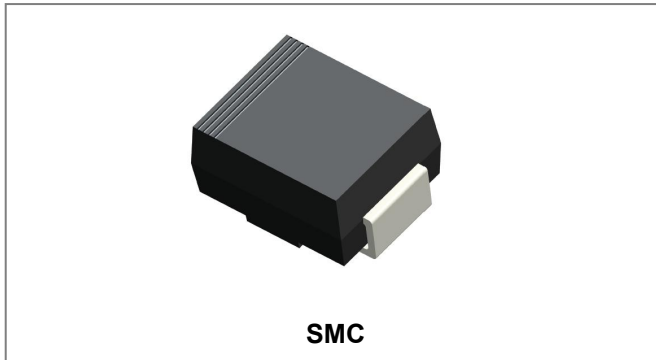




## SMDJ SERIES SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR



### Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-0
- This is a Pb – Free Device
- All SMC Parts are Traceable to the Wafer Lot
- Additional testing can be offered upon request

### Circuit Diagram



**Unipolar**



**Bipolar**

### Mechanical Data

- Case: SMC Low Profile Molded Plastic
- Terminals: Solder Plated , Solderable per MIL-STD 750, Method 2026
- Polarity: Color band denoted positive end (cathode) except Bidirectional
- Weight:0.21 grams(approx.)

### Maximum Ratings and Thermal Characteristics@T<sub>A</sub>=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10x1000µs Waveform(Fig.2)(Note 1), (Note 2)	P <sub>PPM</sub>	3000	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 3)	I <sub>FSM</sub>	300	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional Only	V <sub>F</sub>	3.5	V
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	15	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	75	°C/W
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 T<sub>A</sub> = 25°C per Fig. 2.
  2. Mounted on 8.0x8.0mm Copper Pads to each terminal.
  3. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4pulses per minute maximum.

**Electrical Characteristics@T<sub>A</sub>=25°C unless otherwise specified**

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT(MA)	MAXIMUM CLAMPING VOLTAGE @IPP VC(V)	PEAK PULSE CURRENT IPP(A)	REVERSE LEAKAGE @VRWM IR(μA)
		UNI	BI							
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

Technical Data

Data Sheet N1696, Rev. A

For parts without A, the VBR is + 10%, and VC is 5% higher than A parts.  
For bidirectional type having VR of 10 volts and less, the IR limit is double.



