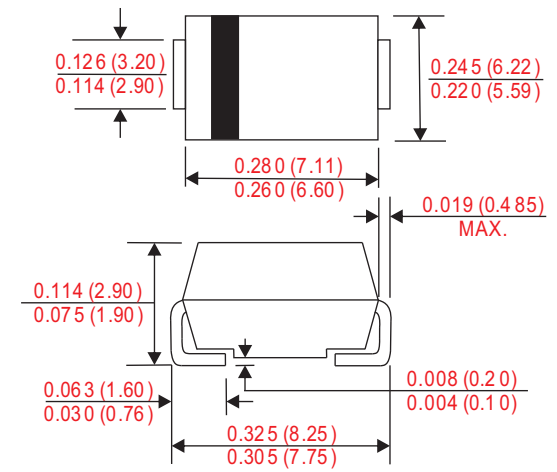


5.0SMCJ Series

5000W Surface Mount Transient Voltage Suppressors
VOLTAGE : 5.0 TO 170Volts

Features	Outline
<ul style="list-style-type: none"> 5000W peak pulse power capability with a 10/1000uS waveform, repetition rate (duty cycle): 0.01%. Excellent clamping capability. Low incremental surge resistance. Suffix "G" indicates Halogen-free part, ex.5.0SMCJ12(C)AG. Glass passivated chip junction Lead-free parts meet environmental standards of MIL-STD-19500 /228 	<p>SMC(DO-214AB)</p>  <p>Dimensions in inches and (millimeters)</p>
Mechanical data	
<ul style="list-style-type: none"> Epoxy:UL94-V0 rated flame retardant Case : Molded plastic, DO-214AB / SMC Terminals : Solder plated, solderable per MIL-STD-750, Method 2026 Polarity : Indicated by cathode band Weight : 0.007 ounce, 0.226 gram 	

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Conditions	Symbol	5.0SMCJ Series	UNIT
Peak power dissipation	with a 10/1000 us waveform, Note 1, 2 & Fig. 1	P_{PPM}	5000	W
Peak pulse current	with a 10/1000 us waveform	I_{PPM}	See table 1	A
Steady state power dissipation	at $T_L=75^\circ\text{C}$ lead length 0.375" (9,5 mm), note 2	$P_{M(AV)}$	6.5	W
Peak forward surge current	8.3ms single half sine-wave superimposed on rated load (JEDEC method), note 3	I_{FSM}	300	A
Operating and Storage temperature		T_J, T_{STG}	-55 ~ +150	°C

Note 1. Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^\circ\text{C}$ per Fig. 2

