

## *Data Sheet*

Customer: \_\_\_\_\_

Product: Transient Voltage Suppressors 3000W – 3.0SMCJ Series

Package : DO-214AB(SMC) \_\_\_\_\_

Issued Date: 10-Feb.-2015 \_\_\_\_\_

Edition: Ver. 1 \_\_\_\_\_

### Record of change

Date	Ver.	Description	Page
10-Feb.-2015	1		

### **HITANO ENTERPRISE CORP.**

7F-7, No. 3, Wu Chuan 1<sup>st</sup> Road, New Taipei Industrial Park,  
New Taipei City, TAIWAN, R.O.C.

Tel: +886 2 2299 1331 (Rep.)

Fax: +886 2 2298 2466, 2298 2969

Prepared by	Checked by	Approved by	Accepted by (customer)
10-Feb.-2015	10-Feb.-2015	10-Feb.-2015	
<i>Andy Hsu</i>	<i>Hwa Wu</i>	<i>Hwa Wu</i>	

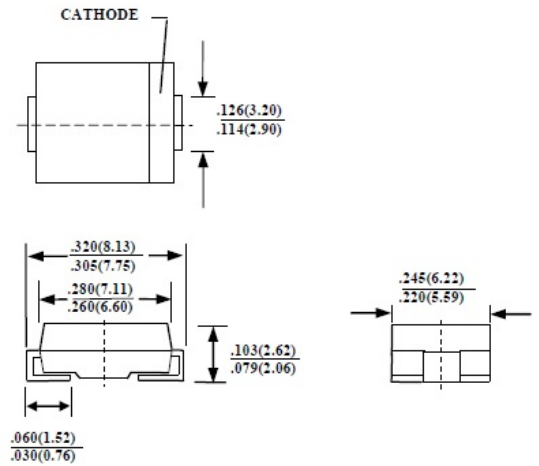
**3000W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR**

**FEATURES**

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY FLAMMABILITY CLASSIFICATION 94V-0.
- GLASS PASSIVATED JUNCTION.
- LOW PROFILE.
- EXCELLENT CLAMPING CAPABILITY.
- LOW INCREMENTAL SURGE RESISTANCE.
- FAST RESPONSE TIME: TYPICALLY LESS THAN 1.0 ps FROM 0 VOLTS TO V(BR) MIN.
- 3000 W PEAK PULSE POWER CAPABILITY WITH A 10/1000  $\mu$ S WAVEFORM , REPETITION RATE (DUTY CYCLE) : 0.01%.
- TYPICAL  $I_D$  LESS THAN 1 $\mu$ A ABOVE 10V.
- HIGH TEMPERATURE SOLDERING GUARANTEED: 250°C/10 SECONDS AT TERMINALS.
- ROHS & REACH COMPLIANT

**MECHANICAL DATA**

- CASE : MOLDED PLASTIC.
- TERMINALS : SOLDER PLATED.
- POLARITY : INDICATED BY CATHODE BAND.
- WEIGHT : 0.21 GRAMS.



CASE : DO-214AB (SMC)  
DIMENSIONS IN INCHES AND (MILLIMETERS)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**  
RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

RATINGS	SYMBOL	VALUE	UNITS
PEAK PULSE POWER DISSIPATION ON 10/1000 $\mu$ S WAVEFORM (NOTE 1)	$P_{PPM}$	MINIMUM 3000	WATTS
PEAK PULSE CURRENT OF 0N 10/1000 $\mu$ S WAVEFORM (NOTE 1)	$I_{PPM}$	SEE NEXT TABLE	A
POWER DISSIPATION ON INFINITE HEATSINK AT $T_L=75^\circ\text{C}$	$P_D$	6.0	WATTS
OPERATING JUNCTION AND STORAGE TEMPERATURE RANGE	$T_J, T_{STG}$	- 55 TO + 150	$^\circ\text{C}$

**NOTE :**

1. NON-REPETITIVE CURRENT PULSE, PER FIG.5 AND DERATED ABOVE  $T_A=25^\circ\text{C}$  PER FIG 1.
2. MEASURED ON 8.3ms SINGLE HALF SINE-WAVE OR EQUIVALENT SQUARE WAVE, DUTY CYCLE = 4 PULSES PER MINUTE MAXIMUM.

