marking	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_MAX}	I_{PP}	V_C
		Min.	Max.	mA	V	μA	A	V
SMBJ50CA	SMBJ50CA	55.5	61.4	1	50	1	7.4	80.7
SMBJ51CA	SMBJ51CA	56.7	62.7	1	51	1	7.3	82.4
SMBJ54CA	SMBJ54CA	60	66.3	1	54	1	6.9	87.1
SMBJ58CA	SMBJ58CA	64.4	71.2	1	58	1	6.4	93.6
SMBJ60CA	SMBJ60CA	66.7	73.7	1	60	1	6.2	96.8
SMBJ64CA	SMBJ64CA	71.1	78.6	1	64	1	5.8	103
SMBJ68CA	SMBJ68CA	75.5	83.5	1	68	1	5.5	109
SMBJ70CA	SMBJ70CA	77.8	86	1	70	1	5.3	113
SMBJ75CA	SMBJ75CA	83.3	92.1	1	75	1	5	121
SMBJ78CA	SMBJ78CA	86.7	95.8	1	78	1	4.8	126
SMBJ85CA	SMBJ85CA	94.4	104	1	85	1	4.4	137
SMBJ90CA	SMBJ90CA	100	111	1	90	1	4.1	146
SMBJ100CA	SMBJ100CA	111	123	1	100	1	3.7	162
SMBJ110CA	SMBJ110CA	122	135	1	110	1	3.4	177
SMBJ120CA	SMBJ120CA	133	147	1	120	1	3.1	193
SMBJ130CA	SMBJ130CA	144	159	1	130	1	2.9	209
SMBJ150CA	SMBJ150CA	167	185	1	150	1	2.5	243
SMBJ160CA	SMBJ160CA	178	197	1	160	1	2.3	259
SMBJ170CA	SMBJ170CA	189	209	1	170	1	2.2	275
SMBJ180CA	SMBJ180CA	200	221	1	180	1	2.1	291
SMBJ188CA	SMBJ188CA	209	231	1	188	1	2	328
SMBJ200CA	SMBJ200CA	222	246	1	200	1	1.9	323
SMBJ220CA	SMBJ220CA	245	270	1	220	1	1.7	355
SMBJ240CA	SMBJ240CA	267	295	1	240	1	1.5	388
SMBJ250CA	SMBJ250CA	278	307	1	250	1	1.5	404
SMBJ300CA	SMBJ300CA	333	368	1	300	1	1.2	485
SMBJ350CA	SMBJ350CA	389	430	1	350	1	1.1	565
SMBJ360CA	SMBJ360CA	400	442	1	360	1	1	582
SMBJ380CA	SMBJ380CA	422	467	1	380	1	1	614
SMBJ400CA	SMBJ400CA	445	491	1	400	1	0.9	646
SMBJ440CA	SMBJ440CA	489	540	1	440	1	0.8	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