2. Mounted on copper pad area of 0.8" X 0.8" (40x40 mm) per Fig 5

3. Measured on 8.3 ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum

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ELECTRICAL CHARACTERISTICS

table 1

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R@V_{RWM}$	UNI	BI
	Volts	Volts	Volts	mA	A	Volts	A	uA		
5.0SMCJ12(C)A	12	13.3	14.7	10.0	300	19.9	252.0	800	5PEP	5BEP
5.0SMCJ13(C)A	13	14.4	15.9	10.0	300	21.5	233.0	500	5PEQ	5BEQ
5.0SMCJ14(C)A	14	15.6	17.2	10.0	300	23.2	216.0	200	5PER	5BER
5.0SMCJ15(C)A	15	16.7	18.5	1.0	300	24.4	205.0	100	5PES	5BES
5.0SMCJ16(C)A	16	17.8	19.7	1.0	300	26.0	193.0	50	5PET	5BET
5.0SMCJ17(C)A	17	18.9	20.9	1.0	300	27.6	181.0	20	5PEU	5BEU
5.0SMCJ18(C)A	18	20.0	22.1	1.0	300	29.2	172.0	10	5PEV	5BEV
5.0SMCJ20(C)A	20	22.2	24.5	1.0	300	32.4	155.0	5	5PEW	5BEW
5.0SMCJ22(C)A	22	24.4	26.9	1.0	300	35.5	141.0	5	5PEX	5BEX
5.0SMCJ24(C)A	24	26.7	29.5	1.0	300	38.9	129.0	5	5PEZ	5BEZ
5.0SMCJ26(C)A	26	28.9	31.9	1.0	300	42.1	119.0	5	5PFE	5BFE
5.0SMCJ28(C)A	28	31.1	34.4	1.0	300	45.4	110.0	5	5PFG	5BFG
5.0SMCJ30(C)A	30	33.3	36.8	1.0	300	48.4	103.0	5	5PFK	5BFK
5.0SMCJ33(C)A	33	36.7	40.6	1.0	300	53.3	93.9	5	5PFM	5BFM
5.0SMCJ36(C)A	36	40.0	44.2	1.0	300	58.1	86.1	5	5PFP	5BFP
5.0SMCJ40(C)A	40	44.4	49.1	1.0	300	64.5	77.6	5	5PFR	5BFR
5.0SMCJ43(C)A	43	47.8	52.8	1.0	300	69.4	72.1	5	5PFT	5BFT
5.0SMCJ45(C)A	45	50.0	55.3	1.0	300	72.7	68.8	5	5PFV	5BFV
5.0SMCJ48A	48	53.3	58.9	1.0	300	77.4	64.7	5	5PFX	
5.0SMCJ51A	51	56.7	62.7	1.0	300	82.4	60.7	5	5PFZ	
5.0SMCJ54A	54	60.0	66.3	1.0	300	87.1	57.5	5	5PGE	
5.0SMCJ58A	58	64.4	71.2	1.0	300	93.6	53.5	5	5PGG	
5.0SMCJ60A	60	66.7	73.7	1.0	300	96.8	51.7	5	5PGK	
5.0SMCJ64A	64	71.1	78.6	1.0	300	103.0	48.6	5	5PGM	
5.0SMCJ70A	70	77.8	86.0	1.0	300	113.0	44.3	5	5PGP	



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ELECTRICAL CHARACTERISTICS

Part No.	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Peak Forward Surge Current	Maximum Clamping Voltage @ I_{PP}		Maximum Leakage Current	Marking Code	
	V_{RWM}	$V_{BR Min}$	$V_{BR Max}$	I_T	I_{FSM}	V_C	I_{PP}	$I_R@V_{RWM}$	UNI	BI
	Volts	Volts	Volts	mA	A	Volts	A	uA		
5.0SMCJ70A	70	77.8	86.0	1.0	300	113.0	44.3	5	5PGP	
5.0SMCJ75A	75	83.3	92.1	1.0	300	121.0	41.4	5	5PGR	
5.0SMCJ78A	78	86.7	95.8	1.0	300	126.0	39.7	5	5PGT	
5.0SMCJ85A	85	94.4	104.0	1.0	300	137.0	36.5	5	5PGV	
5.0SMCJ90A	90.0	100.0	111.0	1.0	300	146.0	34.3	5	5PGX	
5.0SMCJ100A	100.0	111.0	123.0	1.0	300	162.0	30.9	5	5PGZ	
5.0SMCJ110A	110.0	122.0	135.0	1.0	300	177.0	28.3	5	5PHE	
5.0SMCJ120A	120.0	133.0	147.0	1.0	300	193.0	26.0	5	5PHG	
5.0SMCJ130A	130.0	144.0	159.0	1.0	300	209.0	24.0	5	5PHK	
5.0SMCJ150A	150.0	167.0	185.0	1.0	300	243.0	20.6	5	5PHM	
5.0SMCJ160A	160.0	178.0	197.0	1.0	300	259.0	19.3	5	5PHP	
5.0SMCJ170A	170.0	189.0	209.0	1.0	300	275.0	18.2	5	5PHR	

