

# 3.0SMCJ11C - 220CA

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

**Stand-off Voltage :** 11 to 220V

**Peak Pulse Power :** 3000 W

### FEATURES :

- \* 3000W peak pulse power capability with a 10/1000 $\mu$ s waveform
- \* Excellent clamping capability
- \* Low inductance
- \* High temperature soldering : 250 °C/10 seconds at terminals.
- \* Built-in strain relief
- \* **Pb / RoHS Free**

### MECHANICAL DATA

- \* Case : SMC Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead Formed for Surface Mount
- \* Mounting position : Any
- \* Weight : 0.21 gram

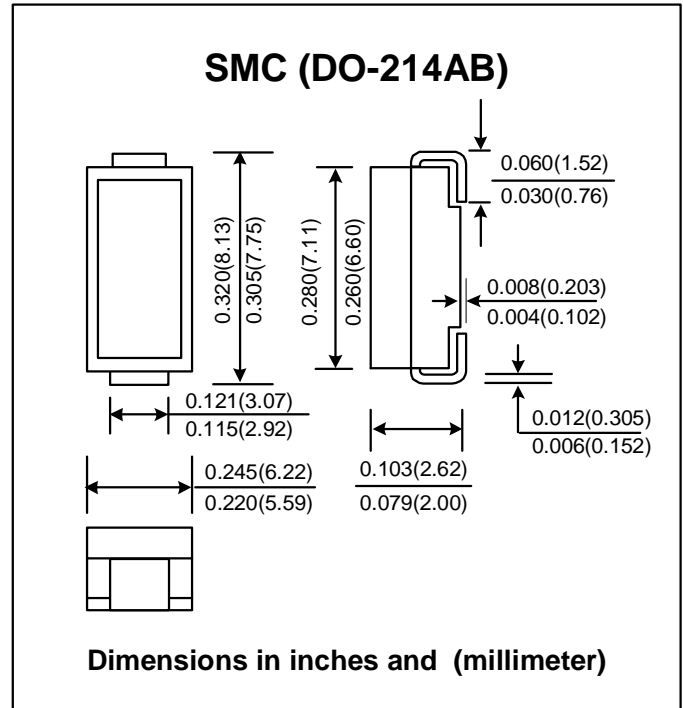
### DEVICES FOR UNIPOLAR APPLICATIONS

For uni-directional without "C"

Electrical characteristics apply in both directions

### MAXIMUM RATINGS

Rating at 25 °C ambient temperature unless otherwise specified.



Rating	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform <sup>(1)</sup> <sup>(2)</sup>	P <sub>PPM</sub>	3000	W
Peak Pulse Current on 10/1000 s waveform <sup>(1)</sup>	I <sub>PPM</sub>	See Next Table	A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load <sup>(2)</sup> <sup>(3)</sup>	I <sub>FSM</sub>	200	A
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150	°C

#### Notes :

(1) Non-repetitive Current pulse, per Fig. 3 and derated above Ta = 25 °C per Fig. 1

(2) Mounted on 5.0 mm<sup>2</sup> (0.013 thick) land areas.

