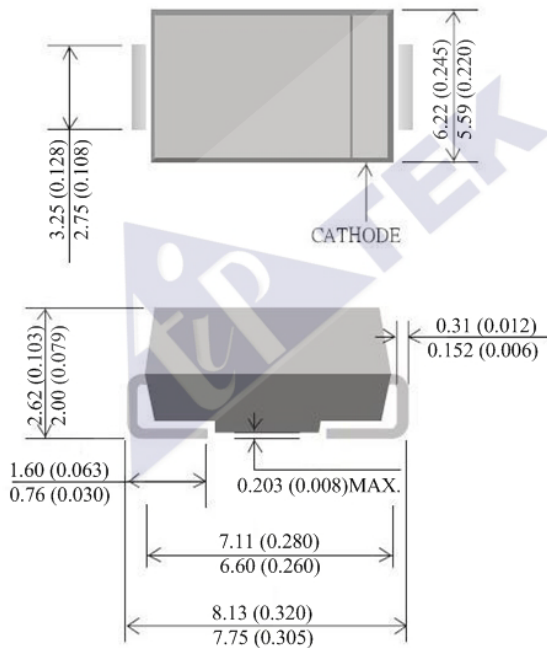


## 3000W SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



CASE : DO-214AB(SMC)

DIMENSIONS IN MILLIMETERS AND (INCHES)

### 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: 260°C/10 SECONDS AT TERMINALS

### MECHANICAL DATA

- CASE : MOLDED PLASTIC
- TERMINALS : SOLDER PLATED
- POLARITY : INDICATED BY CATHODE BAND
- WEIGHT : 0.24 GRAMS
- Pb Free: 3.0SMCJ5.0~3.0SMCJ440CA
- Halogen Free: 3.0SMCJ5.0-H~3.0SMCJ440CA-H

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

PARAMETER	SYMBOL	VALUE	UNITS
PEAK PULSE POWER DISSIPATION ON 10/1000 $\mu$ s WAVEFORM (NOTE 1, FIG. 1)	$P_{PPM}$	MINIMUM 3000	WATTS
PEAK PULSE CURRENT OF ON 10/1000 $\mu$ S WAVEFORM (NOTE 1, FIG. 3)	$I_{PPM}$	SEE TABLE 1	A
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD, UNIDIRECTIONAL ONLY (NOTE 2)	$I_{FSM}$	250	A
MAXIMUM INSTANTANEOUS FORWARD VOLTAGE AT 25 A FOR UNIDIRECTIONAL ONLY (NOTE 3 & 4)	$V_F$	SEE NOTE 4	V
OPERATING AND STORAGE TEMPERATURE RANGE	$T_J, T_{STG}$	- 55 TO + 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 8.0 $\times$ 8.0mm COPPER PADS TO EACH TERMINAL  
 3. MEASURED ON 8.3ms SINGLE HALF SINE-WAVE OR EQUIVALENT SQUARE WAVE, DUTY CYCLE = 4 PULSES PER MINUTE MAXIMUM  
 4.  $V_F=3.5\text{V}$  ON 3.0SMCJ5.0 THRU 3.0SMCJ90A DEVICES AND  $V_F=5.0\text{V}$  ON 3.0SMCJ100 THRU 3.0SMCJ440A

