

Transient Voltage Suppressor

SMBJ5.0A - SMBJ440A

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
- Uni-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	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
SMBJ5.0A	6.4	7.07	10	5	800	65.2	9.2
SMBJ6.0A	6.67	7.37	10	6	800	58.3	10.3
SMBJ6.5A	7.22	7.98	10	6.5	500	53.6	11.2
SMBJ6.8A	7.56	8.35	10	6.8	200	54.6	11
SMBJ7.0A	7.78	8.6	10	7	200	50	12
SMBJ7.5A	8.33	9.21	1	7.5	100	46.5	12.9
SMBJ8.0A	8.89	9.83	1	8	50	44.1	13.6
SMBJ8.5A	9.44	10.4	1	8.5	20	41.7	14.4
SMBJ9.0A	10	11.1	1	9	10	39	15.4
SMBJ10A	11.1	12.3	1	10	5	35.3	17
SMBJ11A	12.2	13.5	1	11	1	33	18.2
SMBJ12A	13.3	14.7	1	12	1	30.2	19.9
SMBJ13A	14.4	15.9	1	13	1	27.9	21.5
SMBJ14A	15.6	17.2	1	14	1	25.9	23.2
SMBJ15A	16.7	18.5	1	15	1	24.6	24.4
SMBJ16A	17.8	19.7	1	16	1	23.1	26
SMBJ17A	18.9	20.9	1	17	1	21.7	27.6
SMBJ18A	20	22.1	1	18	1	20.5	29.2
SMBJ20A	22.2	24.5	1	20	1	18.5	32.4
SMBJ22A	24.4	26.9	1	22	1	16.9	35.5
SMBJ24A	26.7	29.5	1	24	1	15.4	38.9
SMBJ26A	28.9	31.9	1	26	1	14.3	42.1
SMBJ28A	31.1	34.4	1	28	1	13.2	45.4
SMBJ30A	33.3	36.8	1	30	1	12.4	48.4
SMBJ33A	36.7	40.6	1	33	1	11.3	53.3
SMBJ34A	37.8	41.8	1	34	1	10.9	54.9
SMBJ36A	40	44.2	1	36	1	10.3	58.1
SMBJ40A	44.4	49.1	1	40	1	9.3	64.5
SMBJ43A	47.8	52.8	1	43	1	8.6	69.4
SMBJ45A	50	55.3	1	45	1	8.3	72.7

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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
SMBJ48A	53.3	58.9	1	48	1	7.8	77.4
SMBJ50A	55.5	61.4	1	50	1	7.4	80.7
SMBJ51A	56.7	62.7	1	51	1	7.3	82.4
SMBJ54A	60	66.3	1	54	1	6.9	87.1
SMBJ58A	64.4	71.2	1	58	1	6.4	93.6
SMBJ60A	66.7	73.7	1	60	1	6.2	96.8
SMBJ64A	71.1	78.6	1	64	1	5.8	103
SMBJ68A	75.5	83.5	1	68	1	5.5	109
SMBJ70A	77.8	86	1	70	1	5.3	113
SMBJ75A	83.3	92.1	1	75	1	5	121
SMBJ78A	86.7	95.8	1	78	1	4.8	126
SMBJ85A	94.4	104	1	85	1	4.4	137
SMBJ90A	100	111	1	90	1	4.1	146
SMBJ100A	111	123	1	100	1	3.7	162
SMBJ110A	122	135	1	110	1	3.4	177
SMBJ120A	133	147	1	120	1	3.1	193
SMBJ130A	144	159	1	130	1	2.9	209
SMBJ150A	167	185	1	150	1	2.5	243
SMBJ160A	178	197	1	160	1	2.3	259
SMBJ170A	189	209	1	170	1	2.2	275
SMBJ180A	200	221	1	180	1	2.1	291
SMBJ188A	209	231	1	188	1	2	328
SMBJ200A	222	246	1	200	1	1.9	323
SMBJ220A	245	270	1	220	1	1.7	355
SMBJ240A	267	295	1	240	1	1.5	388
SMBJ250A	278	307	1	250	1	1.5	404
SMBJ300A	333	368	1	300	1	1.2	485
SMBJ350A	389	430	1	350	1	1.1	565
SMBJ360A	400	442	1	360	1	1	582
SMBJ380A	422	467	1	380	1	1	614
SMBJ400A	445	491	1	400	1	0.9	646
SMBJ440A	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

