

5000W Surface Mount Transient Voltage Suppressor

Features

- Stand-off voltage from 12 to 170 volts
- Glass passivated chip junction
- Low inductance
- Excellent clamping capability
- 5000W peak pulse power capability with a 10/1000 μ s waveform, repetition rate(duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0v to VBR
- Low incremental surge resistance
- High temperature soldering guaranteed: 250°C/10 seconds at terminals
- 5.0SMCJ series is UL recognized under component index. File number E315008
- RoHS Compliant



SMC



Mechanical Data

Case:	JEDEC DO-214AB(SMC) molded plastic body over glass passivated junction
Epoxy:	Plastic package has UL flammability classification 94V-0
Terminals:	Solder plated, solderable per MIL-STD-750, Method 2026
Polarity:	Cathode indicated by color band except Bi-directional
Mounting Position:	Any
Weight:	0.007 ounce, 0.21 gram

Maximum Ratings ($T_{Ambient}=25^{\circ}C$ unless noted otherwise)

Symbol	Description	Value	Unit	Conditions
PPPM	Peak Pulse Power Dissipation at $T_A=25^{\circ}C$ by 10/1000 μ s Waveform	5000	W	Note (1) (2)
PM(AV)	Power Dissipation on infinite heat sink at $T_A=50^{\circ}C$	6.5	W	
IFSM	Peak Forward Surge Current, Uni-directional only	300	A	8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
V_F	Maximum Instantaneous Forward Voltage at 100A for Uni-directional only	5.0	V	
R_{thJA}	Typical Thermal Resistance to Ambient	75	$^{\circ}C/W$	

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5.0SMCJ12A/CA - 5.0SMCJ170A/CA

Symbol	Description	Value	Unit	Conditions
R_{thJL}	Typical Thermal Resistance to Lead	15	° C/W	
T_J, T_{STG}	Operating Junction and Storage Temperature Range	-65 to 150	° C	

Notes: (1) Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2.
 (2) Mounted on 0.31 x 0.31" (8.0 x 8.0mm) copper pads to each terminal.

Electrical Characteristics ($T_{Ambient}=25^\circ\text{C}$ unless noted otherwise)

P/N		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @ Test Current			Max. Clamping Voltage @ IPPM	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V_{WM}
Uni-Polar	Bi-Polar	Uni	Bi		V BR		I _T (mA)			
				V_{WM} (V)	Min.	Max.			V _C (V)	IPPM (A)
5.0SMCJ12A	5.0SMCJ12CA	5PEP	5BEP	12	13.3	14.7	10	19.9	252.0	800
5.0SMCJ13A	5.0SMCJ13CA	5PEQ	5BEQ	13	14.4	15.9	10	21.5	233.0	500
5.0SMCJ14A	5.0SMCJ14CA	5PER	5BER	14	15.6	17.2	10	23.2	216.0	200
5.0SMCJ15A	5.0SMCJ15CA	5PES	5BES	15	16.7	18.5	1	24.4	205.0	100
5.0SMCJ16A	5.0SMCJ16CA	5PET	5BET	16	17.8	19.7	1	26.0	193.0	50
5.0SMCJ17A	5.0SMCJ17CA	5PEU	5BEU	17	18.9	20.9	1	27.6	181.0	20
5.0SMCJ18A	5.0SMCJ18CA	5PEV	5BEV	18	20.0	22.1	1	29.2	172.0	10
5.0SMCJ20A	5.0SMCJ20CA	5PEW	5BEW	20	22.2	24.5	1	32.4	155.0	5
5.0SMCJ22A	5.0SMCJ22CA	5PEX	5BEX	22	24.4	26.9	1	35.5	141.0	5
5.0SMCJ24A	5.0SMCJ24CA	5PEZ	5BEZ	24	26.7	29.5	1	38.9	129.0	5
5.0SMCJ26A	5.0SMCJ26CA	5PFE	5BFE	26	28.9	31.9	1	42.1	119.0	5
5.0SMCJ28A	5.0SMCJ28CA	5PFG	5BFG	28	31.1	34.4	1	45.4	110.0	5
5.0SMCJ30A	5.0SMCJ30CA	5PFK	5BFK	30	33.3	36.8	1	48.4	103.0	5
5.0SMCJ33A	5.0SMCJ33CA	5PFM	5BFM	33	36.7	40.6	1	53.3	93.9	5
5.0SMCJ36A	5.0SMCJ36CA	5PFP	5BFP	36	40.0	44.2	1	58.1	86.1	5
5.0SMCJ40A	5.0SMCJ40CA	5PFR	5BFR	40	44.4	49.1	1	64.5	77.6	5
5.0SMCJ43A	5.0SMCJ43CA	5PFT	5BFT	43	47.8	52.8	1	69.4	72.1	5
5.0SMCJ45A	5.0SMCJ45CA	5PFV	5BFV	45	50.0	55.3	1	72.7	68.8	5