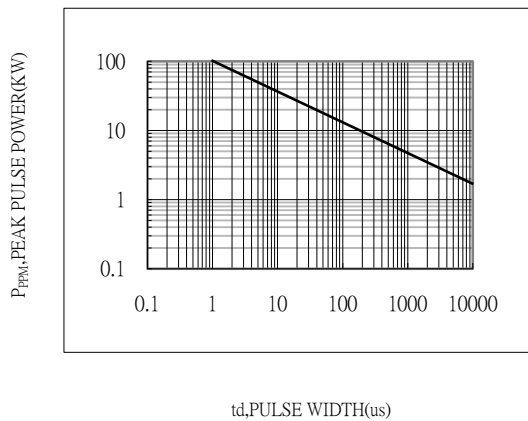
Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		V <sub>RWM</sub>	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub>	I <sub>R</sub> @ V <sub>RWM</sub>	V <sub>c</sub> @ I <sub>pp</sub>	I <sub>pp</sub>
			Min	Max				
UNI	BI	V	V	V	m A	μA	V	A
3.0SMCJ5.0	3.0SMCJ5.0C	5.0	6.40	7.30	10.0	1000.0	9.6	313
3.0SMCJ5.0A	3.0SMCJ5.0CA	5.0	6.40	7.00	10.0	1000.0	9.2	326
3.0SMCJ6.0	3.0SMCJ6.0C	6.0	6.67	8.15	10.0	1000.0	11.4	263
3.0SMCJ6.0A	3.0SMCJ6.0CA	6.0	6.67	7.37	10.0	1000.0	10.3	291
3.0SMCJ6.5	3.0SMCJ6.5C	6.5	7.22	8.82	10.0	500.0	12.3	244
3.0SMCJ6.5A	3.0SMCJ6.5CA	6.5	7.22	7.98	10.0	500.0	11.2	268
3.0SMCJ7.0	3.0SMCJ7.0C	7.0	7.78	9.51	10.0	200.0	13.3	226
3.0SMCJ7.0A	3.0SMCJ7.0CA	7.0	7.78	8.60	10.0	200.0	12	250
3.0SMCJ7.5	3.0SMCJ7.5C	7.5	8.33	10.20	1.0	100.0	14.3	210
3.0SMCJ7.5A	3.0SMCJ7.5CA	7.5	8.33	9.21	1.0	100.0	12.9	233
3.0SMCJ8.0	3.0SMCJ8.0C	8.0	8.89	10.90	1.0	50.0	15	200
3.0SMCJ8.0A	3.0SMCJ8.0AC	8.0	8.89	9.83	1.0	50.0	13.6	221
3.0SMCJ8.5	3.0SMCJ8.5C	8.5	9.44	11.50	1.0	25.0	15.9	189
3.0SMCJ8.5A	3.0SMCJ8.5CA	8.5	9.44	10.40	1.0	25.0	14.4	208
3.0SMCJ9.0	3.0SMCJ9.0C	9.0	10.00	12.20	1.0	10.0	16.9	178
3.0SMCJ9.0A	3.0SMCJ9.0CA	9.0	10.00	11.10	1.0	10.0	15.4	195
3.0SMCJ10	3.0SMCJ10C	10.0	11.10	13.60	1.0	5.0	18.8	160
3.0SMCJ10A	3.0SMCJ10CA	10.0	11.10	12.30	1.0	5.0	17	176
3.0SMCJ11	3.0SMCJ11C	11.0	12.20	14.90	1.0	5.0	20.1	149
3.0SMCJ11A	3.0SMCJ11CA	11.0	12.20	13.50	1.0	5.0	18.2	165
3.0SMCJ12	3.0SMCJ12C	12.0	13.30	16.30	1.0	5.0	22	136
3.0SMCJ12A	3.0SMCJ12CA	12.0	13.30	14.70	1.0	5.0	19.9	151
3.0SMCJ13	3.0SMCJ13C	13.0	14.40	17.60	1.0	5.0	23.8	126
3.0SMCJ13A	3.0SMCJ13CA	13.0	14.40	15.90	1.0	5.0	21.5	140
3.0SMCJ14	3.0SMCJ14C	14.0	15.60	19.10	1.0	5.0	25.8	116
3.0SMCJ14A	3.0SMCJ14CA	14.0	15.60	17.20	1.0	5.0	23.2	129
3.0SMCJ15	3.0SMCJ15C	15.0	16.70	20.40	1.0	5.0	26.9	112
3.0SMCJ15A	3.0SMCJ15CA	15.0	16.70	18.50	1.0	5.0	24.4	123
3.0SMCJ16	3.0SMCJ16C	16.0	17.80	21.80	1.0	5.0	28.8	104
3.0SMCJ16A	3.0SMCJ16CA	16.0	17.80	19.70	1.0	5.0	26	115
3.0SMCJ17	3.0SMCJ17C	17.0	18.90	23.10	1.0	5.0	30.5	98.4
3.0SMCJ17A	3.0SMCJ17CA	17.0	18.90	20.90	1.0	5.0	27.6	109
3.0SMCJ18	3.0SMCJ18C	18.0	20.00	24.40	1.0	5.0	32.2	93.2
3.0SMCJ18A	3.0SMCJ18CA	18.0	20.00	22.10	1.0	5.0	29.2	103
3.0SMCJ19	3.0SMCJ19C	19.0	21.10	25.80	1.0	5.0	34	88.2
3.0SMCJ19A	3.0SMCJ19CA	19.0	21.10	23.30	1.0	5.0	30.8	97.5
3.0SMCJ20	3.0SMCJ20C	20.0	22.20	27.10	1.0	5.0	35.8	83.8
3.0SMCJ20A	3.0SMCJ20CA	20.0	22.20	24.50	1.0	5.0	32.4	92.6

Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		$V_{RWM}$	$V_{BR} @ I_T$		$I_T$	$I_R @ V_{RWM}$	$V_C @ I_{pp}$	$I_{pp}$
			Min	Max				
UNI	BI	V	V	V	m A	$\mu A$	V	A
3.0SMCJ22	3.0SMCJ22C	22.0	24.40	29.80	1.0	5.0	39.4	76.1
3.0SMCJ22A	3.0SMCJ22CA	22.0	24.40	26.90	1.0	5.0	35.5	84.5
3.0SMCJ24	3.0SMCJ24C	24.0	26.70	32.60	1.0	5.0	43	69.8
3.0SMCJ24A	3.0SMCJ24CA	24.0	26.70	29.50	1.0	5.0	38.9	77.1
3.0SMCJ26	3.0SMCJ26C	26.0	28.90	35.30	1.0	5.0	46.6	64.4
3.0SMCJ26A	3.0SMCJ26CA	26.0	28.90	31.90	1.0	5.0	42.1	71.3
3.0SMCJ28	3.0SMCJ28C	28.0	31.10	38.00	1.0	5.0	50	60
3.0SMCJ28A	3.0SMCJ28CA	28.0	31.10	34.40	1.0	5.0	45.4	66.1
3.0SMCJ30	3.0SMCJ30C	30.0	33.30	40.70	1.0	5.0	53.5	56.1
3.0SMCJ30A	3.0SMCJ30CA	30.0	33.30	36.80	1.0	5.0	48.4	62
3.0SMCJ33	3.0SMCJ33C	33.0	36.70	44.90	1.0	5.0	59	50.8
3.0SMCJ33A	3.0SMCJ33CA	33.0	36.70	40.60	1.0	5.0	53.3	56.3
3.0SMCJ36	3.0SMCJ36C	36.0	40.00	48.90	1.0	5.0	64.3	46.7
3.0SMCJ36A	3.0SMCJ36CA	36.0	40.00	44.20	1.0	5.0	58.1	51.6
3.0SMCJ40	3.0SMCJ40C	40.0	44.40	54.30	1.0	5.0	71.4	42
3.0SMCJ40A	3.0SMCJ40CA	40.0	44.40	49.10	1.0	5.0	64.5	46.5
3.0SMCJ43	3.0SMCJ43C	43.0	47.80	58.40	1.0	5.0	76.7	39.1
3.0SMCJ43A	3.0SMCJ43CA	43.0	47.80	52.80	1.0	5.0	69.4	43.2
3.0SMCJ45	3.0SMCJ45C	45.0	50.00	61.10	1.0	5.0	80.3	37.4
3.0SMCJ45A	3.0SMCJ45CA	45.0	50.00	55.30	1.0	5.0	72.7	41.3
3.0SMCJ48	3.0SMCJ48C	48.0	53.30	65.10	1.0	5.0	85.5	35.1
3.0SMCJ48A	3.0SMCJ48CA	48.0	53.30	58.90	1.0	5.0	77.4	38.8
3.0SMCJ51	3.0SMCJ51C	51.0	56.70	69.30	1.0	5.0	91.1	32.9
3.0SMCJ51A	3.0SMCJ51CA	51.0	56.70	62.70	1.0	5.0	82.4	36.4
3.0SMCJ54	3.0SMCJ54C	54.0	60.00	73.30	1.0	5.0	96.3	31.2
3.0SMCJ54A	3.0SMCJ54CA	54.0	60.00	66.30	1.0	5.0	87.1	34.4
3.0SMCJ58	3.0SMCJ58C	58.0	64.40	78.70	1.0	5.0	103	29.1
3.0SMCJ58A	3.0SMCJ58CA	58.0	64.40	71.20	1.0	5.0	93.6	32.1
3.0SMCJ60	3.0SMCJ60C	60.0	66.70	81.50	1.0	5.0	107	28
3.0SMCJ60A	3.0SMCJ60CA	60.0	66.70	73.70	1.0	5.0	96.8	31
3.0SMCJ64	3.0SMCJ64C	64.0	71.10	86.90	1.0	5.0	114	26.3
3.0SMCJ64A	3.0SMCJ64CA	64.0	71.10	78.60	1.0	5.0	103	29.1
3.0SMCJ70	3.0SMCJ70C	70.0	77.80	95.10	1.0	5.0	125	24
3.0SMCJ70A	3.0SMCJ70CA	70.0	77.80	86.00	1.0	5.0	113	26.5
3.0SMCJ75	3.0SMCJ75C	75.0	83.30	102.00	1.0	5.0	134	22.4
3.0SMCJ75A	3.0SMCJ75CA	75.0	83.30	92.10	1.0	5.0	121	24.8
3.0SMCJ78	3.0SMCJ78C	78.0	86.70	106.00	1.0	5.0	139	21.6
3.0SMCJ78A	3.0SMCJ78CA	78.0	86.70	95.80	1.0	5.0	126	23.8

