

# SMDJ series

## SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR

Reverse Standoff Voltage: 5.0 to 170 V

Peak Pulse Power: 3000 W

### General information

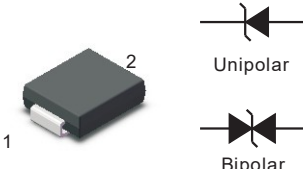
The SMDJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Features

- ◆ For surface mounted applications to optimize board space
- ◆ Low profile package
- ◆ Built-in strain relief
- ◆ Glass passivated chip junction
- ◆ 3000W peak pulse power capability at 10/1000 $\mu$ s waveform, repetition rate (duty cycles):0.01%
- ◆ Excellent clamping capability
- ◆ Low incremental surge resistance
- ◆ Matte tin lead-free plated

### PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode



1 2

Unipolar

Bipolar

Simplified outline SMC and symbol

### MECHANICAL DATA

- ◆ Case: SMC
- ◆ Terminals: Solderable per MIL-STD-750, Method 2026
- ◆ Approx. Weight: 0.22g (0.0077oz)

### Maximum Ratings and Thermal Characteristics(T<sub>A</sub>=25°C)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10/1000 $\mu$ s waveform(Fig.1)(Note 1),(Note 2)	PPPM	3000	W
Power Dissipation on infinite heat sink at T <sub>A</sub> =50°C	PM(AV)	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave(Note3)	IFSM	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V <sub>F</sub>	3.5	V
Operating Junction and Storage Temperature Range	T <sub>j</sub> T <sub>STG</sub>	-65 to 150	°C
Typical Thermal Resistance Junction to Lead	RUJL	15	°C/W
Typical Thermal Resistance Junction to Ambient	RUJA	75	°C/W

### NOTES:

1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>a</sub> =25°C per Fig. 2.
2. Mounted on copper pad area of 0.31\*0.31(8.0\*8.0mm)to each terminal
3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

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## Characteristics at Ta = 25°C

