

# 5.0SMCJx Series

Uni-Directional Transient Voltage Suppressors  
 Peak Pulse Power 5000W Stand-off Voltage 11V to 170V

## Features

- 5000W peak pulse power capability with a 10/1000  $\mu$ s waveform
- Excellent clamping capability
- Excellent clamping capability and fast response time
- Moisture sensitivity: level 1, per J-STD-020
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- IEC 61000-4-2 ESD 30kV(Air), 30kV (Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4



DO-214AB(SMC)



**RoHS**  
COMPLIANT

## Applications

For use in sensitive electronics protection against voltage transients induced by lightning or inductive load switching. Key applications include protection of I/O interfaces, industrial and LED lighting applications, DC power buses, and other vulnerable circuits used in consumer electronics.

## Mechanical Data

**Case:** DO-214AB (SMC)

Molding compound meets UL 94 V-0 flammability rating

**Terminals:** Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

## Absolute Maximum Ratings (T<sub>A</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation with a 10/1000 $\mu$ s Waveform <sup>1</sup>	P <sub>PPM</sub>	5000	W
Peak Pulse Current with a 10/1000 $\mu$ s Waveform <sup>1</sup>	I <sub>PPM</sub>	See Next Table	A
Maximum Instantaneous Forward Voltage @ I <sub>PP</sub> = 100A	V <sub>F</sub>	5	V
Thermal Resistance, Junction to Ambient <sup>2</sup>	R <sub>θJA</sub>	100	°C/W
Thermal Resistance, Junction to Mount <sup>3</sup>	R <sub>θJM</sub>	20.8	°C/W
Storage Temperature Range	T <sub>STG</sub>	- 55 to +150	°C
Operating Junction and Temperature Range	T <sub>J</sub>	- 55 to +150	°C

Notes:

1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub>=25 °C per Fig. 2.

2. Mounted on minimum recommended pad layout

3. Mounted on infinite heat sink.

## Electrical Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

Part Number (Uni)	Marking Code	Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Max Reverse Leakage Current	Max. Clamp Voltage	Peak Pulse Current
			V <sub>BR</sub> @ I <sub>T</sub>					
	UNI	V <sub>WM</sub>	Min	Max	I <sub>T</sub>	I <sub>D</sub> @ V <sub>WM</sub>	V <sub>C</sub> @I <sub>PPM</sub>	I <sub>PPM</sub>
	V	V	V	mA	μA	V	A	
5.0SMCJ11A	JDZ	11	12.2	13.5	10	800	18.2	274.7
5.0SMCJ12A	JEE	12	13.3	14.7	10	800	19.9	252
5.0SMCJ13A	JEG	13	14.4	15.9	10	500	21.5	233
5.0SMCJ14A	JEK	14	15.6	17.2	10	200	23.2	216
5.0SMCJ15A	JEM	15	16.7	18.5	1	100	24.4	205
5.0SMCJ16A	JEP	16	17.8	19.7	1	50	26	193
5.0SMCJ17A	JER	17	18.9	20.9	1	20	27.6	181
5.0SMCJ18A	JET	18	20	22.1	1	10	29.2	172
5.0SMCJ20A	JEV	20	22.2	24.5	1	5	32.4	155
5.0SMCJ22A	JEX	22	24.4	26.9	1	5	35.5	141
5.0SMCJ24A	JEZ	24	26.7	29.5	1	5	38.9	129
5.0SMCJ26A	JFE	26	28.9	31.9	1	5	42.1	119
5.0SMCJ28A	JFG	28	31.1	34.4	1	5	45.4	110
5.0SMCJ30A	JFK	30	33.3	36.8	1	5	48.4	103
5.0SMCJ33A	JFM	33	36.7	40.6	1	5	53.3	93.9
5.0SMCJ36A	JFP	36	40	44.2	1	5	58.1	86.1
5.0SMCJ40A	JFR	40	44.4	49.1	1	5	64.5	77.6
5.0SMCJ43A	JFT	43	47.8	52.8	1	5	69.4	72.1
5.0SMCJ45A	JFV	45	50	55.3	1	5	72.7	68.8
5.0SMCJ48A	JFX	48	53.3	58.9	1	5	77.4	64.6
5.0SMCJ51A	JFZ	51	56.7	62.7	1	5	82.4	60.7
5.0SMCJ54A	JGE	54	60	66.3	1	5	87.1	57.4
5.0SMCJ58A	JGG	58	64.4	71.2	1	5	93.6	53.5
5.0SMCJ60A	JGK	60	66.7	73.7	1	5	96.8	51.7
5.0SMCJ64A	JGM	64	71.1	78.6	1	5	103	48.6
5.0SMCJ70A	JGP	70	77.8	86	1	5	113	44.3
5.0SMCJ75A	JGR	75	83.3	92.1	1	5	121	41.3
5.0SMCJ78A	JGT	78	86.7	95.8	1	5	126	39.7
5.0SMCJ85A	JGV	85	94.4	104	1	5	137	36.5
5.0SMCJ90A	JGX	90	100	111	1	5	146	34.3
5.0SMCJ100A	JGZ	100	111	123	1	5	162	30.9
5.0SMCJ110A	JHE	110	122	135	1	5	177	28.3
5.0SMCJ120A	JHG	120	133	147	1	5	193	25.9
5.0SMCJ130A	JHK	130	144	159	1	5	209	23.9
5.0SMCJ140A	JHB	140	156	171	1	5	226	22.2
5.0SMCJ150A	JHM	150	167	185	1	5	243	20.6
5.0SMCJ160A	JHP	160	178	197	1	5	259	19.3
5.0SMCJ170A	JHR	170	189	209	1	5	275	18.2