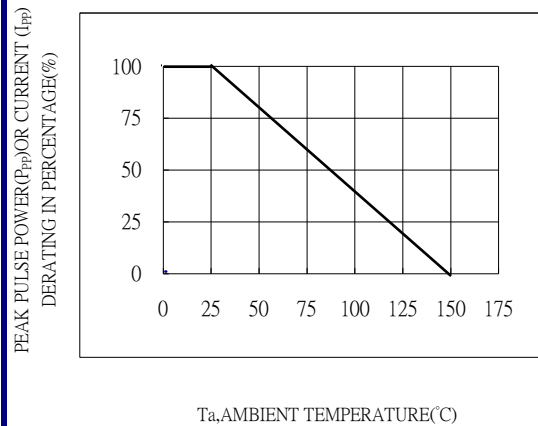
Part Number		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
		V <sub>RWM</sub>	V <sub>BR</sub> @ I <sub>T</sub>		I <sub>T</sub>	I <sub>R</sub> @ V <sub>RWM</sub>	V <sub>c</sub> @ I <sub>pp</sub>	I <sub>pp</sub>
			Min	Max				
UNI	BI	V	V	V	m A	μA	V	A
3.0SMCJ80	3.0SMCJ80C	80.0	89.00	109.00	1.0	5.0	143	20.9
3.0SMCJ80A	3.0SMCJ80CA	80.0	88.80	97.60	1.0	5.0	130	23.1
3.0SMCJ85	3.0SMCJ85C	85.0	94.40	115.00	1.0	5.0	151	19.9
3.0SMCJ85A	3.0SMCJ85CA	85.0	94.40	104.00	1.0	5.0	137	21.9
3.0SMCJ90	3.0SMCJ90C	90.0	100.00	122.00	1.0	5.0	160	18.8
3.0SMCJ90A	3.0SMCJ90CA	90.0	100.00	111.00	1.0	5.0	146	20.5
3.0SMCJ100	3.0SMCJ100C	100.0	111.00	136.00	1.0	5.0	179	16.8
3.0SMCJ100A	3.0SMCJ100CA	100.0	111.00	123.00	1.0	5.0	162	18.5
3.0SMCJ110	3.0SMCJ110C	110.0	122.00	149.00	1.0	5.0	196	15.3
3.0SMCJ110A	3.0SMCJ110CA	110.0	122.00	135.00	1.0	5.0	177	16.9
3.0SMCJ120	3.0SMCJ120C	120.0	133.00	163.00	1.0	5.0	214	14
3.0SMCJ120A	3.0SMCJ120CA	120.0	133.00	147.00	1.0	5.0	193	15.5
3.0SMCJ130	3.0SMCJ130C	130.0	144.00	176.00	1.0	5.0	231	13
3.0SMCJ130A	3.0SMCJ130CA	130.0	144.00	159.00	1.0	5.0	209	14.4
3.0SMCJ140	3.0SMCJ140C	140.0	156.00	190.00	1.0	5.0	251	12
3.0SMCJ140A	3.0SMCJ140CA	140.0	155.00	171.00	1.0	5.0	227	13.2
3.0SMCJ150	3.0SMCJ150C	150.0	167.00	204.00	1.0	5.0	268	11.2
3.0SMCJ150A	3.0SMCJ150CA	150.0	167.00	185.00	1.0	5.0	243	12.3
3.0SMCJ160	3.0SMCJ160C	160.0	178.00	218.00	1.0	5.0	287	10.5
3.0SMCJ160A	3.0SMCJ160CA	160.0	178.00	197.00	1.0	5.0	259	11.6
3.0SMCJ170	3.0SMCJ170C	170.0	189.00	231.00	1.0	5.0	304	9.87
3.0SMCJ170A	3.0SMCJ170CA	170.0	189.00	209.00	1.0	5.0	275	10.9
3.0SMCJ180	3.0SMCJ180C	180.0	200.00	245.00	1.0	5.0	322	9.31
3.0SMCJ180A	3.0SMCJ180CA	180.0	200.00	220.00	1.0	5.0	292	10.3
3.0SMCJ190	3.0SMC190C	190.0	211.00	258.00	1.0	5.0	340	8.82
3.0SMCJ190A	3.0SMCJ190CA	190.0	211.00	232.00	1.0	5.0	308	9.75
3.0SMCJ200A	3.0SMCJ200CA	200.0	224.00	247.00	1.0	5.0	324	9.26
3.0SMCJ220A	3.0SMCJ220CA	220.0	246.00	272.00	1.0	5.0	356	8.43
3.0SMCJ250A	3.0SMCJ250CA	250.0	279.00	309.00	1.0	5.0	405	7.41
3.0SMCJ300A	3.0SMCJ300CA	300.0	335.00	371.00	1.0	5.0	486	6.17
3.0SMCJ350A	3.0SMCJ350CA	350.0	391.00	432.00	1.0	5.0	567	5.29
3.0SMCJ400A	3.0SMCJ400CA	400.0	447.00	494.00	1.0	5.0	648	4.63
3.0SMCJ440A	3.0SMCJ440CA	440.0	492.00	543.00	1.0	5.0	713	4.21