Type		Marking		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Max Clamping Voltage	Peak Pulse Current	Maximum Reverse Leakage
				V <sub>RMW</sub>	V <sub>BR</sub> @ I <sub>T</sub>					
UNI	BI	UNI	BI	V	Min(V)	Max(V)	mA	V	A	μA
SMDJ5.0A	SMDJ5.0CA	RDE	DDE	5	6.4	7	10	9.2	326.1	800
SMDJ6.0A	SMDJ6.0CA	RDG	DDG	6	6.67	7.37	10	10.3	291.3	800
SMDJ6.5A	SMDJ6.5CA	RDK	DDK	6.5	7.22	7.98	10	11.2	267.9	500
SMDJ7.0A	SMDJ7.0CA	PDM	DDM	7	7.78	8.6	10	12	250	200
SMDJ7.5A	SMDJ7.5CA	PDP	DDP	7.5	8.33	9.21	1	12.9	232.6	100
SMDJ8.0A	SMDJ8.0CA	PDR	DDR	8	8.89	9.83	1	13.6	220.6	50
SMDJ8.5A	SMDJ8.5CA	PDT	DDT	8.5	9.44	10.4	1	14.4	208.3	20
SMDJ9.0A	SMDJ9.0CA	PDV	DDV	9	10	11.1	1	15.4	194.8	10
SMDJ10A	SMDJ10CA	PDX	DDX	10	11.1	12.3	1	17	176.5	5
SMDJ11A	SMDJ11CA	PDZ	DDZ	11	12.2	13.5	1	18.2	164.8	2
SMDJ12A	SMDJ12CA	PEE	DEE	12	13.3	14.7	1	19.9	150.8	2
SMDJ13A	SMDJ13CA	PEG	DEG	13	14.4	15.9	1	21.5	139.5	2
SMDJ14A	SMDJ14CA	PEK	DEK	14	15.6	17.2	1	23.2	129.3	2
SMDJ15A	SMDJ15CA	PEM	DEM	15	16.7	18.5	1	24.4	123	2
SMDJ16A	SMDJ16CA	PEP	DEP	16	17.8	19.7	1	26	115.4	2
SMDJ17A	SMDJ17CA	PER	DER	17	18.9	20.9	1	27.6	108.7	2
SMDJ18A	SMDJ18CA	PET	DET	18	20	22.1	1	29.2	102.7	2
SMDJ20A	SMDJ20CA	PEV	DEV	20	22.2	24.5	1	32.4	92.6	2
SMDJ22A	SMDJ22CA	PEX	DEX	22	24.4	26.9	1	35.5	84.5	2
SMDJ24A	SMDJ24CA	PEZ	DEZ	24	26.7	29.5	1	38.9	77.1	2
SMDJ26A	SMDJ26CA	PFE	DFE	26	28.9	31.9	1	42.1	71.3	2
SMDJ28A	SMDJ28CA	PFG	DFG	28	31.1	34.4	1	45.4	66.1	2
SMDJ30A	SMDJ30CA	PFK	DFK	30	33.3	36.8	1	48.4	62	2
SMDJ33A	SMDJ33CA	PFM	DFM	33	36.7	40.6	1	53.3	56.3	2
SMDJ36A	SMDJ36CA	PFP	DFP	36	40	44.2	1	58.1	51.6	2
SMDJ40A	SMDJ40CA	PFR	DFR	40	44.4	49.1	1	64.5	46.5	2
SMDJ43A	SMDJ43CA	PFT	DFT	43	47.8	52.8	1	69.4	43.2	2
SMDJ45A	SMDJ45CA	PFV	DFV	45	50	55.3	1	72.7	41.3	2
SMDJ48A	SMDJ48CA	PFX	DFX	48	53.3	58.9	1	77.4	38.8	2
SMDJ51A	SMDJ51CA	PFZ	DFZ	51	56.7	62.7	1	82.4	36.4	2
SMDJ54A	SMDJ54CA	PGE	DGE	54	60	66.3	1	87.1	34.4	2
SMDJ58A	SMDJ58CA	PGG	DGG	58	64.4	71.2	1	93.6	32.1	2
SMDJ60A	SMDJ60CA	PGK	DGK	60	66.7	73.7	1	96.8	31	2
SMDJ64A	SMDJ64CA	PGM	DGM	64	71.1	78.6	1	103	29.1	2
SMDJ70A	SMDJ70CA	PGP	DGP	70	77.8	86	1	113	26.5	2
SMDJ75A	SMDJ75CA	PGR	DGR	75	83.3	92.1	1	121	24.8	2
SMDJ78A	SMDJ78CA	PGT	DGT	78	86.7	95.8	1	126	23.8	2
SMDJ85A	SMDJ85CA	PGV	DGV	85	94.4	104	1	137	21.9	2
SMDJ90A	SMDJ90CA	PGX	DGX	90	100	111	1	146	20.5	2
SMDJ100A	SMDJ100CA	PGZ	DGZ	100	111	123	1	162	18.5	2
SMDJ110A	SMDJ110CA	PHE	DHE	110	122	135	1	177	16.9	2
SMDJ120A	SMDJ120CA	PHG	DHG	120	133	147	1	193	15.5	2
SMDJ130A	SMDJ130CA	PHK	DHK	130	144	159	1	209	14.4	2
SMDJ150A	SMDJ150CA	PHM	DHM	150	167	185	1	243	12.3	2
SMDJ160A	SMDJ160CA	PHP	DHP	160	178	197	1	259	11.6	2
SMDJ170A	SMDJ170CA	PHR	DHR	170	189	209	1	275	10.9	2

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## Typical Characteristics Curves