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P/N		Device Marking Code		Reverse Stand-Off Voltage	Breakdown Voltage @ Test Current			Max. Clamping Voltage @ IPPM	Max. Peak Pulse Current	Max. Reverse Leakage Current @ V _{WM}
					V _{BR}		I _T (mA)			
Uni-Polar	Bi-Polar	Uni	Bi	V _{WM} (V)	Min.	Max.		V _C (V)	IPPM (A)	I _D (μA)
5.0SMCJ48A	5.0SMCJ48CA	5PFX	5BFX	48	53.3	58.9	1	77.4	64.7	5
5.0SMCJ51A	5.0SMCJ51CA	5PFZ	5BFZ	51	56.7	62.7	1	82.4	60.7	5
5.0SMCJ54A	5.0SMCJ54CA	5PGE	5BGE	54	60.0	66.3	1	87.1	57.5	5
5.0SMCJ58A	5.0SMCJ58CA	5PGG	5BGG	58	64.4	71.2	1	93.6	53.5	5
5.0SMCJ60A	5.0SMCJ60CA	5PGK	5BGK	60	66.7	73.7	1	96.8	51.7	5
5.0SMCJ64A	5.0SMCJ64CA	5PGM	5BGM	64	71.1	78.6	1	103.0	48.6	5
5.0SMCJ70A	5.0SMCJ70CA	5PGP	5BGB	70	77.8	86.0	1	113.0	44.3	5
5.0SMCJ75A	5.0SMCJ75CA	5PGR	5BGR	75	83.3	92.1	1	121.0	41.4	5
5.0SMCJ78A	5.0SMCJ78CA	5PGT	5BGT	78	86.7	95.8	1	126.0	39.7	5
5.0SMCJ85A	5.0SMCJ85CA	5PGV	5BGV	85	94.4	104.0	1	137.0	36.5	5
5.0SMCJ90A	5.0SMCJ90CA	5PGX	5BGX	90	100.0	111.0	1	146.0	34.3	5
5.0SMCJ100A	5.0SMCJ100CA	5PGZ	5BGZ	100	111.0	123.0	1	162.0	30.9	5
5.0SMCJ110A	5.0SMCJ110CA	5PHE	5BHE	110	122.0	135.0	1	177.0	28.3	5
5.0SMCJ120A	5.0SMCJ120CA	5PHG	5BHG	120	133.0	147.0	1	193.0	26.0	5
5.0SMCJ130A	5.0SMCJ130CA	5PHK	5BHK	130	144.0	159.0	1	209.0	24.0	5
5.0SMCJ150A	5.0SMCJ150CA	5PHM	5BHM	150	167.0	185.0	1	243.0	20.6	5
5.0SMCJ160A	5.0SMCJ160CA	5PHP	5BHB	160	178.0	197.0	1	259.0	19.3	5
5.0SMCJ170A	5.0SMCJ170CA	5PHR	5BHR	170	189.0	209.0	1	275.0	18.2	5

Notes: (1) For Bi-directional type having V_{RWM} of 20 volts and less, the I_R limit is doubled.