**Ratings and Characteristics Curves**

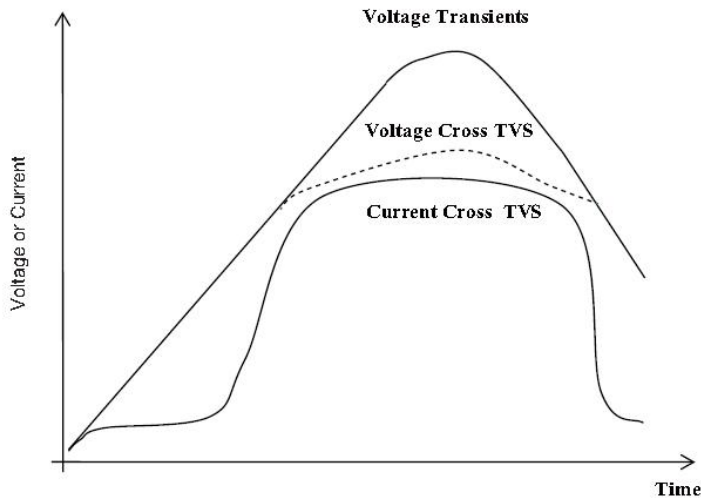


Fig.1 Peak Pulse Power Rating

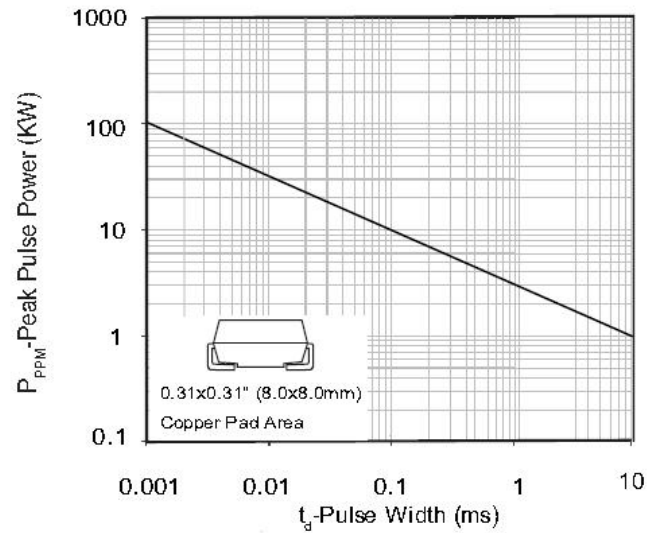


Fig.2 TVS Transients Clamping Waveform

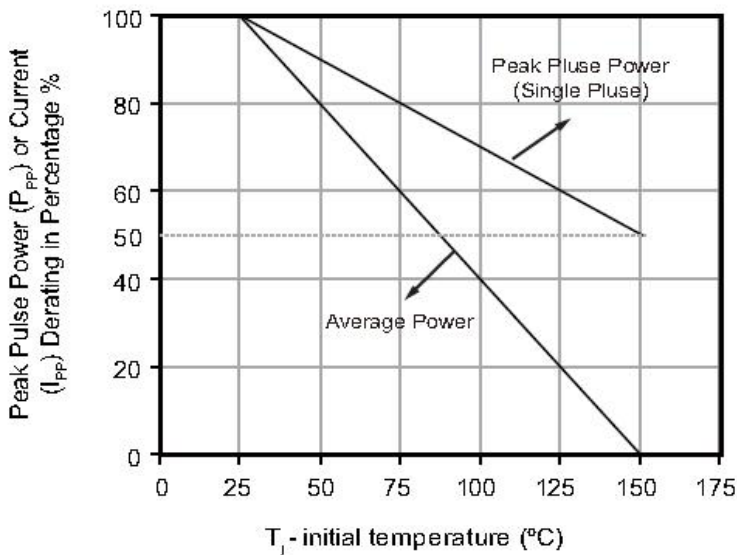


Fig.3 Peak Pulse Power or Current Derating Curve

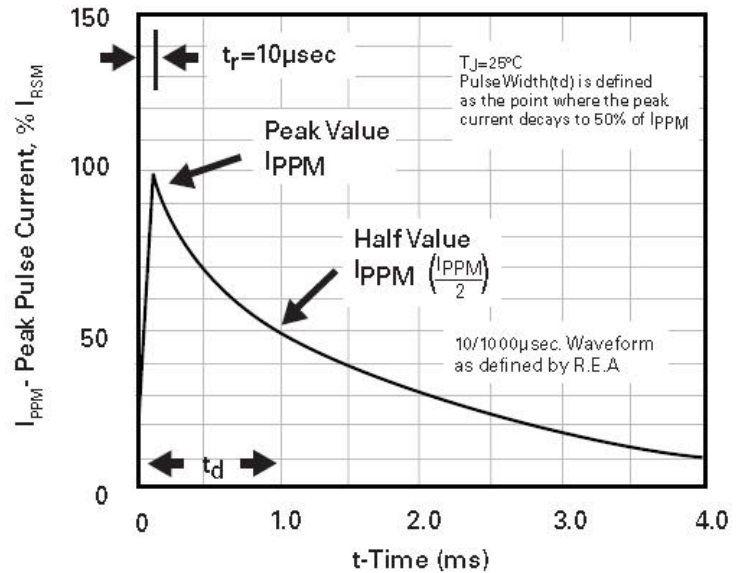
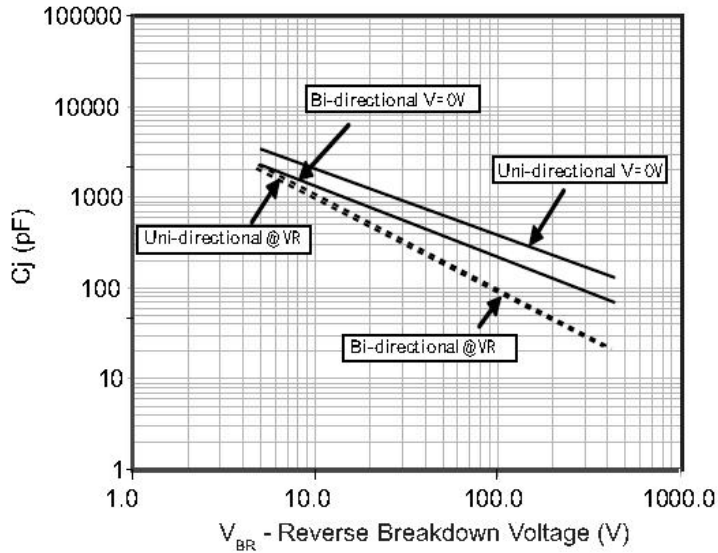
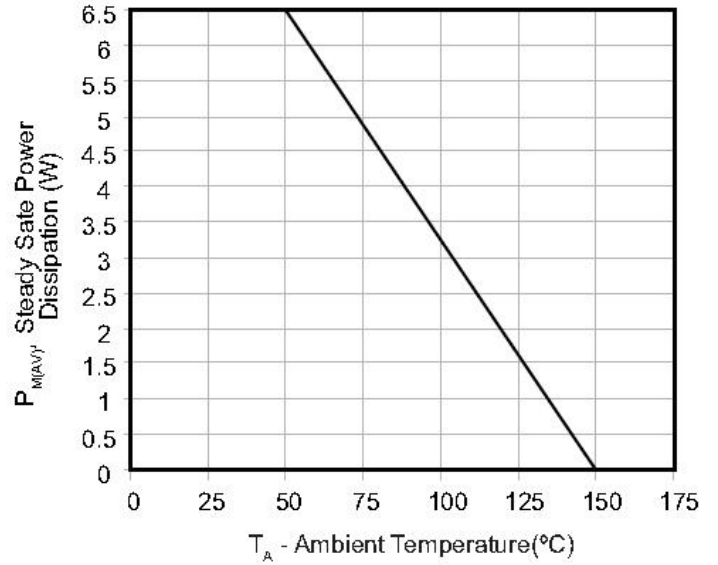


