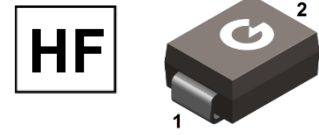


Transient Voltage Suppressor

TSMBJ5.0CA - TSMBJ440CA

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
- Qualified to AEC-Q101 Standards



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
Power Dissipation	P _D	2.08	W
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
TSMBJ5.0CA	6.4	7.07	10	5	800	65.2	9.2
TSMBJ6.0CA	6.67	7.37	10	6	800	58.3	10.3
TSMBJ6.5CA	7.22	7.98	10	6.5	500	53.6	11.2
TSMBJ6.8CA	7.56	8.35	10	6.8	200	54.6	11
TSMBJ7.0CA	7.78	8.6	10	7	200	50	12
TSMBJ7.5CA	8.33	9.21	1	7.5	100	46.5	12.9
TSMBJ8.0CA	8.89	9.83	1	8	50	44.1	13.6
TSMBJ8.5CA	9.44	10.4	1	8.5	20	41.7	14.4
TSMBJ9.0CA	10	11.1	1	9	10	39	15.4
TSMBJ10CA	11.1	12.3	1	10	5	35.3	17
TSMBJ11CA	12.2	13.5	1	11	1	33	18.2
TSMBJ12CA	13.3	14.7	1	12	1	30.2	19.9
TSMBJ13CA	14.4	15.9	1	13	1	27.9	21.5
TSMBJ14CA	15.6	17.2	1	14	1	25.9	23.2
TSMBJ15CA	16.7	18.5	1	15	1	24.6	24.4
TSMBJ16CA	17.8	19.7	1	16	1	23.1	26
TSMBJ17CA	18.9	20.9	1	17	1	21.7	27.6
TSMBJ18CA	20	22.1	1	18	1	20.5	29.2
TSMBJ20CA	22.2	24.5	1	20	1	18.5	32.4
TSMBJ22CA	24.4	26.9	1	22	1	16.9	35.5
TSMBJ24CA	26.7	29.5	1	24	1	15.4	38.9
TSMBJ26CA	28.9	31.9	1	26	1	14.3	42.1
TSMBJ27CA	30.0	33.0	1	27	1	13.8	43.6
TSMBJ28CA	31.1	34.4	1	28	1	13.2	45.4
TSMBJ30CA	33.3	36.8	1	30	1	12.4	48.4
TSMBJ33CA	36.7	40.6	1	33	1	11.3	53.3
TSMBJ34CA	37.8	41.8	1	34	1	10.9	54.9
TSMBJ36CA	40	44.2	1	36	1	10.3	58.1
TSMBJ39CA	43.4	47.9	1	39	1	9.5	63.0
TSMBJ40CA	44.4	49.1	1	40	1	9.3	64.5
TSMBJ43CA	47.8	52.8	1	43	1	8.6	69.4
TSMBJ45CA	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
TSMBJ48CA	53.3	58.9	1	48	1	7.8	77.4
TSMBJ51CA	56.7	62.7	1	51	1	7.3	82.4
TSMBJ54CA	60	66.3	1	54	1	6.9	87.1
TSMBJ58CA	64.4	71.2	1	58	1	6.4	93.6
TSMBJ60CA	66.7	73.7	1	60	1	6.2	96.8
TSMBJ64CA	71.1	78.6	1	64	1	5.8	103
TSMBJ68CA	75.5	83.5	1	68	1	5.5	109
TSMBJ70CA	77.8	86	1	70	1	5.3	113
TSMBJ75CA	83.3	92.1	1	75	1	5	121
TSMBJ78CA	86.7	95.8	1	78	1	4.8	126
TSMBJ80CA	88.9	98.7	1	80	1	4.7	129
TSMBJ85CA	94.4	104	1	85	1	4.4	137
TSMBJ90CA	100	111	1	90	1	4.1	146
TSMBJ100CA	111	123	1	100	1	3.7	162
TSMBJ110CA	122	135	1	110	1	3.4	177
TSMBJ120CA	133	147	1	120	1	3.1	193
TSMBJ130CA	144	159	1	130	1	2.9	209
TSMBJ150CA	167	185	1	150	1	2.5	243
TSMBJ160CA	178	197	1	160	1	2.3	259
TSMBJ170CA	189	209	1	170	1	2.2	275
TSMBJ180CA	200	221	1	180	1	2.1	291
TSMBJ188CA	209	231	1	188	1	2	328
TSMBJ200CA	222	246	1	200	1	1.9	323
TSMBJ220CA	245	270	1	220	1	1.7	355
TSMBJ240CA	267	295	1	240	1	1.5	388
TSMBJ250CA	278	307	1	250	1	1.5	404
TSMBJ300CA	333	368	1	300	1	1.2	485
TSMBJ350CA	389	430	1	350	1	1.1	565
TSMBJ360CA	400	442	1	360	1	1	582
TSMBJ380CA	422	467	1	380	1	1	614
TSMBJ400CA	445	491	1	400	1	0.9	646
TSMBJ440CA	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

