

1500W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSORS, 5.0V – 440V

Value Inch[mm]		
Dim.	Min.	Max.
A	0.305[7.75]	0.320[8.13]
B	0.260[6.60]	0.280[7.11]
C	0.220[5.59]	0.245[6.22]
D	0.079[2.01]	0.111[2.82]
E	0.030[0.76]	0.060[1.52]
F	0.114[2.90]	0.126[3.20]

PRODUCT FEATURES

1. FLAMMABILITY CLASSIFICATION 94V-0
2. GLASS PASSIVATED CHIP JUNCTION
3. 1500W PEAK PULSE POWER CAPABILITY WITH A 10/1000 μ S WAVEFORM, REPETITION RATE (DUTY CYCLE): 0.01%.
4. EXCELLENT CLAMPING CAPABILITY
5. FAST RESPONSE TIME FROM 0V TO V_{BR} , TYPICALLY <1 pS FOR UNI-DIRECTIONAL & <5 nS FOR BI-DIRECTIONAL
6. POLARITY: INDICATED BY CATHODE BAND
7. MOLDED PLASTIC CASE DO-214AB (SMC)
8. DIMENSIONS IN INCHES AND (MILLIMETERS)
9. LEADS: SOLDERABILITY PER MIL-STD-750 METHOD 2026
10. WEIGHT: 0.23 GRAMS
11. RoHS COMPLIANT.

ELECTRICAL CHARACTERISTICS

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

PARAMETER	CONDITIONS	SYMBOL		UNIT
PEAK POWER DISSIPATION	WITH A 10/1000 μ S WAVEFORM, SEE NOTE 1 & FIG.1	P_{PPM}	1500	W
PEAK PULSE CURRENT	WITH A 10/1000 μ S WAVEFORM, SEE NOTE 1 & FIG.1	I_{PPM}	SEE TABLE	A
STEADY STATE POWER DISSIPATION	AT $T_L = 75^\circ\text{C}$, SEE NOTE 2	$P_{M(AV)}$	6.5	W
PEAK FORWARD SURGE CURRENT	8.3ms SINGLE HALF SINE-WAVE (JEDEC METHOD), SEE NOTE 3	I_{FSM}	200	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE	AT 50A FOR UNI-DIRECTIONAL TYPES ONLY, SEE NOTE 4	V_F	3.5/5.0	V
OPERATING JUNCTION TEMPERATURE RANGE		T_J	-55 TO +150	$^\circ\text{C}$
STORAGE TEMPERATURE RANGE		T_{STG}	-55 TO +150	$^\circ\text{C}$

- 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 0.31"x0.31" (8.0x8.0 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
4. $V_F < 3.5\text{V}$ for device with $V_{BR} \leq 200\text{V}$ and $V_F < 5.0\text{V}$ for device with $V_{BR} > 200\text{V}$