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5.0SMCJ12A/CA - 5.0SMCJ170A/CA

Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

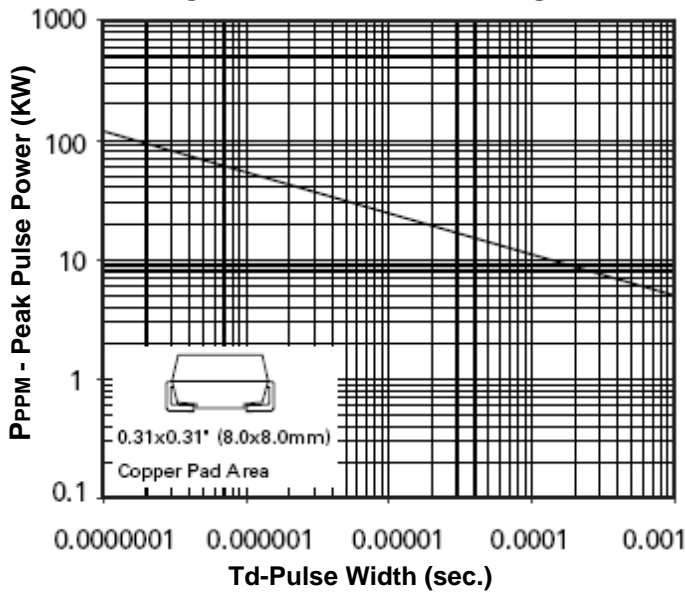


Fig.2- Pulse Derating Curve

