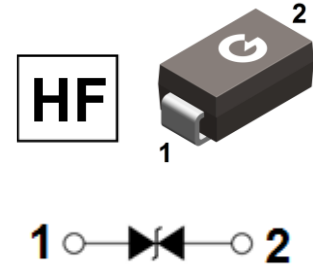


Transient Voltage Suppressor

TSM AJ5.0CA - TSM AJ440CA

Features

- ESD / transient protection of high speed data lines
 - IEC 61000-4-2 (ESD): $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- Low profile package with built-in strain relief for SMT applications
- Low incremental surge resistance, excellent clamping capability
- 400W 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: SMA molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated; solderable per MIL- STD-202, Method 208

Maximum Ratings (@ $T_A = 25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak power dissipation with a 10/1000 μs waveform *1 (FIG.1)	P_{PPM}	400	W
Peak pulse current with a 10/1000 μs waveform *1	I_{PP}	see E. Characteristics	A
Power Dissipation	P_D	2.14	W
Typical Thermal Resistance *2	$R_{\theta JA}$	70	$^{\circ}\text{C/W}$
	$R_{\theta JC}$	25	
	$R_{\theta JL}$	30	
Operating junction and storage temperature range	T_J, T_{STG}	$-55 \sim +175$	$^{\circ}\text{C}$

Note *1: Non-repetitive current pulses, per Fig. 3 and derated above $T_A = 25^{\circ}\text{C}$

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

Transient Voltage Suppressor

T SMAJ5.0CA - T SMAJ440CA

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

Type	Device Marking Code	Breakdown Voltage V _{BR} @ I _T		Test Current	Reverse Stand off 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
T SMAJ5.0CA	AWE	6.4	7.08	10	5	800	43.5	9.2
T SMAJ6.0CA	AWG	6.67	7.37	10	6	800	38.8	10.3
T SMAJ6.5CA	AWK	7.22	7.98	10	6.5	500	35.7	11.2
T SMAJ6.8CA	AFE	7.56	8.35	10	6.8	200	36.4	11
T SMAJ7.0CA	AWM	7.78	8.6	10	7	200	33.3	12
T SMAJ7.5CA	AWP	8.33	9.21	1	7.5	100	31	12.9
T SMAJ8.0CA	AWR	8.89	9.83	1	8	50	29.4	13.6
T SMAJ8.5CA	AWT	9.44	10.4	1	8.5	10	27.8	14.4
T SMAJ9.0CA	AWV	10	11.1	1	9	5	26	15.4
T SMAJ10CA	AWX	11.1	12.3	1	10	5	23.5	17
T SMAJ11CA	AWZ	12.2	13.5	1	11	1	22	18.2
T SMAJ12CA	AXE	13.3	14.7	1	12	1	20.1	19.9
T SMAJ13CA	AXG	14.4	15.9	1	13	1	18.6	21.5
T SMAJ14CA	AXK	15.6	17.2	1	14	1	17.2	23.2
T SMAJ15CA	AXM	16.7	18.5	1	15	1	16.4	24.4
T SMAJ16CA	AXP	17.8	19.7	1	16	1	15.4	26
T SMAJ17CA	AXR	18.9	20.9	1	17	1	14.5	27.6
T SMAJ18CA	AXT	20	22.4	1	18	1	13.7	29.2
T SMAJ20CA	AXV	22.2	24.5	1	20	1	12.3	32.4
T SMAJ22CA	AXX	24.4	26.9	1	22	1	11.3	35.5
T SMAJ24CA	AXZ	26.7	29.5	1	24	1	10.3	38.9
T SMAJ26CA	AYE	28.9	31.9	1	26	1	9.5	42.1
T SMAJ28CA	AYG	31.3	34.4	1	28	1	8.8	45.4
T SMAJ30CA	AYK	33.3	36.8	1	30	1	8.3	48.4
T SMAJ33CA	AYM	36.7	40.6	1	33	1	7.5	53.3
T SMAJ36CA	AYP	40	44.2	1	36	1	6.9	58.1
T SMAJ40CA	AYR	44.4	49.1	1	40	1	6.2	64.5
T SMAJ45CA	AYV	50	55.3	1	45	1	5.5	72.7
T SMAJ48CA	AYX	53.3	58.9	1	48	1	5.2	77.4
T SMAJ50CA	AFG	55.5	61.3	1	50	1	4.9	81
T SMAJ51CA	AYZ	56.7	62.7	1	51	1	4.9	82.4