Fig.1 Peak Pulse Power Rating Curve

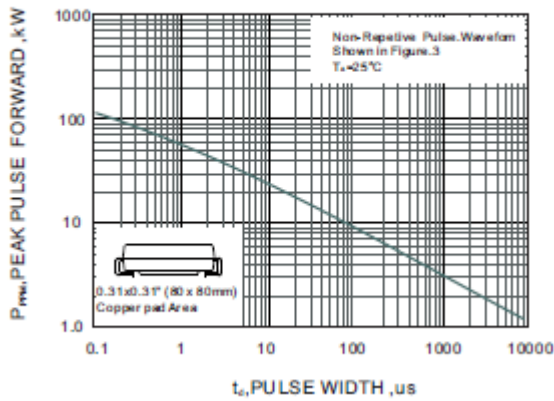


Fig.2 Forward Current Derating Curve

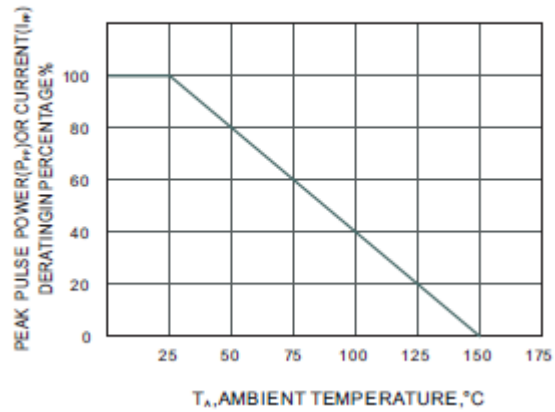


Fig.3 Pulse Waveform

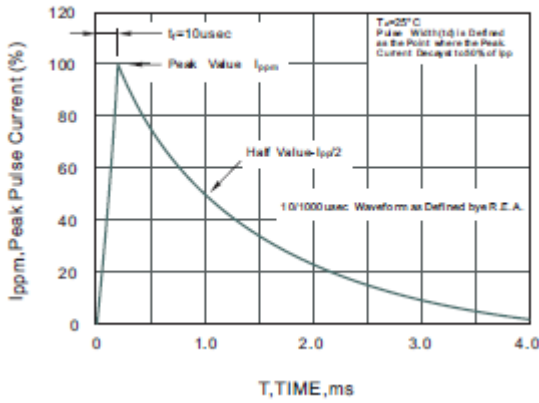


Fig.4 Typical Junction Capacitance

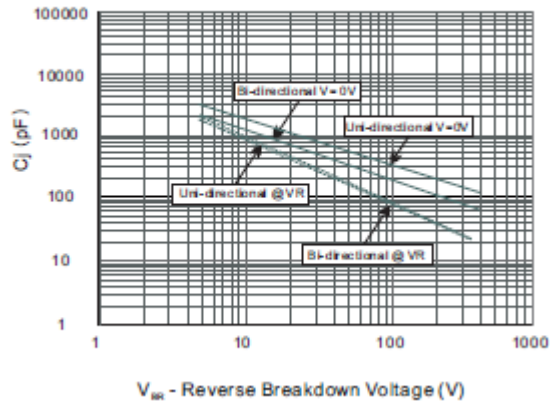


Fig.5 Steady State Power Derating Curve

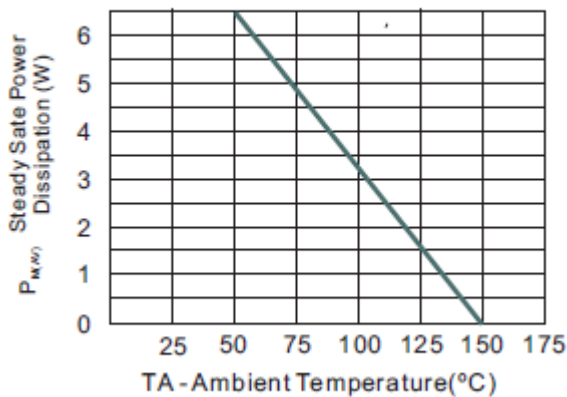
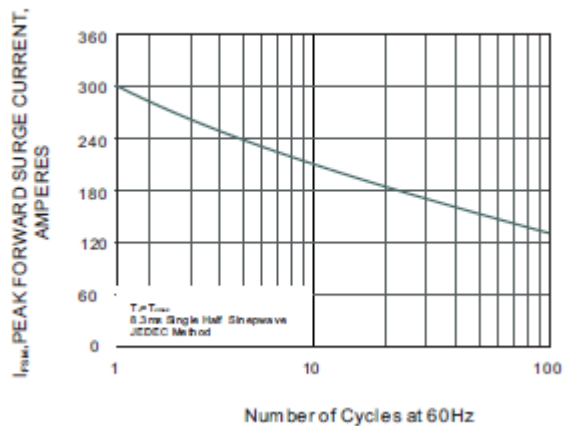