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

## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

Type	Marking Code	Breakdown Voltage @ $T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ $V_{WM}$	Maximum Clamping Voltage @ $I_{PPM}$	Maximum Peak Pulse Surge Current
		$V_{BR}$ (V)		$I_T$				
		Min.	Max.	(mA)				
3.0SMCJ11C	3013	12.2	15.4	1.0	11	1000	20.1	149.2
3.0SMCJ11CA	3513	12.2	14.0	1.0	11	1000	18.2	184.8
3.0SMCJ12C	3014	13.3	16.9	1.0	12	1000	22.0	136.4
3.0SMCJ12CA	3514	13.3	15.3	1.0	12	1000	19.9	150.6
3.0SMCJ13C	3015	14.4	18.2	1.0	13	500	23.8	126.0
3.0SMCJ13CA	3515	14.4	16.5	1.0	13	500	21.5	139.4
3.0SMCJ14C	3016	15.6	19.8	1.0	14	200	25.8	116.2
3.0SMCJ14CA	3516	15.6	17.9	1.0	14	200	23.2	129.4
3.0SMCJ15C	3018	16.7	21.1	1.0	15	100	26.9	111.6
3.0SMCJ15CA	3518	16.7	19.2	1.0	15	100	24.4	123.0
3.0SMCJ16C	3019	17.8	22.6	1.0	16	50	28.8	104.2
3.0SMCJ16CA	3519	17.8	20.5	1.0	16	50	26.0	115.4
3.0SMCJ17C	3020	18.9	23.9	1.0	17	20	30.5	98.4
3.0SMCJ17CA	3520	18.9	21.7	1.0	17	20	27.6	106.6
3.0SMCJ18C	3021	20.0	25.3	1.0	18	10	32.2	93.2
3.0SMCJ18CA	3521	20.0	23.3	1.0	18	10	29.2	102.8
3.0SMCJ20C	3023	22.2	28.1	1.0	20	10	35.8	83.8
3.0SMCJ20CA	3523	22.2	25.5	1.0	20	10	32.4	92.6
3.0SMCJ22C	3026	24.4	30.9	1.0	22	5	39.4	76.2
3.0SMCJ22CA	3526	24.4	28.0	1.0	22	5	35.5	84.4
3.0SMCJ24C	3028	26.7	33.8	1.0	24	5	43.0	69.8
3.0SMCJ24CA	3528	26.7	30.7	1.0	24	5	38.9	77.2
3.0SMCJ26C	3030	28.9	36.6	1.0	26	5	46.6	64.4
3.0SMCJ26CA	3530	28.9	33.2	1.0	26	5	42.1	71.2
3.0SMCJ28C	3033	31.1	39.4	1.0	28	5	50.0	60.0
3.0SMCJ28CA	3533	31.1	35.8	1.0	28	5	45.4	66.0
3.0SMCJ30C	3035	33.3	42.2	1.0	30	5	53.5	56.0
3.0SMCJ30CA	3535	33.3	38.3	1.0	30	5	48.4	62.0
3.0SMCJ33C	3039	36.7	46.5	1.0	33	5	59.0	50.4
3.0SMCJ33CA	3539	36.7	42.2	1.0	33	5	53.3	56.2
3.0SMCJ36C	3042	40.0	50.7	1.0	36	5	64.3	46.6
3.0SMCJ36CA	3542	40.0	46.0	1.0	36	5	58.1	51.6
3.0SMCJ40C	3047	44.4	56.3	1.0	40	5	71.4	42.0
3.0SMCJ40CA	3547	44.4	51.1	1.0	40	5	64.5	46.4
3.0SMCJ43C	3050	47.8	60.5	1.0	43	5	76.7	39.2
3.0SMCJ43CA	3550	47.8	54.9	1.0	43	5	69.4	43.2
3.0SMCJ45C	3053	50.0	63.3	1.0	45	5	80.3	37.4
3.0SMCJ45CA	3553	50.0	57.5	1.0	45	5	72.7	41.2
3.0SMCJ48C	3056	53.3	67.5	1.0	48	5	85.5	35.0
3.0SMCJ48CA	3556	53.3	61.3	1.0	48	5	77.4	38.8
3.0SMCJ51C	3060	56.7	71.8	1.0	51	5	91.1	37.0
3.0SMCJ51CA	3560	56.7	65.2	1.0	51	5	82.4	36.4
3.0SMCJ54C	3063	60.0	76.0	1.0	54	5	96.3	31.2
3.0SMCJ54CA	3563	60.0	69.0	1.0	54	5	87.1	34.4
3.0SMCJ58C	3068	64.4	81.6	1.0	58	5	103	39.2
3.0SMCJ58CA	3568	64.4	74.1	1.0	58	5	93.6	32.0

## ELECTRICAL CHARACTERISTICS

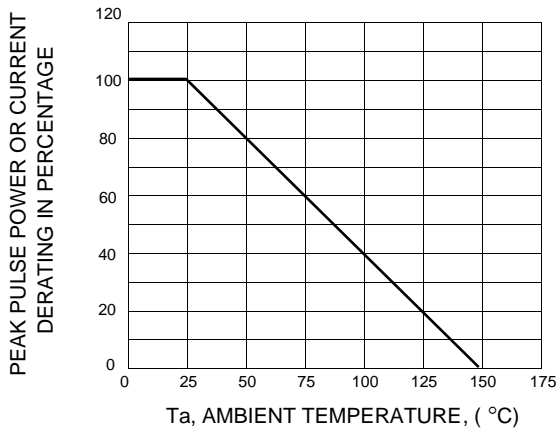
Rating at 25 °C ambient temperature unless otherwise specified