# 5.0SMCJx Series

Uni-Directional Transient Voltage Suppressors  
 Peak Pulse Power 5000W Stand-off Voltage 11V to 170V

## Ratings and Characteristic Curves (T<sub>A</sub> = 25 °C unless otherwise noted)

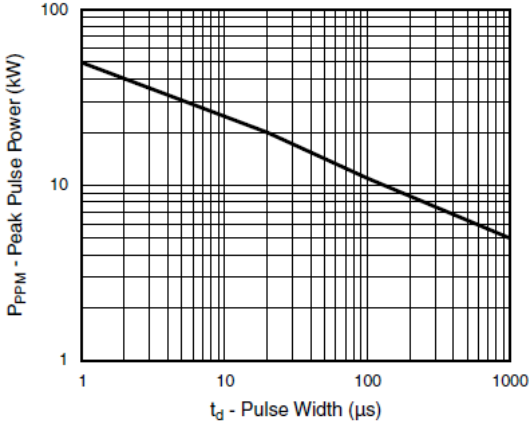


Figure 1. Peak Pulse Power Rating Curve

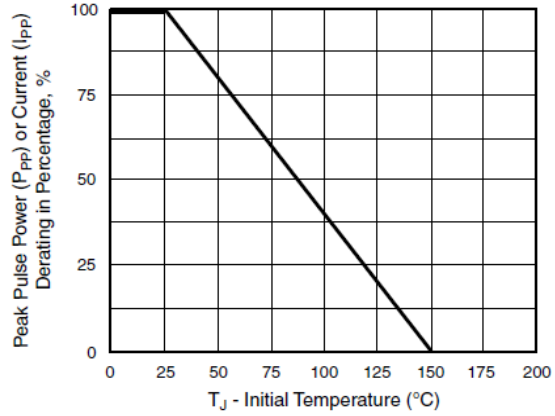


Figure 2. Pulse Power or Current Vs. Initial Junction Temperature

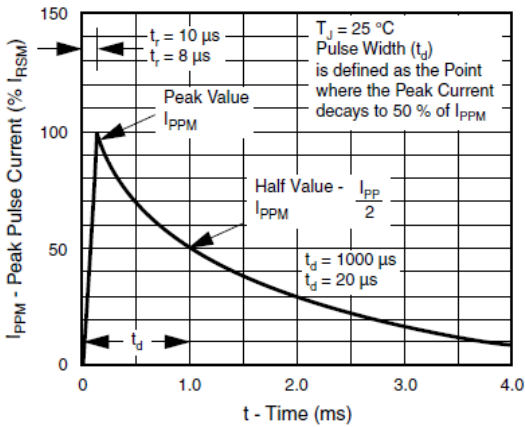


Figure 3. Pulse Waveform

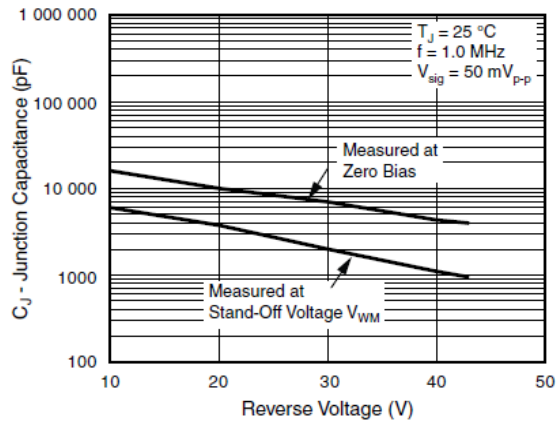
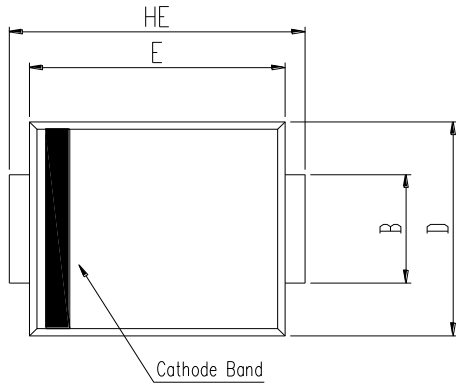


Figure 4 Typical Junction Capacitance

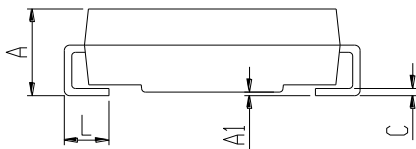
# 5.0SMCJx Series

Uni-Directional Transient Voltage Suppressors  
 Peak Pulse Power 5000W Stand-off Voltage 11V to 170V

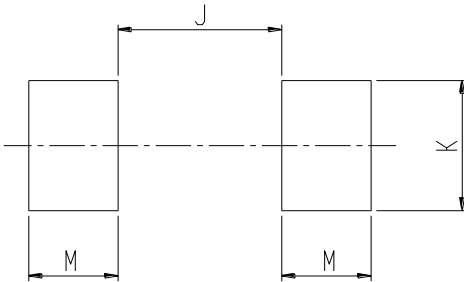
## Package Outline Dimensions DO-214AB(SMC)



DIM	SMC (DO-214AB)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.00	2.62	0.079	0.103
A1	0.00	0.20	0.000	0.008
B	2.92	3.07	0.115	0.121
C	0.15	0.31	0.006	0.012
D	5.59	6.22	0.220	0.245
E	6.60	7.11	0.260	0.280
HE	7.75	8.13	0.305	0.320
L	0.76	1.52	0.030	0.060



## Recommended Pad Layout



DIM	Recommended Pad Layout (Reference ONLY)			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	-	4.60	-	0.181
K	3.20	-	0.126	-
M	2.00	-	0.079	-