PART NUMBER	DEVICE MARKING CODE		WORKING PEAK REVERSE VOLTAGE V <sub>WM</sub>	BREAKDOWN VOLTAGE V <sub>(BR)</sub> (VOLTS) at I <sub>T</sub>		TEST CURRENT I <sub>T</sub> (mA)	MAXIMUM CLAMPING VOLTAGE AT I <sub>PPM</sub> VC(Volts)	MAX PEAK PULSE SURGE CURRENT I <sub>PPM</sub> (NOTE 2) (Amps)	MAXIMUM REVERSE LEAKAGE AT V <sub>WM</sub> I <sub>D</sub> (μA)
	UNI	BI		MIN	MAX				
	3.0SMCJ5.0	HDD	IDD	5.0	6.40	7.30	50	9.6	312.50
3.0SMCJ5.0A	HDE	IDE	5.0	6.40	7.00	50	9.2	326.09	5000
3.0SMCJ6.0	HDF	IDF	6.0	6.67	8.15	50	11.4	263.16	5000
3.0SMCJ6.0A	HDG	IDG	6.0	6.67	7.37	50	10.3	291.26	5000
3.0SMCJ6.5	HDH	IDH	6.5	7.22	8.82	50	12.3	243.90	2000
3.0SMCJ6.5A	HDK	IDK	6.5	7.22	7.98	50	11.2	267.86	2000
3.0SMCJ7.0	HDL	IDL	7.0	7.78	9.51	50	13.3	225.56	1000
3.0SMCJ7.0A	HDM	IDM	7.0	7.78	8.60	50	12.0	250.00	1000
3.0SMCJ7.5	HDN	IDN	7.5	8.33	10.2	5.0	14.3	209.79	250
3.0SMCJ7.5A	HDP	IDP	7.5	8.33	9.21	5.0	12.9	232.56	250
3.0SMCJ8.0	HDQ	IDQ	8.0	8.89	10.9	5.0	15.0	200.00	150
3.0SMCJ8.0A	HDR	IDR	8.0	8.89	9.83	5.0	13.6	220.59	150
3.0SMCJ8.5	HDS	IDS	8.5	9.44	11.5	5.0	15.9	188.68	50
3.0SMCJ8.5A	HDT	IDT	8.5	9.44	10.4	5.0	14.4	208.33	50
3.0SMCJ9.0	HDU	IDU	9.0	10.0	12.2	5.0	16.9	177.51	20
3.0SMCJ9.0A	HDV	IDV	9.0	10.0	11.1	5.0	15.4	194.81	20
3.0SMCJ10	HDW	IDW	10.0	11.1	13.6	5.0	18.8	159.57	15
3.0SMCJ10A	HDX	IDX	10.0	11.1	12.3	5.0	17.0	176.47	15
3.0SMCJ11	HDY	IDY	11.0	12.2	14.9	5.0	20.1	149.25	2.0
3.0SMCJ11A	HDZ	IDZ	11.0	12.2	13.5	5.0	18.2	164.84	2.0
3.0SMCJ12	HED	IED	12.0	13.3	16.3	5.0	22.0	136.36	2.0
3.0SMCJ12A	HEE	IEE	12.0	13.3	14.7	5.0	19.9	150.75	2.0
3.0SMCJ13	HEF	IEF	13.0	14.4	17.6	5.0	23.8	126.05	2.0
3.0SMCJ13A	HEG	IEG	13.0	14.4	15.9	5.0	21.5	139.53	2.0
3.0SMCJ14	HEH	IEH	14.0	15.6	19.1	5.0	25.8	116.28	2.0
3.0SMCJ14A	HEK	IEK	14.0	15.6	17.2	5.0	23.2	129.31	2.0
3.0SMCJ15	HEL	IEL	15.0	16.7	20.4	5.0	26.9	111.52	2.0
3.0SMCJ15A	HEM	IEM	15.0	16.7	18.5	5.0	24.4	122.95	2.0
3.0SMCJ16	HEN	IEN	16.0	17.8	21.8	5.0	28.8	104.17	2.0