Type	Marking Code	Breakdown Voltage @ $T^{(1)}$			Working Peak Reverse Voltage	Maximum Reverse Leakage @ $V_{WM}$	Maximum Clamping Voltage @ $I_{PPM}$	Maximum Peak Pulse Surge Current
		$V_{BR}$ (V)		$I_T$				
		Min.	Max.	(mA)				
3.0SMCJ60C	3071	66.7	84.5	1.0	60	5	107	28.0
3.0SMCJ60CA	3571	66.7	76.7	1.0	60	5	96	31.0
3.0SMCJ64C	3075	71.1	90.1	1.0	64	5	114	26.4
3.0SMCJ64CA	3575	71.1	81.8	1.0	64	5	103	29.2
3.0SMCJ70C	3082	77.8	98.6	1.0	70	5	125	24.0
3.0SMCJ70CA	3582	77.8	89.5	1.0	70	5	113	26.6
3.0SMCJ75C	3088	83.3	105.7	1.0	75	5	134	22.4
3.0SMCJ75CA	3588	83.3	95.8	1.0	75	5	121	24.8
3.0SMCJ78C	3091	86.7	109.8	1.0	78	5	139	21.6
3.0SMCJ78CA	3591	86.7	99.7	1.0	78	5	126	22.8
3.0SMCJ85C	3099	94.4	119.2	1.0	85	5	151	19.8
3.0SMCJ85CA	3599	94.4	108.2	1.0	85	5	137	20.8
3.0SMCJ90C	30B1	100	126.5	1.0	90	5	160	18.8
3.0SMCJ90CA	35B1	100	115.5	1.0	90	5	146	20.6
3.0SMCJ100C	30B2	111	141.0	1.0	100	5	179	16.6
3.0SMCJ100CA	35B2	111	128.0	1.0	100	5	162	18.6
3.0SMCJ110C	30B3	122	154.5	1.0	110	5	196	15.4
3.0SMCJ110CA	35B3	122	140.5	1.0	110	5	177	16.8
3.0SMCJ120C	30B4	133	169.0	1.0	120	5	214	14.0
3.0SMCJ120CA	35B4	133	153.0	1.0	120	5	193	15.6
3.0SMCJ130C	30B5	144	182.5	1.0	130	5	231	13.0
3.0SMCJ130CA	35B5	144	165.5	1.0	130	5	209	14.4
3.0SMCJ150C	30B8	167	211.5	1.0	150	5	268	11.2
3.0SMCJ150CA	35B8	167	192.5	1.0	150	5	243	12.4
3.0SMCJ160C	30B9	178	226.0	1.0	160	5	287	10.4
3.0SMCJ160CA	35B9	178	205.0	1.0	160	5	259	11.6
3.0SMCJ170C	30D0	189	239.5	1.0	170	5	304	9.8
3.0SMCJ170CA	35D0	189	217.5	1.0	170	5	275	11.0
3.0SMCJ180C	30D1	198	253.8	1.0	180	5	322	9.3
3.0SMCJ180CA	35D1	198	230.4	1.0	180	5	292	10.3
3.0SMCJ190C	30D2	209	267.9	1.0	190	5	340	8.8
3.0SMCJ190CA	35D2	209	243.2	1.0	190	5	308	9.7
3.0SMCJ200C	30D3	220	282.0	1.0	200	5	358	8.4
3.0SMCJ200CA	35D3	220	256.0	1.0	200	5	324	9.3
3.0SMCJ210C	30D4	231	296.1	1.0	210	5	376	7.8
3.0SMCJ210CA	35D4	231	268.8	1.0	210	5	340	8.8
3.0SMCJ220C	30D5	242	310.2	1.0	220	5	394	7.6
3.0SMCJ220CA	35D5	242	281.6	1.0	220	5	356	8.4

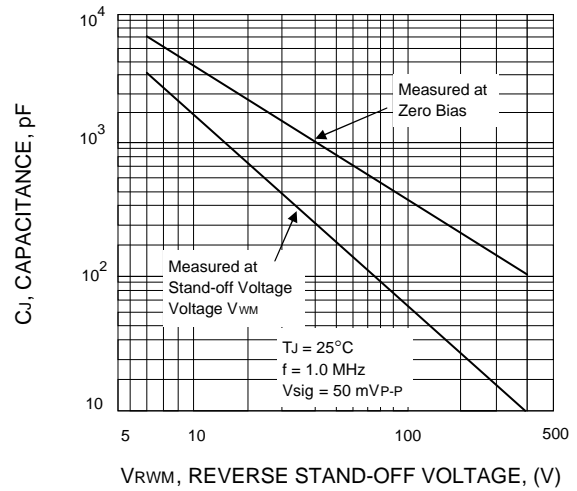
Note: (1) Pulse test:  $t_p \leq 50ms$ .

### RATING AND CHARACTERISTIC CURVES ( 3.0SMCJ11C - 220CA )

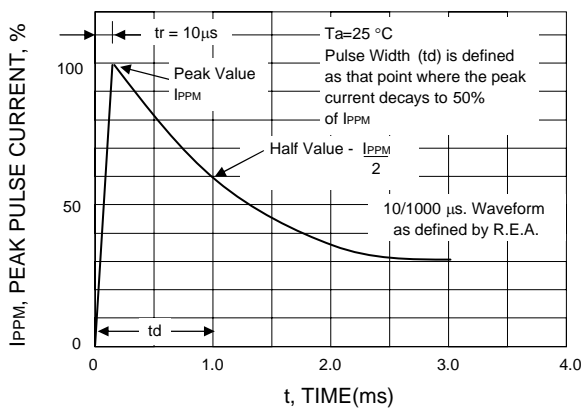
**FIG.1 - PULSE DERATING CURVE**



**FIG.2 - TYPICAL JUNCTION CAPACITANCE**



**FIG.3 - PULSE WAVEFORM**



**FIG.4 - PEAK PULSE POWER RATING CURVE**