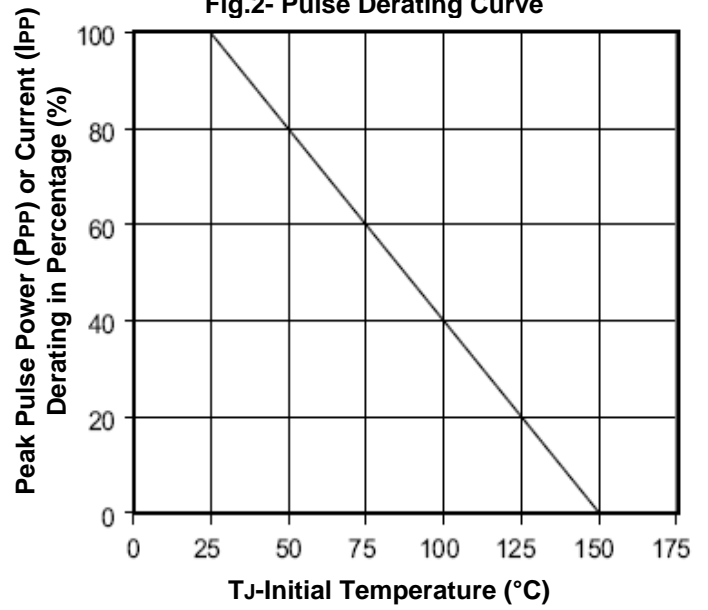


Fig.3- Pulse Waveform

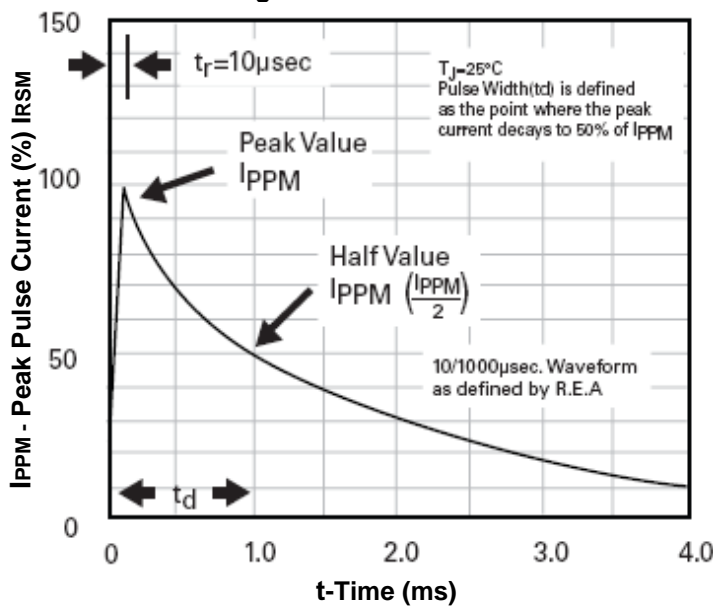
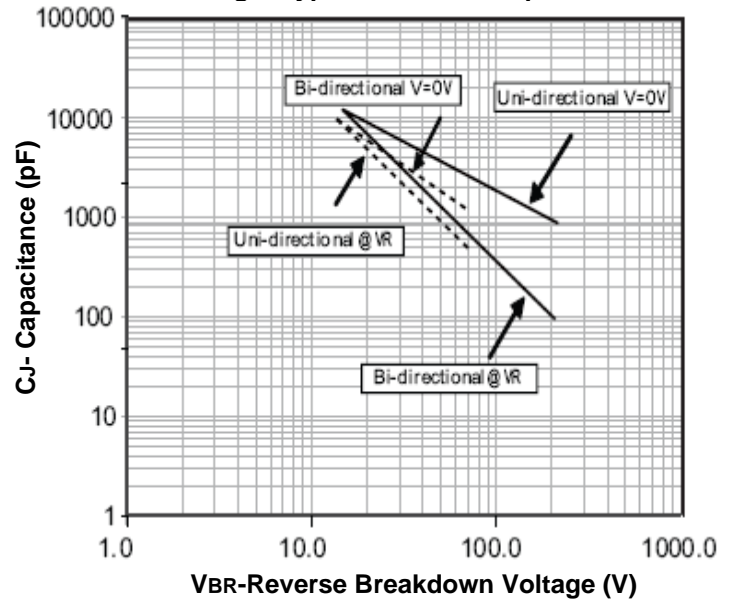
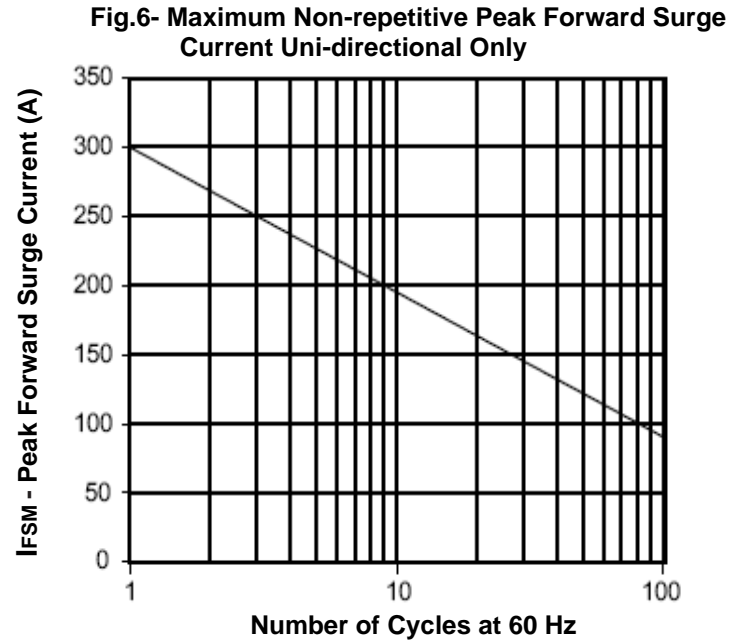
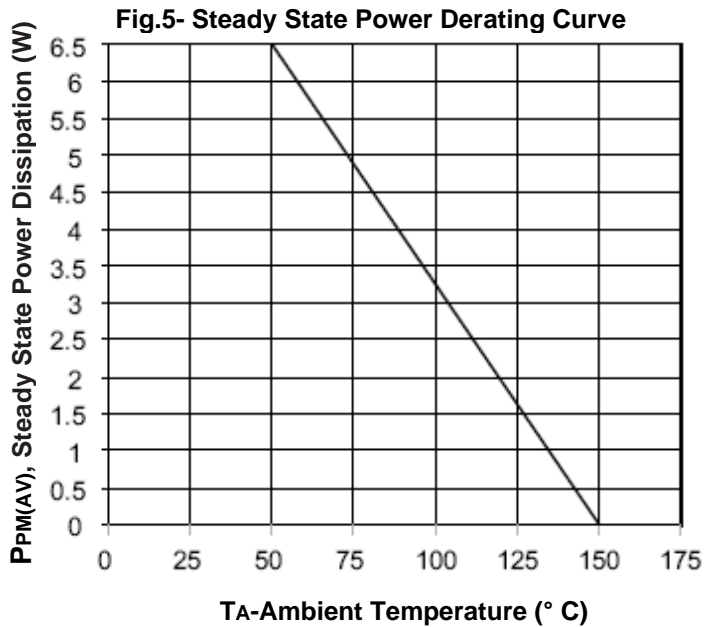