Transient Voltage Suppressor

T SMAJ5.0CA - T SMAJ440CA

Type	Device Marking Code	Breakdown Voltage V_{BR} @ I_T		Test Current	Reverse Stand off 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
T SMAJ56CA	AUZ	62.2	68.8	1	56	1	4.4	90.3
T SMAJ58CA	AZG	64.4	71.2	1	58	1	4.3	93.6
T SMAJ60CA	AZK	66.7	73.7	1	60	1	4.1	96.8
T SMAJ63CA	AZM	69.9	77.2	1	63	1	3.9	102.1
T SMAJ64CA	AZP	71.1	78.6	1	64	1	3.9	103
T SMAJ70CA	AFK	77.8	86	1	70	1	3.5	113
T SMAJ75CA	AZR	83.3	92.1	1	75	1	3.3	121
T SMAJ78CA	AZT	86.7	95.8	1	78	1	3.2	126
T SMAJ85CA	AZV	94.4	104	1	85	1	2.9	137
T SMAJ90CA	AZX	100	111	1	90	1	2.7	146
T SMAJ100CA	AZZ	111	123	1	100	1	2.5	162
T SMAJ110CA	AVE	122	135	1	110	1	2.3	177
T SMAJ120CA	AVG	133	147	1	120	1	2.1	193
T SMAJ130CA	AVK	144	159	1	130	1	1.9	209
T SMAJ150CA	AVM	167	185	1	150	1	1.6	243
T SMAJ160CA	AVP	178	197	1	160	1	1.5	259
T SMAJ170CA	AVR	189	209	1	170	1	1.5	275
T SMAJ175CA	AFM	194.6	215.2	1	175	1	1.4	280.3
T SMAJ180CA	AUX	200	221	1	180	1	1.4	291
T SMAJ188CA	AVS	209	231	1	188	1	1.3	304
T SMAJ200CA	AVV	222	246	1	200	1	1.2	323
T SMAJ220CA	AVX	245	270	1	220	1	1.1	355
T SMAJ240CA	AVZ	267	295	1	240	1	1	388
T SMAJ250CA	AUT	278	307	1	250	1	1	404
T SMAJ300CA	AUG	333	368	1	300	1	0.8	485
T SMAJ350CA	AUR	389	430	1	350	1	0.7	565
T SMAJ360CA	AUK	400	442	1	360	1	0.7	582
T SMAJ400CA	AUM	445	491	1	400	1	0.6	646
T SMAJ440CA	AUP	489	540	1	440	1	0.6	711

Transient Voltage Suppressor

TSMAJ5.0CA - TSMAJ440CA

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

Fig.1 Peak Pulse Power Rating Curve

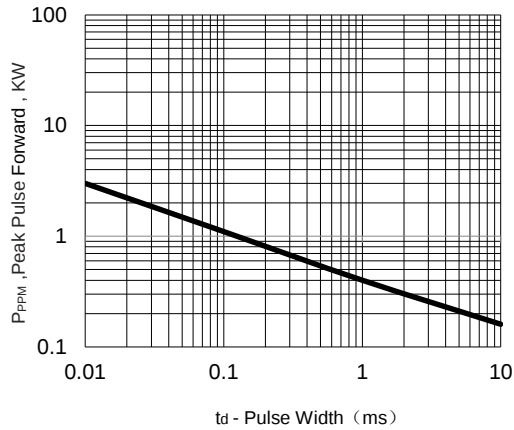


Fig.2 DERATING CURVE

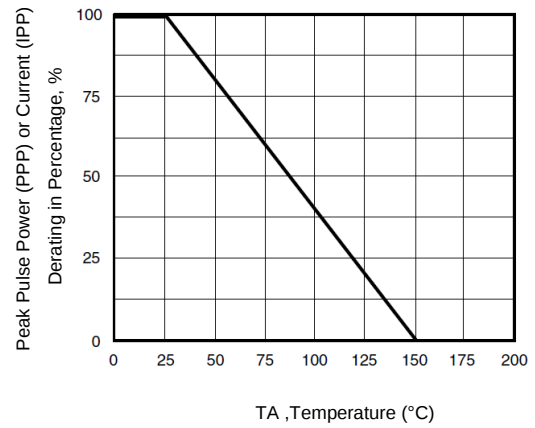
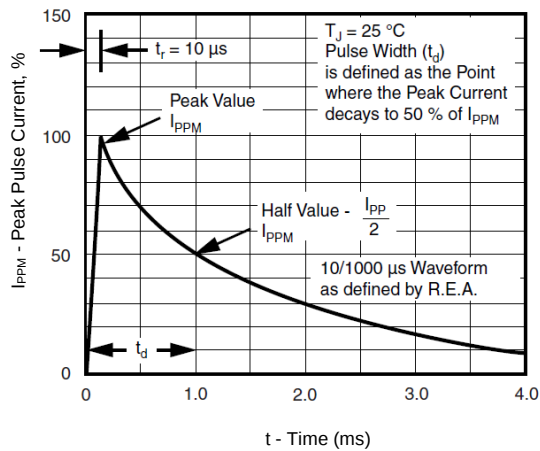


