

# SMDJ5.0A THRU SMDJ220CA

## 3000W Surface Mount Transient Voltage Suppressors

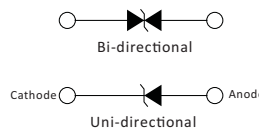
### DO-214AB/SMC

#### DESCRIPTION

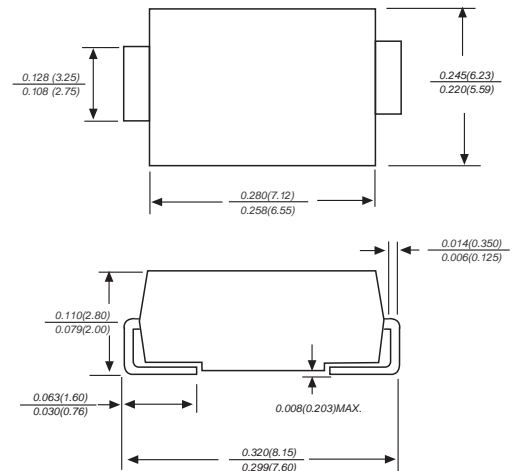
The SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

#### FEATURES

- > Low profile package
- > Ideal for automated placement
- > Available in uni-directional and Bi-directional
- > 3000 Watt peak pulse power capability with a 10/1000  $\mu$ s waveform
- > For surface mounted applications to optimize board space
- > Excellent clamping capability
- > Very fast response time
- > Low incremental surge resistance



SCHEMATIC SYMBOL



Dimensions in inches and (millimeters)

#### APPLICATIONS

TVS devices are ideal for the protection of I/O Interfaces, VCC bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

#### MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000us waveform (Note1,Note2).	PPPM	3000	Watts
Peak Pulse Current of on 10/1000us waveform(Note1).	IPPM	See Table	Amps
Steady State Power Dissipation at T <sub>A</sub> =50°C (Note2).	P <sub>M(AV)</sub>	6.5	Watts
Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	V <sub>F</sub>	3.5	Volts
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3).	I <sub>FSM</sub>	300	Amps

#### NOTES:

1. Non-repetitive current pulse, T<sub>A</sub> = 25°C.
2. Mounted on 8.0mm x 8.0mm (0.03mm thick) Copper Pads to each terminal.
3. 8.3ms single half sine-wave, or equivalent square wave for unidirectional device only, Duty cycle=4 pulses per minutes maximum.

#### THERMAL CONSIDERATIONS

Symbol	Parameter	Value	Unit
T <sub>J</sub>	Operating Junction Temperature	-55 to +150	°C
T <sub>S</sub>	Storage Temperature Range	-55 to +150	°C
R <sub>θJA</sub>	Junction to Ambient on printed circuit	75	°C/W

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## ELECTRICAL CHARACTERISTICS

Part Number		Reverse Stand-off Voltage	Breakdown Voltage Min. @I <sub>T</sub>	Breakdown Voltage Max. @I <sub>T</sub>	Test Current	Maximum Clamping Voltage @I <sub>PP</sub>	Peak Pulse Current	Maximum Reverse Leakage @V <sub>RWM</sub>
UNI	BI	V <sub>R</sub> (V)	V <sub>B</sub> (V)	V <sub>B</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> ( $\mu$ A)
SMDJ5.0A	SMDJ5.0CA	5	6.4	7	10	9.2	326.1	800
SMDJ6.0A	SMDJ6.0CA	6	6.67	7.37	10	10.3	291.3	800
SMDJ6.5A	SMDJ6.5CA	6.5	7.22	7.98	10	11.2	267.9	500
SMDJ7.0A	SMDJ7.0CA	7	7.78	8.6	10	12	250	200
SMDJ7.5A	SMDJ7.5CA	7.5	8.33	9.21	1	12.9	232.6	100
SMDJ8.0A	SMDJ8.0CA	8	8.89	9.83	1	13.6	220.6	50
SMDJ8.5A	SMDJ8.5CA	8.5	9.44	10.4	1	14.4	208.3	20
SMDJ9.0A	SMDJ9.0CA	9	10	11.1	1	15.4	194.8	10
SMDJ10A	SMDJ10CA	10	11.1	12.3	1	17	176.5	5
SMDJ11A	SMDJ11CA	11	12.2	13.5	1	18.2	164.8	2
SMDJ12A	SMDJ12CA	12	13.3	14.7	1	19.9	150.8	2
SMDJ13A	SMDJ13CA	13	14.4	15.9	1	21.5	139.5	2
SMDJ14A	SMDJ14CA	14	15.6	17.2	1	23.2	129.3	2
SMDJ15A	SMDJ15CA	15	16.7	18.5	1	24.4	123	2
SMDJ16A	SMDJ16CA	16	17.8	19.7	1	26	115.4	2
SMDJ17A	SMDJ17CA	17	18.9	20.9	1	27.6	108.7	2
SMDJ18A	SMDJ18CA	18	20	22.1	1	29.2	102.7	2
SMDJ20A	SMDJ20CA	20	22.2	24.5	1	32.4	92.6	2
SMDJ22A	SMDJ22CA	22	24.4	26.9	1	35.5	84.5	2
SMDJ24A	SMDJ24CA	24	26.7	29.5	1	38.9	77.1	2
SMDJ26A	SMDJ26CA	26	28.9	31.9	1	42.1	71.3	2
SMDJ28A	SMDJ28CA	28	31.1	34.4	1	45.4	66.1	2
SMDJ30A	SMDJ30CA	30	33.3	36.8	1	48.4	62	2
SMDJ33A	SMDJ33CA	33	36.7	40.6	1	53.3	56.3	2
SMDJ36A	SMDJ36CA	36	40	44.2	1	58.1	51.6	2
SMDJ40A	SMDJ40CA	40	44.4	49.1	1	64.5	46.5	2
SMDJ43A	SMDJ43CA	43	47.8	52.8	1	69.4	43.2	2
SMDJ45A	SMDJ45CA	45	50	55.3	1	72.7	41.3	2
SMDJ48A	SMDJ48CA	48	53.3	58.9	1	77.4	38.8	2
SMDJ51A	SMDJ51CA	51	56.7	62.7	1	82.4	36.4	2
SMDJ54A	SMDJ54CA	54	60	66.3	1	87.1	34.4	2
SMDJ58A	SMDJ58CA	58	64.4	71.2	1	93.6	32.1	2
SMDJ60A	SMDJ60CA	60	66.7	73.7	1	96.8	31	2
SMDJ64A	SMDJ64CA	64	71.1	78.6	1	103	29.1	2
SMDJ70A	SMDJ70CA	70	77.8	86	1	113	26.5	2
SMDJ75A	SMDJ75CA	75	83.3	92.1	1	121	24.8	2
SMDJ78A	SMDJ78CA	78	86.7	95.8	1	126	23.8	2
SMDJ85A	SMDJ85CA	85	94.4	104	1	137	21.9	2
SMDJ90A	SMDJ90CA	90	100	111	1	146	20.5	2
SMDJ100A	SMDJ100CA	100	111	123	1	162	18.5	2