SMCJ_SERIES SPECIFICATION

Rev. A

Part No.	Reverse Stand-off Voltage	Breakdown Voltage @I _T		Test Current	Maximum Clamping Voltage @I _{PP}		Maximum Reverse Leakage Current	Marking Code	
	V _{RWM}	V _{BR} Min	V _{BR} Max	I _T	V _C	I _{PP}	I _R @V _{RWM}		
	Volts	Volts	Volts	mA	Volts	A	μA	UNI	BI
SMCJ5.0(C)A	5.0	6.40	7.00	10	9.2	163.0	800	GDE	BDE
SMCJ6.0(C)A	6.0	6.67	7.37	10	10.3	145.6	800	GDG	BDG
SMCJ6.5(C)A	6.5	7.22	7.98	10	11.2	133.9	500	GDK	BDK
SMCJ7.0(C)A	7.0	7.78	8.60	10	12.0	125.0	200	GDM	BDM
SMCJ7.5(C)A	7.5	8.33	9.21	1.0	12.9	116.3	100	GDP	BDP
SMCJ8.0(C)A	8.0	8.89	9.83	1.0	13.6	110.3	50	GDR	BDR
SMCJ8.5(C)A	8.5	9.44	10.4	1.0	14.4	104.2	20	GDT	BDT
SMCJ9.0(C)A	9.0	10.0	11.1	1.0	15.4	97.4	10	GDV	BDV
SMCJ10(C)A	10	11.1	12.3	1.0	17.0	88.2	5	GDX	BDX
SMCJ11(C)A	11	12.2	13.5	1.0	18.2	82.4	5	GDZ	BDZ
SMCJ12(C)A	12	13.3	14.7	1.0	19.9	75.3	5	GEE	BEE
SMCJ13(C)A	13	14.4	15.9	1.0	21.5	69.7	5	GEG	BEG
SMCJ14(C)A	14	15.6	17.2	1.0	23.2	64.7	5	GEK	BEK
SMCJ15(C)A	15	16.7	18.5	1.0	24.4	61.5	5	GEM	BEM
SMCJ16(C)A	16	17.8	19.7	1.0	26.0	57.7	5	GEP	BEP
SMCJ17(C)A	17	18.9	20.9	1.0	27.6	54.4	5	GER	BER
SMCJ18(C)A	18	20.0	22.1	1.0	29.2	51.4	5	GET	BET
SMCJ20(C)A	20	22.2	24.5	1.0	32.4	46.3	5	GEV	BEV
SMCJ22(C)A	22	24.4	26.9	1.0	35.5	42.2	5	GEX	BEX
SMCJ24(C)A	24	26.7	29.5	1.0	38.9	38.6	5	GEZ	BEZ
SMCJ26(C)A	26	28.9	31.9	1.0	42.1	35.6	5	GFE	BFE
SMCJ28(C)A	28	31.1	34.4	1.0	45.4	33.0	5	GFG	BFG
SMCJ30(C)A	30	33.3	36.8	1.0	48.4	31.0	5	GFK	BFK
SMCJ33(C)A	33	36.7	40.6	1.0	53.3	28.1	5	GFM	BFM
SMCJ36(C)A	36	40.0	44.2	1.0	58.1	25.8	5	GFP	BFP
SMCJ40(C)A	40	44.4	49.1	1.0	64.5	23.2	5	GFR	BFR
SMCJ43(C)A	43	47.8	52.8	1.0	69.4	21.6	5	GFT	BFT
SMCJ45(C)A	45	50.0	55.3	1.0	72.7	20.6	5	GFV	BFV
SMCJ48(C)A	48	53.3	58.9	1.0	77.4	19.4	5	GFX	BFX
SMCJ51(C)A	51	56.7	62.7	1.0	82.4	18.2	5	GFZ	BFZ
SMCJ54(C)A	54	60.0	66.3	1.0	87.1	17.2	5	GGE	BGE
SMCJ58(C)A	58	64.4	71.2	1.0	93.6	16.0	5	GGG	BGG
SMCJ60(C)A	60	66.7	73.7	1.0	96.8	15.5	5	GGK	BGK
SMCJ64(C)A	64	71.1	78.6	1.0	103.0	14.6	5	GGM	BGM
SMCJ70(C)A	70	77.8	86.0	1.0	113.0	13.3	5	GGP	BGP
SMCJ75(C)A	75	83.3	92.1	1.0	121.0	12.4	5	GGR	BGR
SMCJ78(C)A	78	86.7	95.8	1.0	126.0	11.9	5	GGT	BGT
SMCJ85(C)A	85	94.4	104	1.0	137.0	11.0	5	GGV	BGV



SMCJ_SERIES SPECIFICATION

Rev. A

Part No.	Reverse Stand-off Voltage	Breakdown Voltage @ I_T		Test Current	Maximum Clamping Voltage @ I_{PP}		Maximum Reverse Leakage Current	Marking Code	
	V_{RWM}	V_{BR} Min	V_{BR} Max	I_T	V_C	I_{PP}	$I_R@V_{RWM}$		
	Volts	Volts	Volts	mA	Volts	A	μA	UNI	BI
SMCJ90(C)A	90	100	111	1.0	146.0	10.3	5	GGX	BGX
SMCJ100(C)A	100	111	123	1.0	162.0	9.3	5	GGZ	BGZ
SMCJ110(C)A	110	122	135	1.0	177.0	8.4	5	GHE	BHE
SMCJ120(C)A	120	133	147	1.0	193.0	7.8	5	GHG	BHG
SMCJ130(C)A	130	144	159	1.0	209.0	7.2	5	GHK	BHK
SMCJ150(C)A	150	167	185	1.0	243.0	6.2	5	GHM	BHM
SMCJ160(C)A	160	178	197	1.0	259.0	5.8	5	GHP	BHP
SMCJ170(C)A	170	189	209	1.0	275.0	5.5	5	GHR	BHR
SMCJ180(C)A	180	201	222	1.0	292.0	5.1	5	GHT	BHT
SMCJ200(C)A	200	224	247	1.0	324.0	4.6	5	GHW,GHV	BHW,BHV
SMCJ220(C)A	220	246	272	1.0	356.0	4.2	5	GHX	BHX
SMCJ250(C)A	250	279	309	1.0	405.0	3.7	5	GHZ	BHZ
SMCJ300(C)A	300	335	371	1.0	486.0	3.1	5	GJE	BJE
SMCJ350(C)A	350	391	432	1.0	567.0	2.6	5	GJG	BJG
SMCJ400(C)A	400	447	494	1.0	648.0	2.3	5	GJK	BJK
SMCJ440(C)A	440	492	543	1.0	713.0	2.1	5	GJM	BJM