3.0SMCJ16A	HEP	IEP	16.0	17.8	19.7	5.0	26.0	115.38	2.0
3.0SMCJ17	HEQ	IEQ	17.0	18.9	23.1	5.0	30.5	98.36	2.0
3.0SMCJ17A	HER	IER	17.0	18.9	20.9	5.0	27.6	108.70	2.0
3.0SMCJ18	HES	IES	18.0	20.0	24.4	5.0	32.2	93.17	2.0
3.0SMCJ18A	HET	IET	18.0	20.0	22.1	5.0	29.2	102.74	2.0
3.0SMCJ20	HEU	IEU	20.0	22.2	27.1	5.0	35.8	83.80	2.0
3.0SMCJ20A	HEV	IEV	20.0	22.2	24.5	5.0	32.4	92.59	2.0
3.0SMCJ22	HEW	IEW	22.0	24.4	29.8	5.0	39.4	76.14	2.0
3.0SMCJ22A	HEX	IEX	22.0	24.4	26.9	5.0	35.5	84.51	2.0
3.0SMCJ24	HEY	IEY	24.0	26.7	32.6	5.0	43.0	69.77	2.0
3.0SMCJ24A	HEZ	IEZ	24.0	26.7	29.5	5.0	38.9	77.12	2.0
3.0SMCJ26	HFD	IFD	26.0	28.9	35.3	5.0	46.6	64.38	2.0
3.0SMCJ26A	HFE	IFE	26.0	28.9	31.9	5.0	42.1	71.26	2.0
3.0SMCJ28	HFF	IFF	28.0	31.1	38.0	5.0	50.0	60.00	2.0
3.0SMCJ28A	HFG	IFG	28.0	31.1	34.4	5.0	45.4	66.08	2.0
3.0SMCJ30	HFH	IFH	30.0	33.3	40.7	5.0	53.5	56.07	2.0
3.0SMCJ30A	HFJ	IFJ	30.0	33.3	36.8	5.0	48.4	61.98	2.0
3.0SMCJ33	HFL	IFL	33.0	36.7	44.9	5.0	59.0	50.85	2.0
3.0SMCJ33A	HFM	IFM	33.0	36.7	40.6	5.0	53.3	56.29	2.0
3.0SMCJ36	HFN	IFN	36.0	40.0	48.9	5.0	64.3	46.66	2.0
3.0SMCJ36A	HFP	IFP	36.0	40.0	44.2	5.0	58.1	51.64	2.0
3.0SMCJ40	HFQ	IFQ	40.0	44.4	54.3	5.0	71.4	42.02	2.0
3.0SMCJ40A	HFR	IFR	40.0	44.4	49.1	5.0	64.5	46.51	2.0
3.0SMCJ43	HFS	IFS	43.0	47.8	58.4	5.0	76.7	39.11	2.0
3.0SMCJ43A	HFT	IFT	43.0	47.8	52.8	5.0	69.4	43.23	2.0
3.0SMCJ45	HFU	IFU	45.0	50.0	61.1	5.0	80.3	37.36	2.0
3.0SMCJ45A	HFV	IFV	45.0	50.0	55.3	5.0	72.7	41.27	2.0
3.0SMCJ48	HFW	IFW	48.0	53.3	65.1	5.0	85.5	35.09	2.0
3.0SMCJ48A	HFX	IFX	48.0	53.3	58.9	5.0	77.4	38.76	2.0
3.0SMCJ51	HFY	IFY	51.0	56.7	69.3	5.0	91.1	32.93	2.0
3.0SMCJ51A	HFZ	IFZ	51.0	56.7	62.7	5.0	82.4	36.41	2.0
3.0SMCJ54	HGD	IGD	54.0	60.0	73.3	5.0	96.3	31.15	2.0
3.0SMCJ54A	HGE	IGE	54.0	60.0	66.3	5.0	87.1	34.44	2.0
3.0SMCJ58	HGF	IGF	58.0	64.4	78.7	5.0	103.0	29.13	2.0
3.0SMCJ58A	HGG	IGG	58.0	64.4	71.2	5.0	93.6	32.05	2.0
3.0SMCJ60	HGH	IGH	60.0	66.7	81.5	5.0	107.0	28.04	2.0
3.0SMCJ60A	HGK	IGK	60.0	66.7	73.7	5.0	96.8	30.99	2.0