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UNI	BI	V <sub>R</sub> (V)	V <sub>B</sub> (V)	V <sub>B</sub> (V)	I <sub>T</sub> (mA)	V <sub>C</sub> (V)	I <sub>PP</sub> (A)	I <sub>R</sub> ( $\mu$ A)
SMDJ110A	SMDJ110CA	110	122	135	1	177	16.9	2
SMDJ120A	SMDJ120CA	120	133	147	1	193	15.5	2
SMDJ130A	SMDJ130CA	130	144	159	1	209	14.4	2
SMDJ150A	SMDJ150CA	150	167	185	1	243	12.3	2
SMDJ160A	SMDJ160CA	160	178	197	1	259	11.6	2
SMDJ170A	SMDJ170CA	170	189	209	1	275	10.9	2
SMDJ180A	SMDJ180CA	180	201	222	1	292	10.3	2
SMDJ190A	SMDJ190CA	190	209	243	1	308	9.7	2
SMDJ200A	SMDJ200CA	200	224	247	1	324	9.3	2
SMDJ210A	SMDJ210CA	210	231	269	1	340	8.8	2
SMDJ220A	SMDJ220CA	220	246	272	1	356	8.4	2

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RATINGS AND CHARACTERISTIC CURVES ( $T_A=25^\circ\text{C}$  unless otherwise noted)