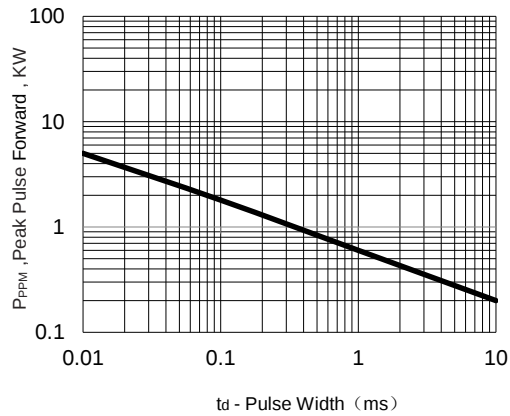


Fig.2 DERATING CURVE

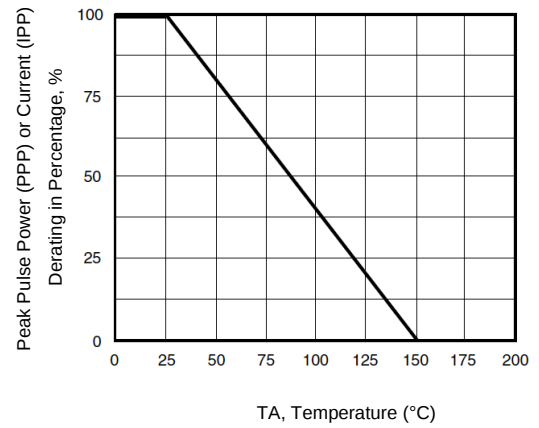
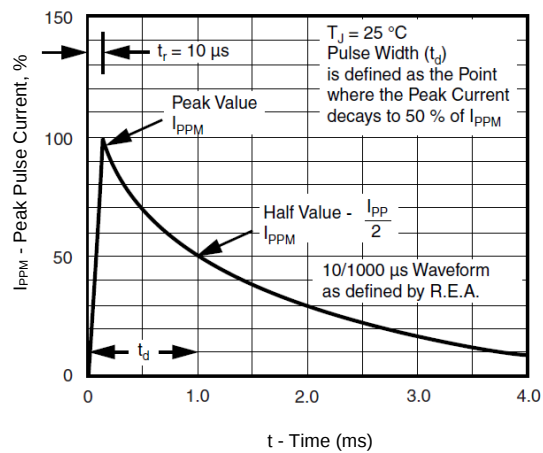


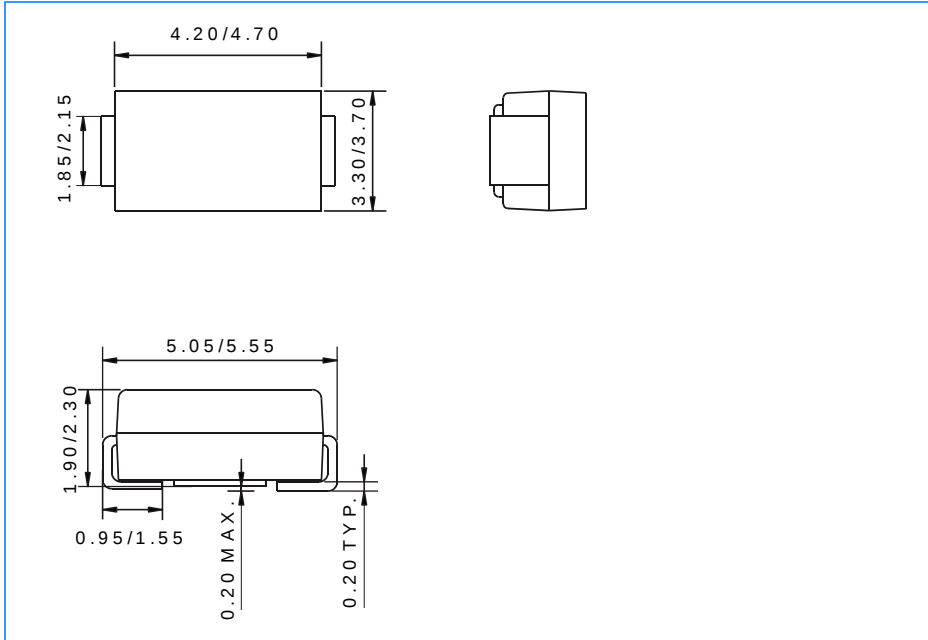
Fig.3 Pulse Waveform



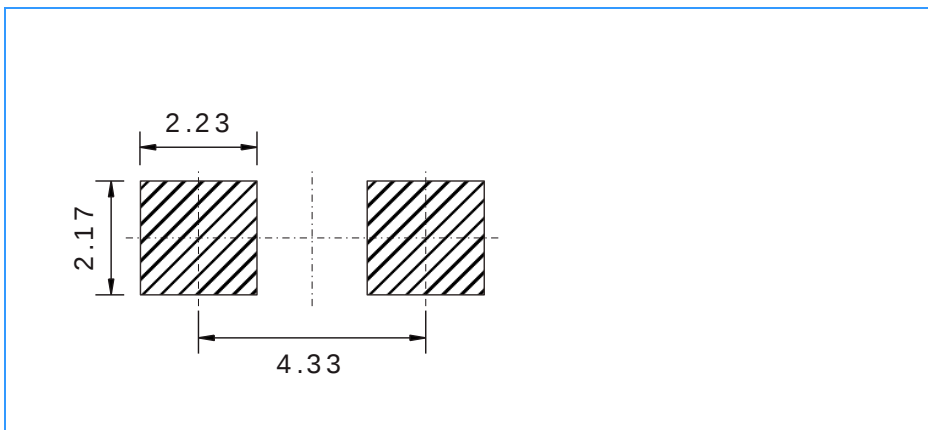
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Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

Part Number	Package	Shipping Quantity
SMBJ5.0A - SMBJ440A	SMB	3000 / Tape & Reel