- Note 1. V_{BR} measured after I_T applied for 300uS, I_T =square wave pulse or equivalent
 2. Surge current waveform per Fig. 3 and derated per Fig. 2
 3. For bi-directional types having V_{WM} of 10 volts and less, the I_D limit is doubled
 4. Suffix 'C' denotes bi-directional devices. Suffix 'A' denotes 5% tolerance devices, no suffix denotes 10% tolerance devices.
 5. All terms and symbols are consistent with ANS/IEEE C62.35
 6. Transient Voltage Suppressors (TVS) are devices used to protect vulnerable circuits from electrical overstress such as that caused by electrostatic discharge, inductive load switching and induced lightning. Within the TVS, damaging voltage spikes are limited by clamping or avalanche action of a rugged silicon pn junction which reduces the amplitude of the transient to a nondestructive level. See Fig. A & Fig. B

Fig. A - Transients of several thousand volts can be clamped to a safe level by the TVS

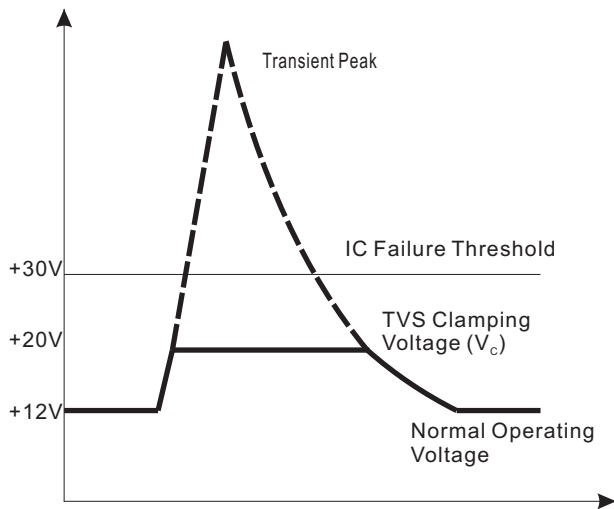
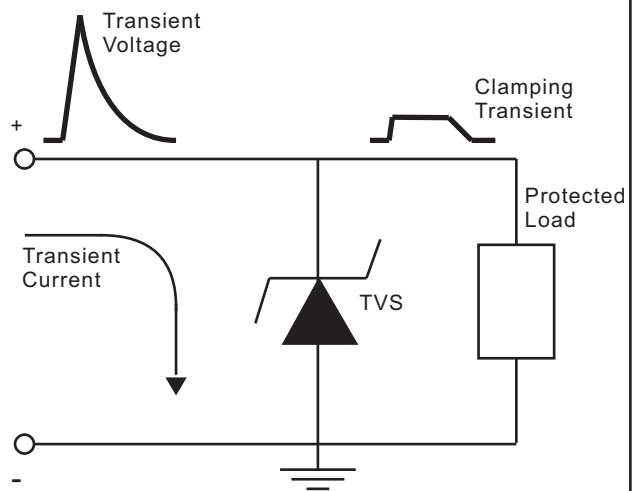


Fig. B - Transient current is diverted to ground thru TVS; the voltage seen by the protected load is limited to the clamping voltage level