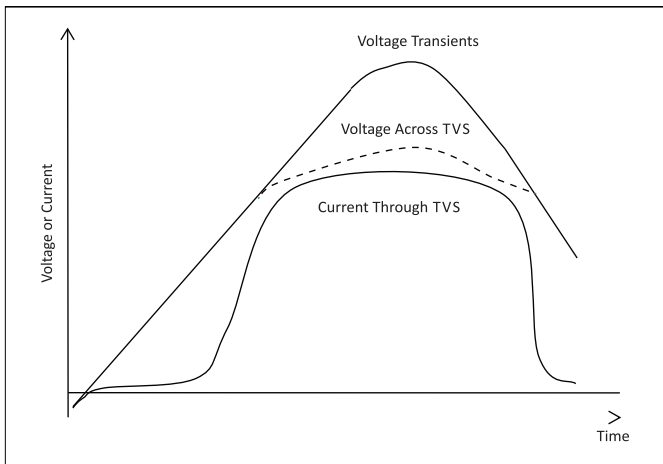


Figure 1. TVS Transients Clamping Waveform

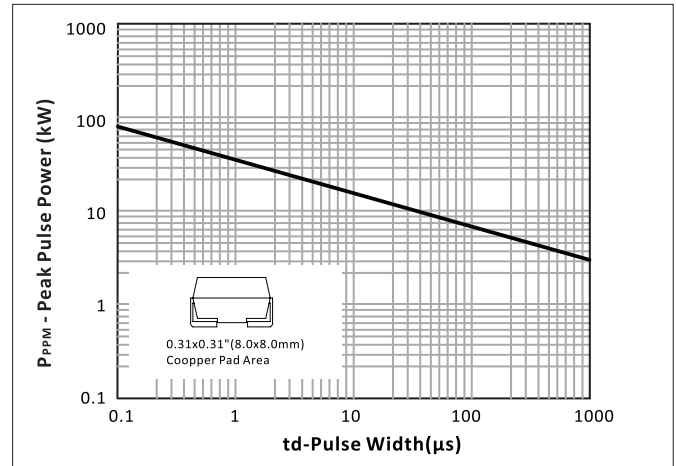


Figure 2. Peak Pulse Power Rating Curve

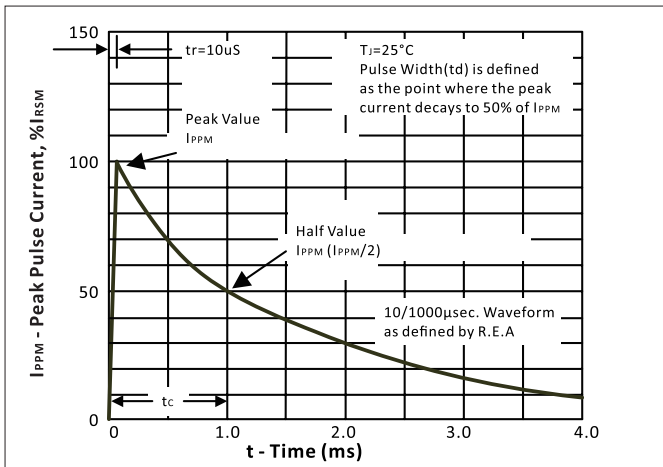


Figure 3. Pulse Waveform

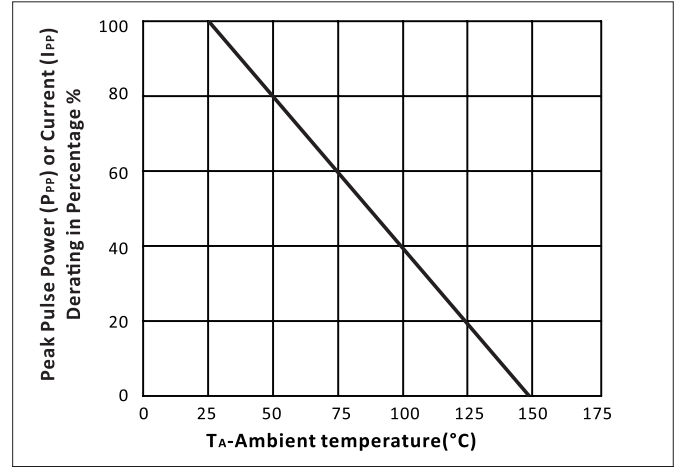


Figure 4. Pulse Derating Curve

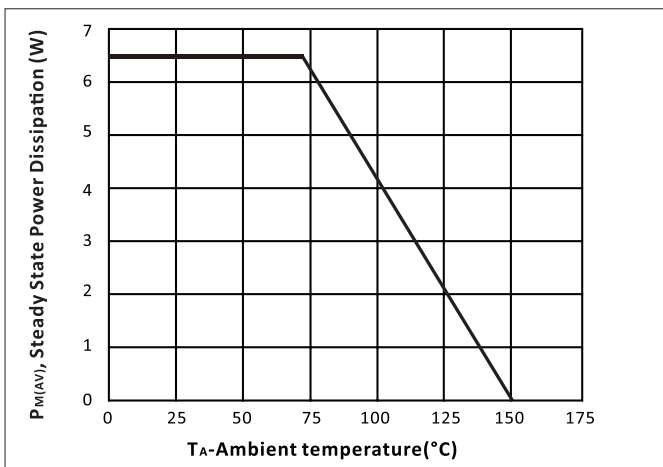


Figure 5. Steady State Power Dissipation Derating Curve

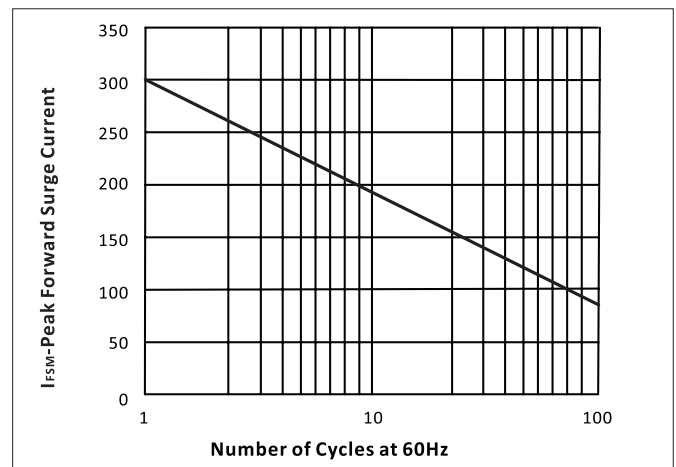


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only