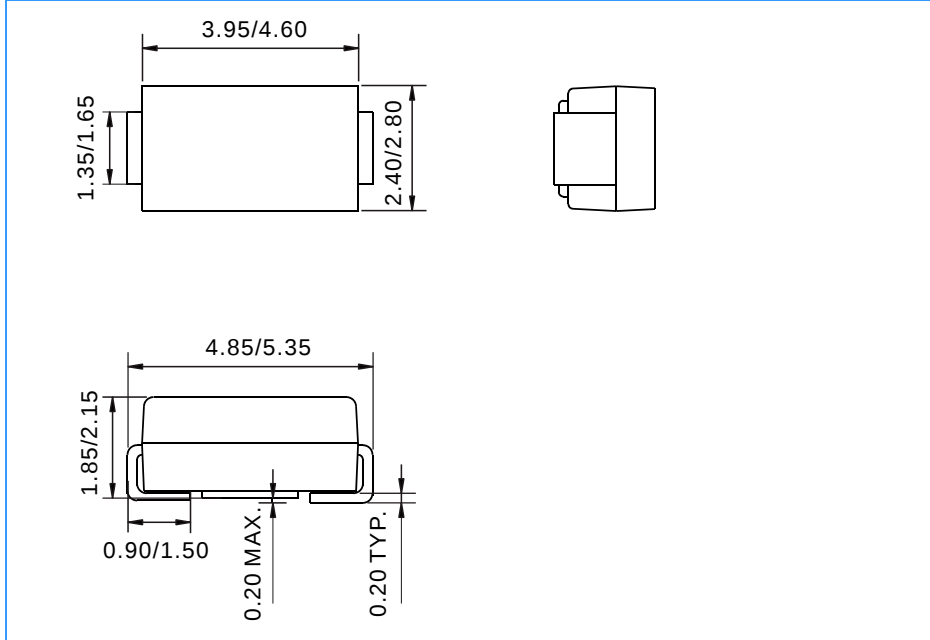
Fig.3 Pulse Waveform



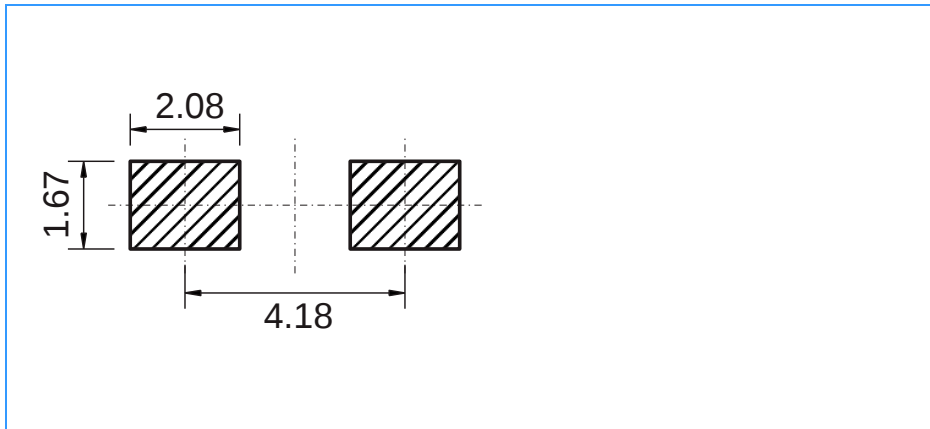
Transient Voltage Suppressor

T SMAJ5.0CA - TSMAJ440CA

Package Outline Dimensions (Unit: mm)



Mounting Pad Layout (Unit: mm)



Ordering Information

Part Number	Package	Shipping Quantity
T SMAJ5.0CA - TSMAJ440CA	SMA	5000 pcs / Tape & Reel