5.0SMCJ Series

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ELECTRICAL CHARACTERISTICS

Fig.1 - Peak Pulse Power Rating Curve

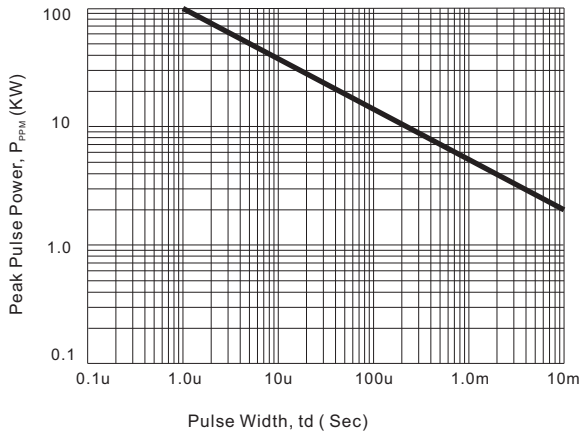


Fig.2 - Pulse Derating Curve

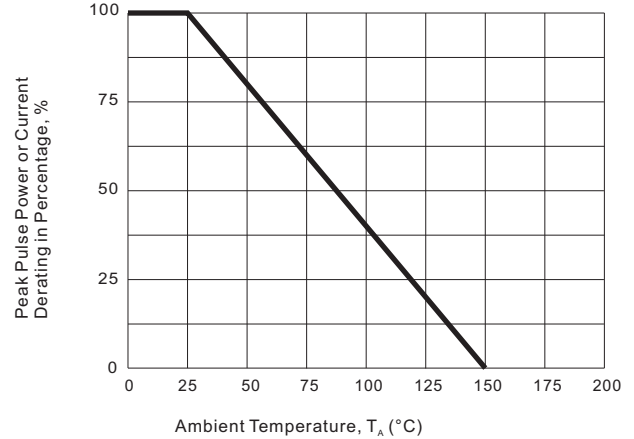


Fig.3 - Pulse Waveform

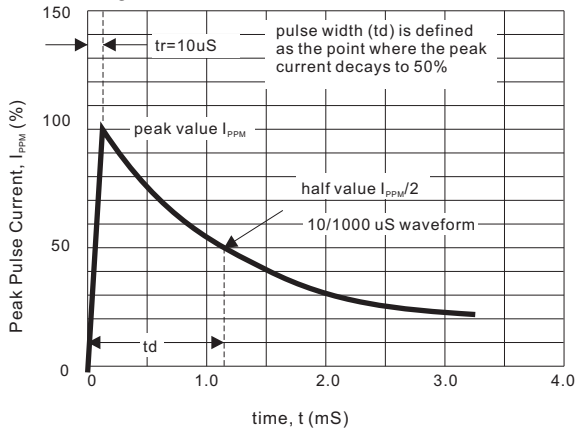


Fig.4 - Typical Junction Capacitance

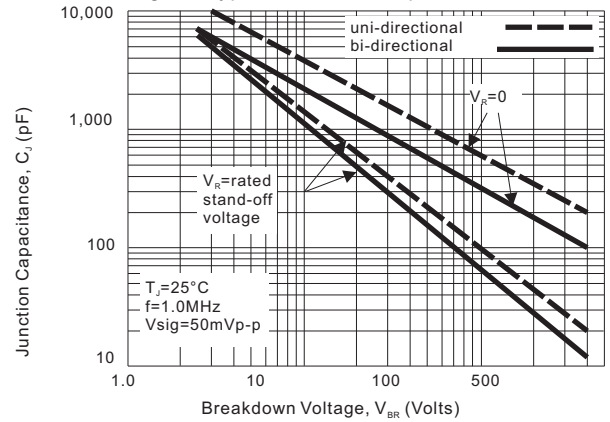


Fig.5 - Steady State Power Derating Curve

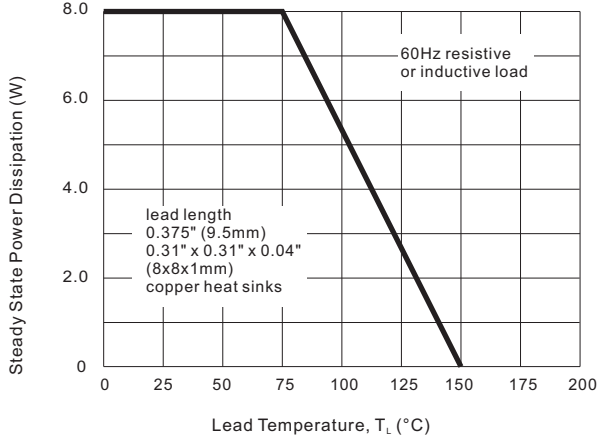


Fig.6 - Maximum Non-Repetitive Forward Surge Current