PART NUMBER	DEVICE MARKING CODE		WORKING PEAK REVERSE VOLTAGE $V_{WM}$	BREAKDOWN VOLTAGE $V_{(BR)}$ (VOLTS) at $I_T$		TEST CURRENT $I_T$ (mA)	MAXIMUM CLAMPING VOLTAGE AT $I_{PPM}$ VC(Volts)	MAX PEAK PULSE SURGE CURRENT $I_{PPM}$ (NOTE 2) (Amps)	MAXIMUM REVERSE LEAKAGE AT $V_{WM}$ $I_D$ ( $\mu$ A)
	UNI	BI		MIN	MAX				
3.0SMCJ64	HGL	IGL	64.0	71.1	86.9	5.0	114.0	26.32	2.0
3.0SMCJ64A	HGM	IGM	64.0	71.1	78.6	5.0	103.0	29.13	2.0
3.0SMCJ70	HGN	IGN	70.0	77.8	95.1	5.0	125.0	24.00	2.0
3.0SMCJ70A	HGP	IGP	70.0	77.8	86.0	5.0	113.0	26.55	2.0
3.0SMCJ75	HGQ	IGQ	75.0	83.3	102.0	5.0	134.0	22.39	2.0
3.0SMCJ75A	HGR	IGR	75.0	83.3	92.1	5.0	121.0	24.79	2.0
3.0SMCJ78	HGS	IGS	78.0	86.7	106.0	5.0	139.0	21.58	2.0
3.0SMCJ78A	HGT	IGT	78.0	86.7	95.8	5.0	126.0	23.81	2.0
3.0SMCJ85	HGU	IGU	85.0	94.4	115.0	5.0	151.0	19.87	2.0
3.0SMCJ85A	HGV	IGV	85.0	94.4	104.0	5.0	137.0	21.90	2.0
3.0SMCJ90	HGW	IGW	90.0	100.0	122.0	5.0	160.0	18.75	2.0
3.0SMCJ90A	HGX	IGX	90.0	100.0	111.0	5.0	146.0	20.55	2.0
3.0SMCJ100	HGY	IGY	100.0	111.0	136.0	5.0	179.0	16.76	2.0
3.0SMCJ100A	HGZ	IGZ	100.0	111.0	123.0	5.0	162.0	18.52	2.0
3.0SMCJ110	HHD	IHD	110.0	122.0	149.0	5.0	196.0	15.31	2.0
3.0SMCJ110A	HHE	IHE	110.0	122.0	135.0	5.0	177.0	16.95	2.0
3.0SMCJ120	HHF	IHF	120.0	133.0	163.0	5.0	214.0	14.02	2.0
3.0SMCJ120A	HHG	IHG	120.0	133.0	147.0	5.0	193.0	15.54	2.0
3.0SMCJ130	HHH	IHH	130.0	144.0	176.0	5.0	231.0	12.99	2.0
3.0SMCJ130A	HHK	IHK	130.0	144.0	159.0	5.0	209.0	14.35	2.0
3.0SMCJ150	HHL	IHL	150.0	167.0	204.0	5.0	268.0	11.19	2.0
3.0SMCJ150A	HHM	IHM	150.0	167.0	185.0	5.0	243.0	12.35	2.0
3.0SMCJ160	HHN	IHN	160.0	178.0	218.0	5.0	287.0	10.45	2.0
3.0SMCJ160A	HHP	IHP	160.0	178.0	197.0	5.0	259.0	11.58	2.0
3.0SMCJ170	HHQ	IHQ	170.0	189.0	231.0	5.0	304.0	9.87	2.0
3.0SMCJ170A	HHR	IHR	170.0	189.0	209.0	5.0	275.0	10.91	2.0
3.0SMCJ180	PHS	DHS	180.0	200.2	244.8	5.0	322.2	9.31	2.0
3.0SMCJ180A	PHT	DHT	180.0	200.0	220.0	5.0	291.6	10.29	2.0
3.0SMCJ190	PHU	DHU	190.0	211.3	258.4	5.0	340.1	8.82	2.0
3.0SMCJ190A	PHV	DHV	190.0	211.0	232.0	5.0	307.8	9.75	2.0
3.0SMCJ200A	PHW	DHW	200.0	224.0	247.0	5.0	324.0	9.26	2.0
3.0SMCJ220A	PHX	DHX	220.0	246.0	272.0	5.0	356.0	8.43	2.0
3.0SMCJ250A	PHZ	DHZ	250.0	279.0	309.0	5.0	405.0	7.41	2.0
3.0SMCJ300A	PJE	DJE	300.0	335.0	371.0	5.0	486.0	6.17	2.0
3.0SMCJ350A	PJG	DJG	350.0	391.0	432.0	5.0	567.0	5.29	2.0
3.0SMCJ400A	PJK	DJK	400.0	447.0	494.0	5.0	648.0	4.63	2.0
3.0SMCJ440A	PJM	DJM	440.0	492.0	543.0	5.0	713.0	4.21	2.0