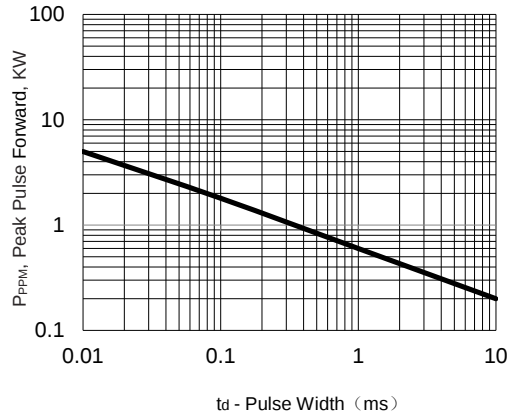


Fig.2 DERATING CURVE

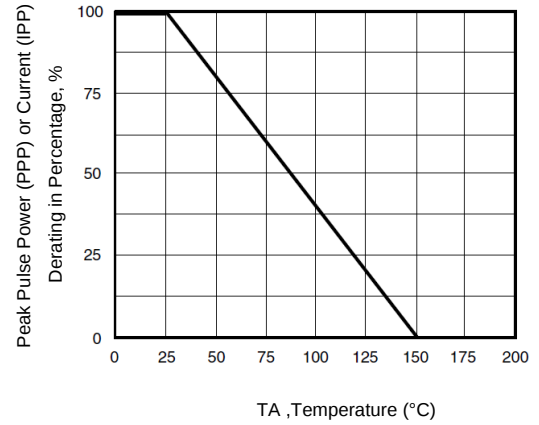
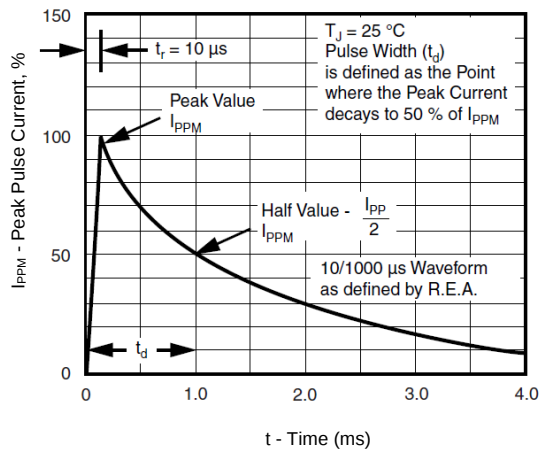


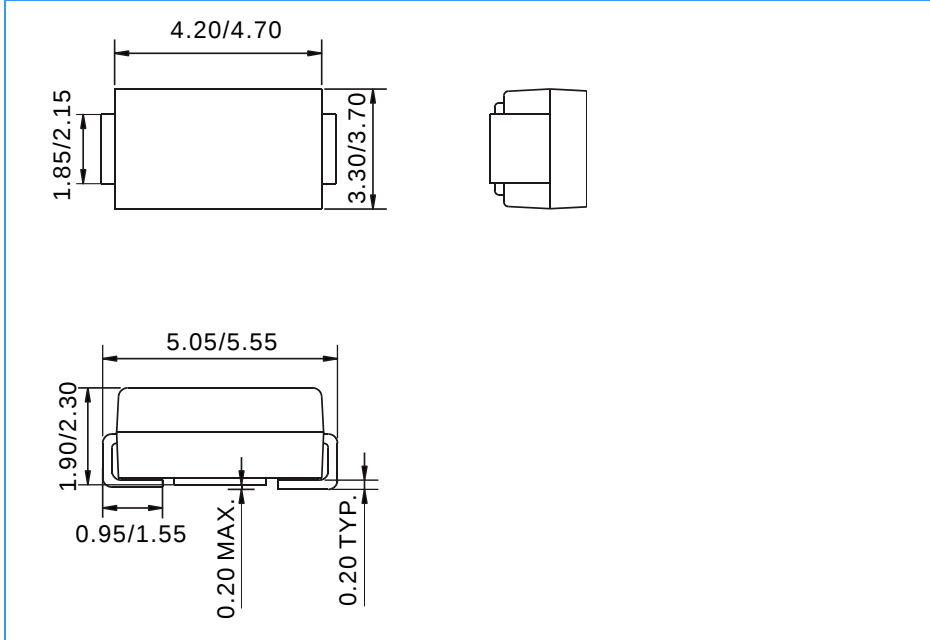
Fig.3 Pulse Waveform



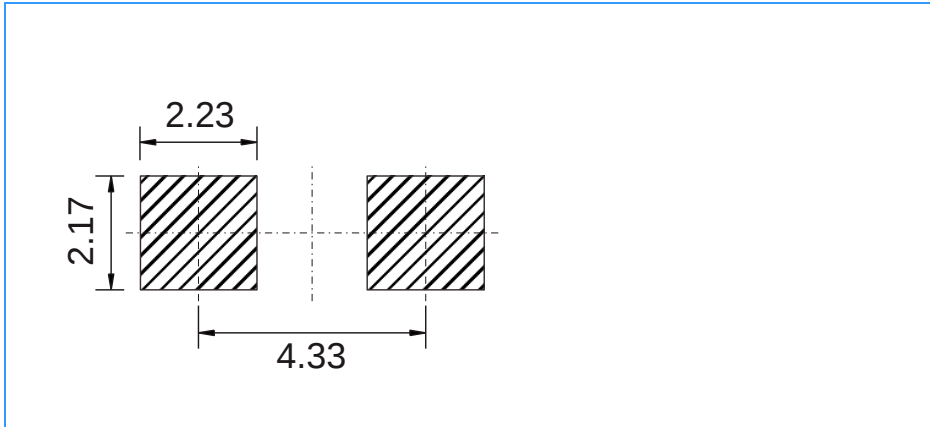
Transient Voltage Suppressor

TSMBJ5.0CA - TSMBJ440CA

Package Outline Dimensions (unit: mm)



Mounting Pad Layout (unit: mm)



Ordering Information

Part Number	Package	Package
TSMBJ5.0CA - TSMBJ440CA	SMB	3000 pcs / Tape & Reel