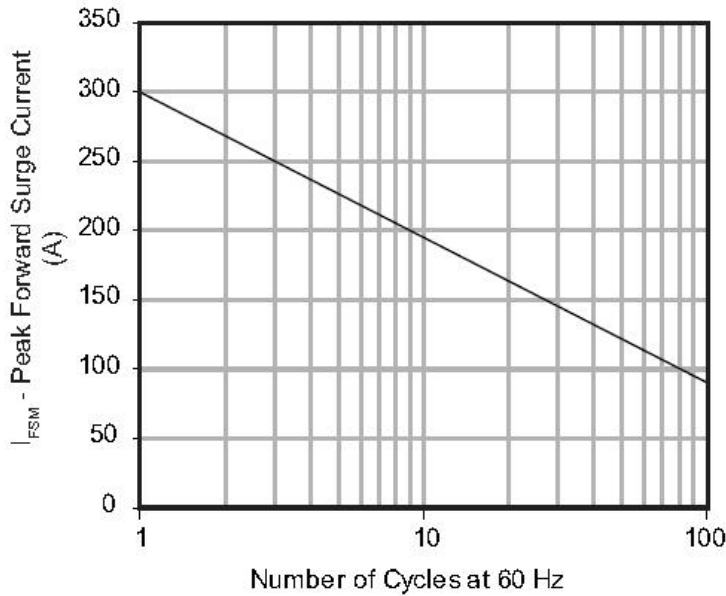
Fig. 4 Pulse Waveform



**Fig.5 Typical Junction Capacitance**

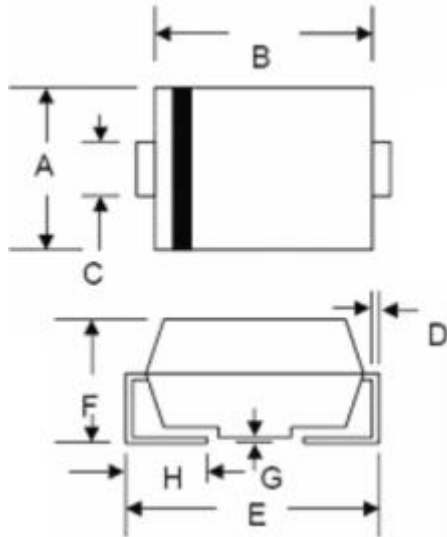


**Fig.6 Steady State Power Derating Curve**



**Fig.7 Maximum Non-Repetitive Peak Forward Surge Current Uni-Directional only**

**Mechanical Dimensions SMC**



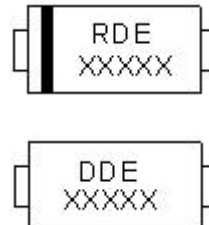
Dim.	SMC/DO-214AB			
	Min.	Max.	Min.	Max.
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.51	0.006	0.02
E	7.75	8.13	0.305	0.320
F	2.00	2.95	0.079	0.116
G	-	0.203	-	0.008
H	0.76	1.52	0.030	0.060
In Millimeters			In inches	

**Ordering Information**

Device	Package	Shipping
SMDJ SERIES	SMC (Pb-Free)	3000pcs / reel
SMDJ SERIES TR	SMC (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**

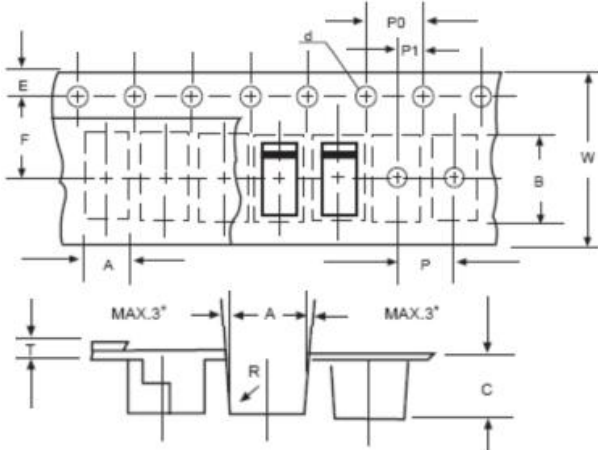


Where XXXXX is YYWWL

RDE/DDE = Marking code  
YY = Year  
WW = Week  
L = Lot Number

Cautions: Molding resin  
Epoxy resin UL:94V-0

**Carrier Tape Specification SMC**



SYMBOL	Millimeters	
	Min.	Max.
A	5.90	6.10
B	8.20	8.40
C	2.40	2.60
d	1.40	1.60
E	1.40	1.60
F	7.60	7.70
P	7.90	8.10
P0	3.90	4.10
P1	3.90	4.10
T	-	0.600
W	15.80	16.20

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