NOTE :

1. Suffix 'A ' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device.
2. Add suffix 'C ' or ' CA ' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having  $V_R$  of 10 volts and under, the  $I_R$  limit is double.

# RATINGS AND CHARACTERISTIC CURVES 3.0SMCJ5.0 THRU 3.0SMCJ440A

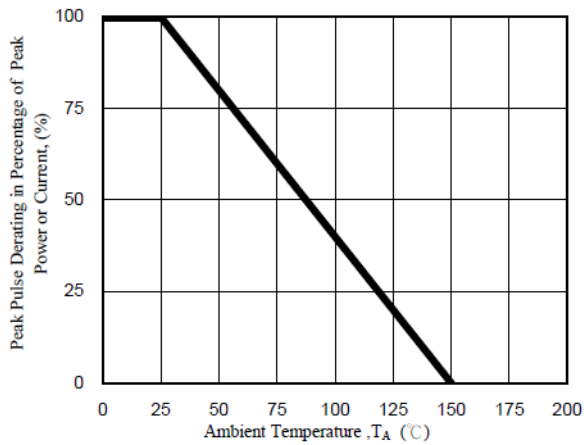


Fig. 1 - Pulse Derating Curve

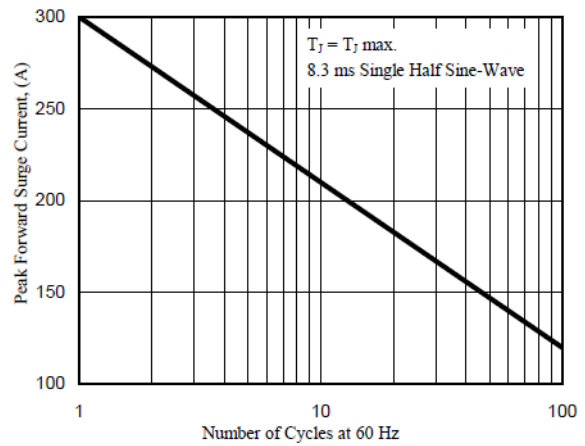


Fig. 2 - Maximum Non-Repetitive Surge Current

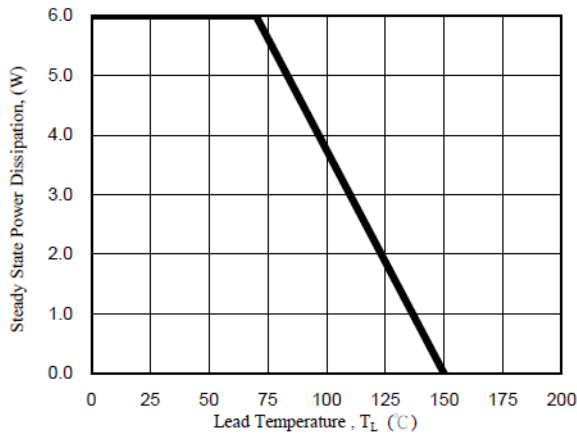


Fig. 3 - Steady State Power Derating Curve

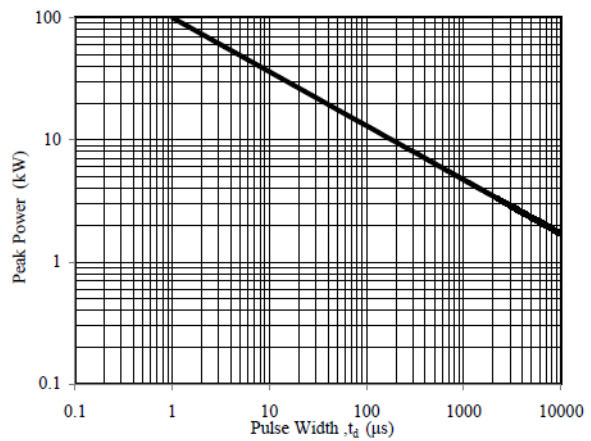


Fig. 4 - Peak Pulse Power Rating Curve

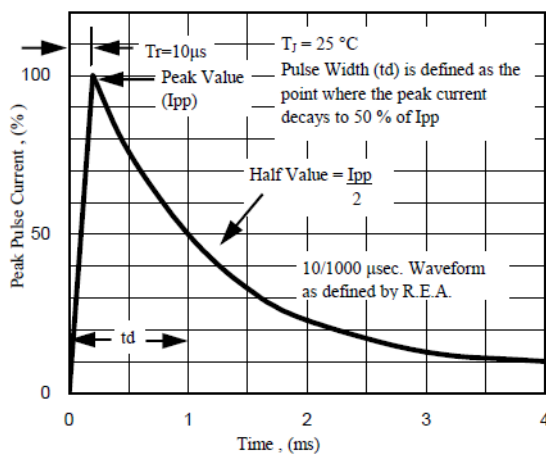


Fig. 5 - Pulse Waveform

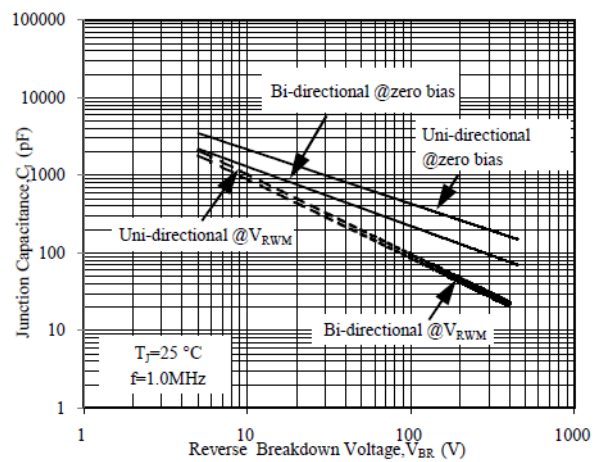


Fig. 6 - Typical Junction Capacitance