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

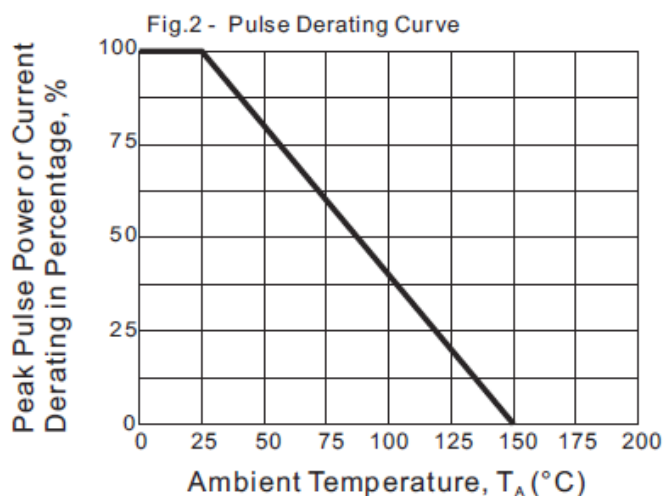
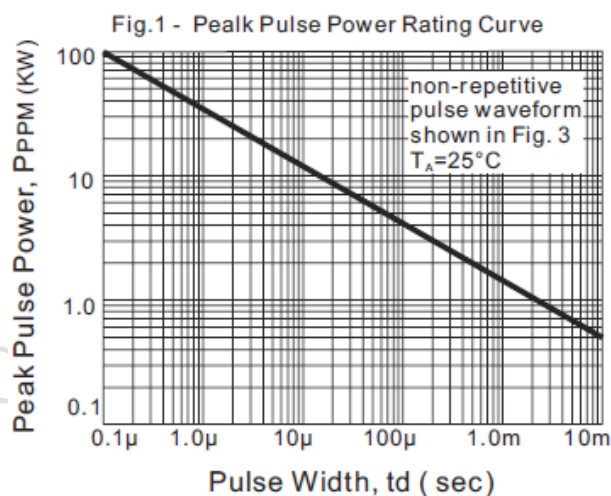
3. For bi-directional types having V_{RWM} of 10 volts and less, the I_R limit is doubled