Fig.4-Typical Junction Capacitance

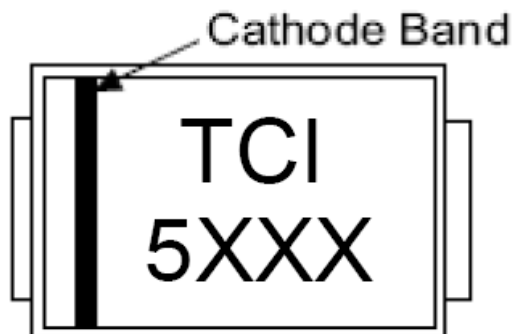


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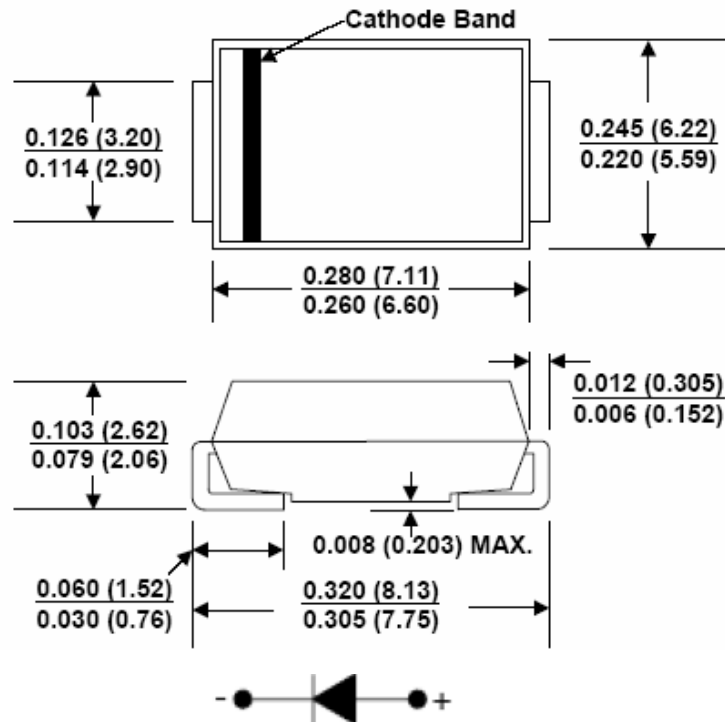
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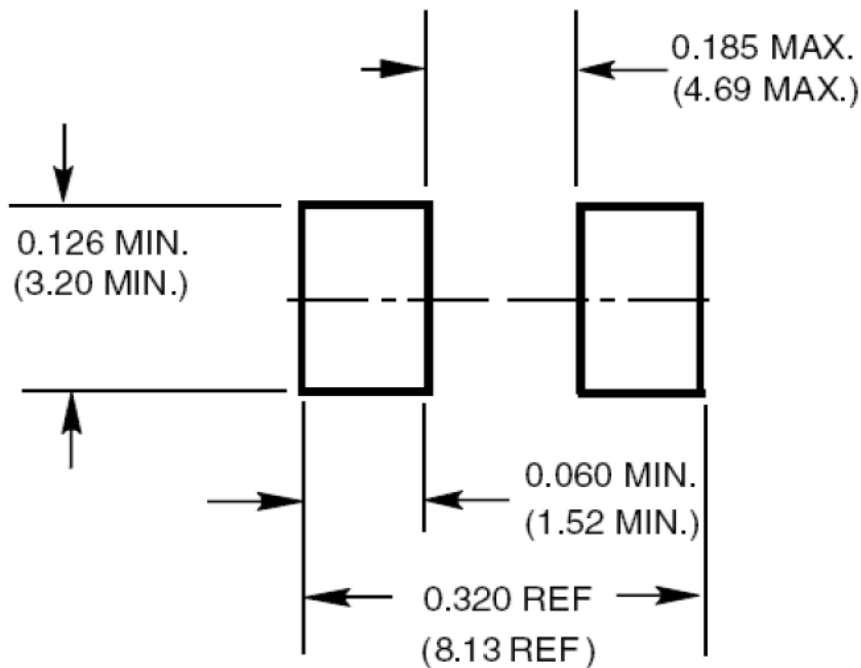
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5.0SMCJ12A/CA - 5.0SMCJ170A/CA

Dimensions in inch (mm)



Soldering Pad in inch (mm)



SMC

TAITRON
components incorporated

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