**Note:**

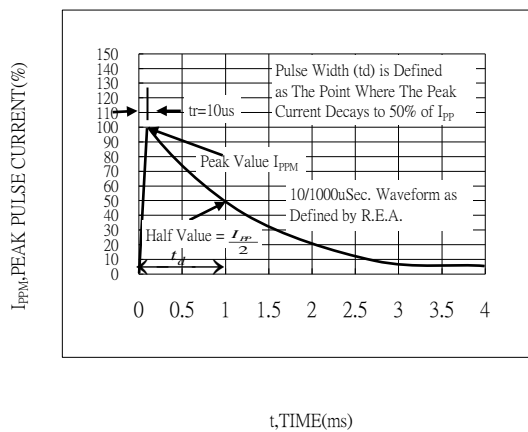
1. Suffix 'A' denotes 5% tolerance device. Without 'A' denotes 10% tolerance device.
2. Add suffix 'C' or 'CA' after part number to specify Bi-directional devices.
3. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double .



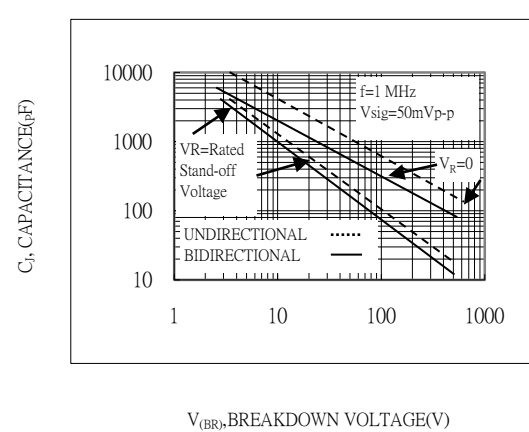
**Fig.1-PEAK PULSE POWER RATING CURVE**



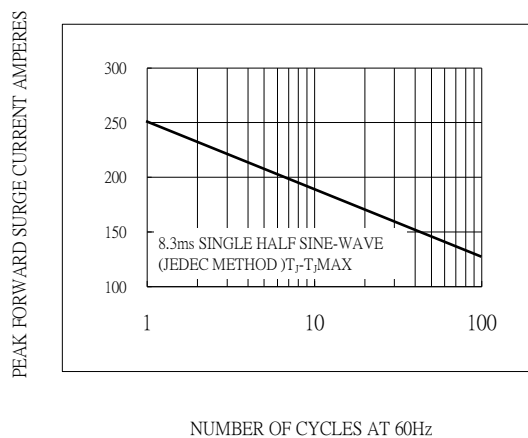
**Fig.2-PULSE DERATING CURVE**



**Fig.3-PULSE WAVEFORM**



**Fig.4-TYPICAL JUNCTION CAPACITANCE**



**Fig.5-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**