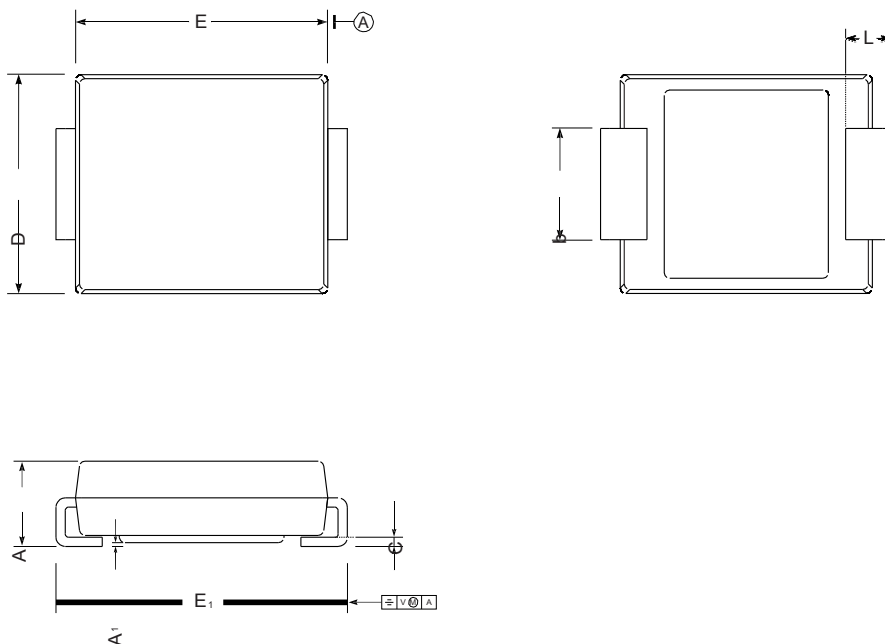
Fig.6 Maximum Non-Repetitive Peak Forward Surge Current



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## Package Outline

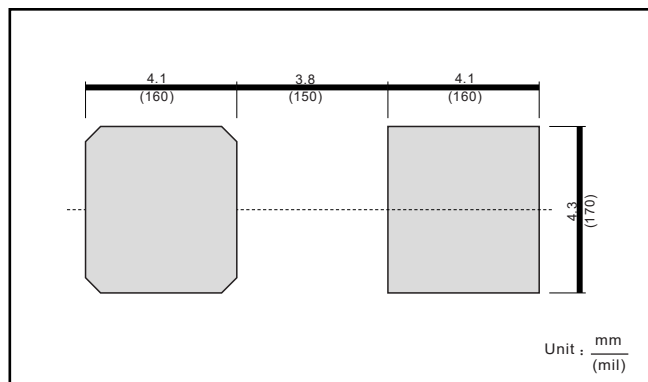
SMC



SMC mechanical data

UNIT		A	E	D	E <sub>1</sub>	A <sub>1</sub>	C	L	b
mm	max	2.62	7.0	6.2	8.0	0.21	0.31	1.6	3.25
	min	2.00	6.5	5.6	7.6	0.05	0.15	0.9	2.75
mil	max	103	276	244	315	8.3	12	63	128
	min	79	256	220	299	2.0	5.9	35	108

### The recommended mounting pad size



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