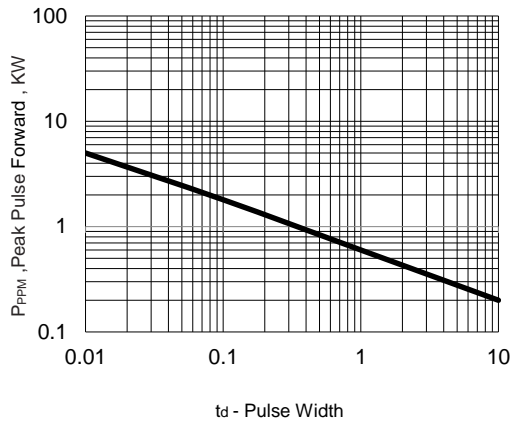


Fig.2 DERATING CURVE

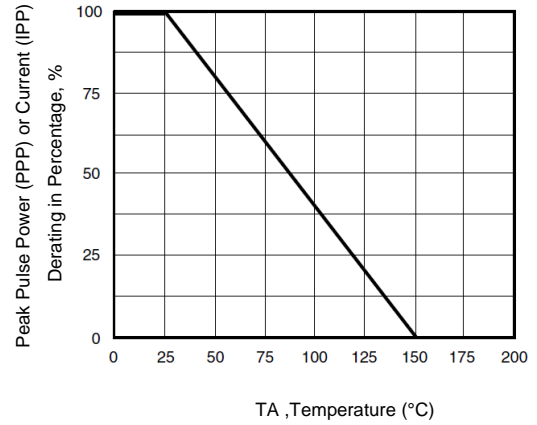
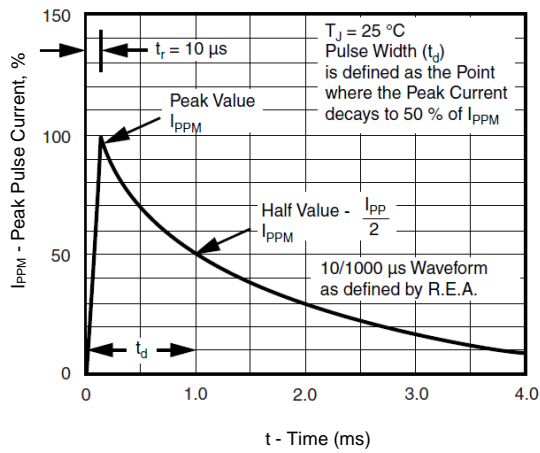


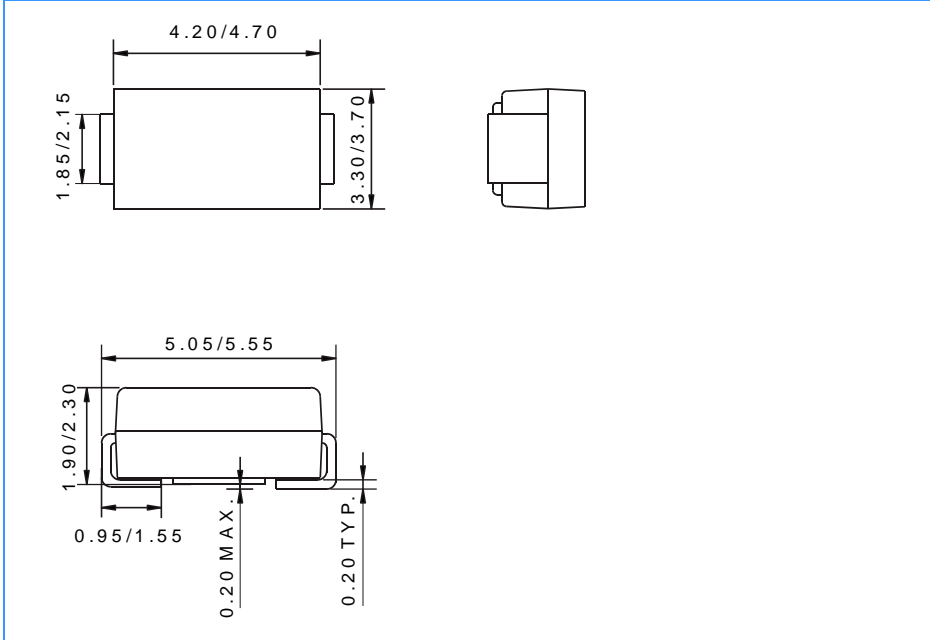
Fig.3 Pulse Waveform



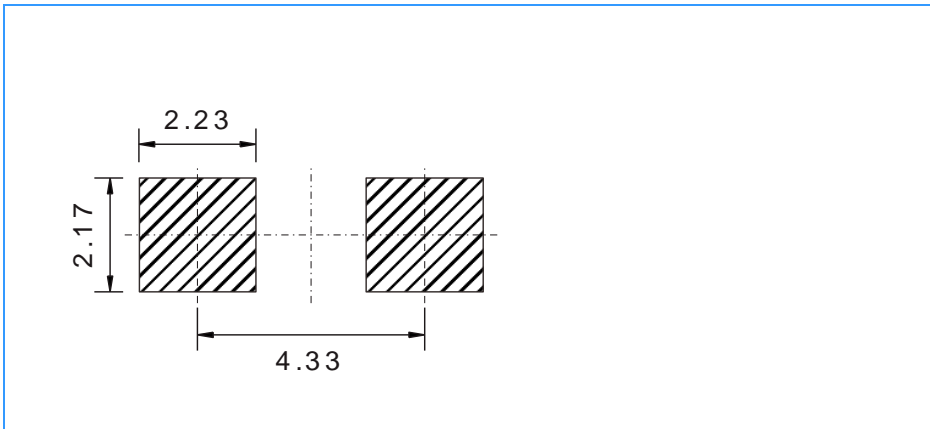
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

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