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. 7 & Fig. 8

RATINGS AND CHARACTERISTIC CURVES



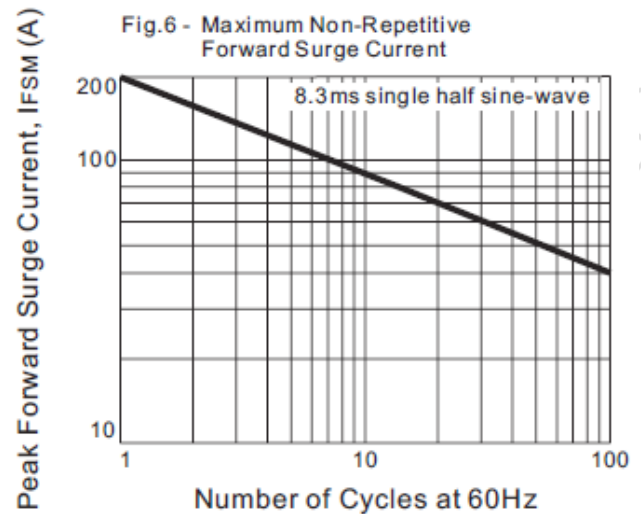
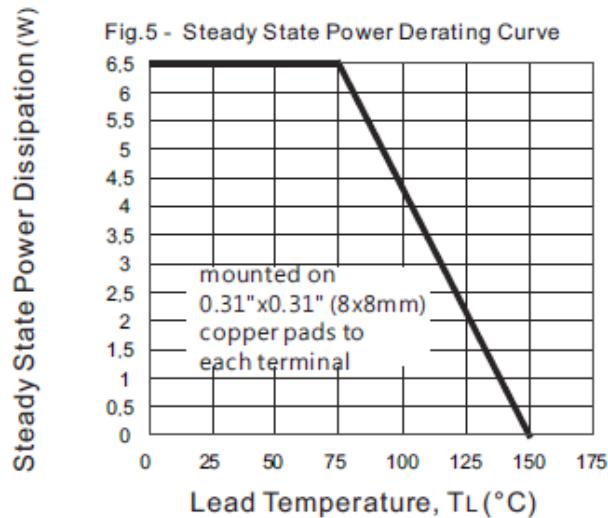
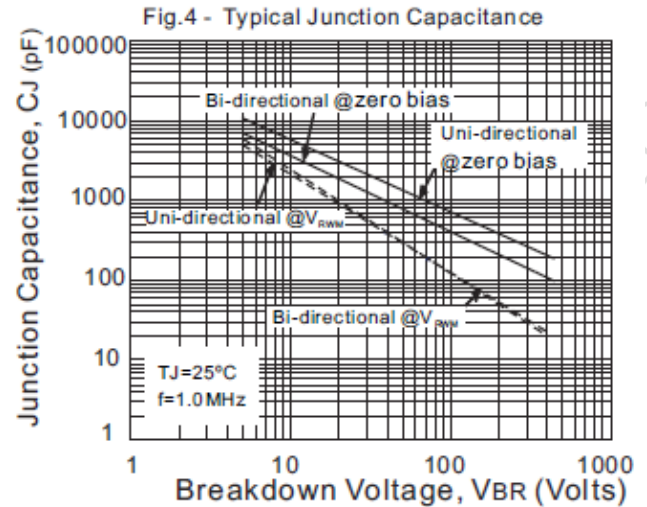
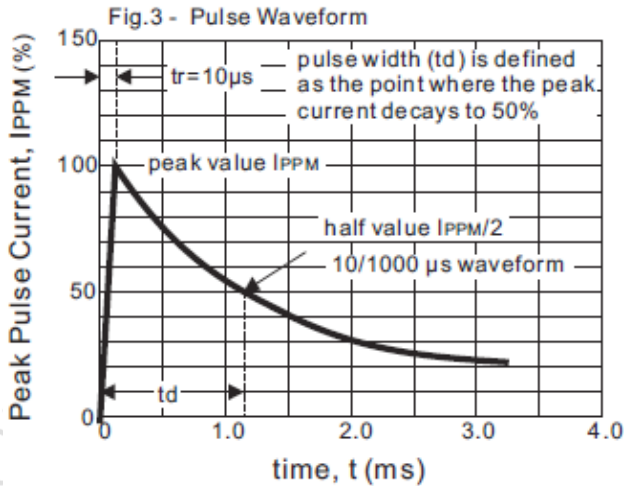


Fig. 7 - Transients of several thousand volts can be clamped to a safe level by the TVS

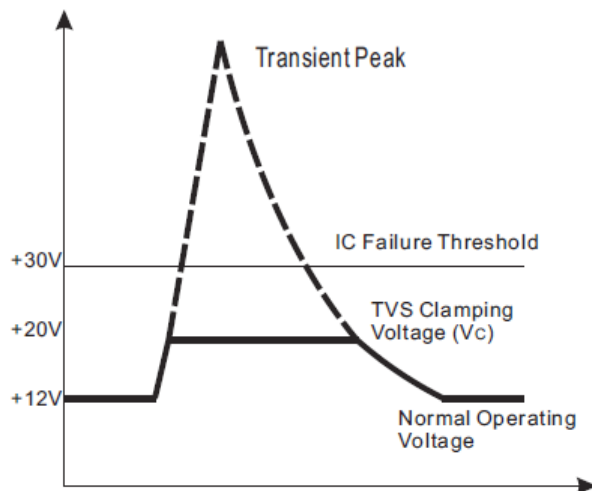


Fig. 8 - Transient current is diverted to ground thru TVS; the voltage seen by the protected load is limited to the clamping voltage level

