

**SMCG Plastic-Encapsulate Diodes****SMDJ SERIES** Transient Voltage Suppressor Diodes**Features**

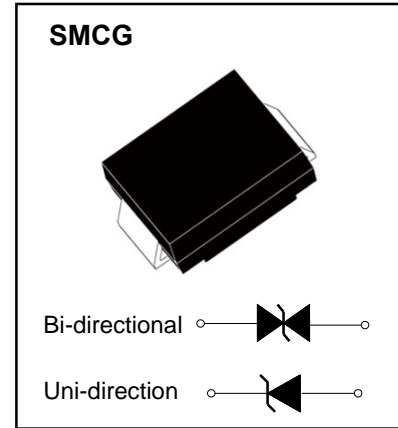
- $P_{PP}$  3000W
- $V_{RWM}$  5.0V- 440V
- Glass passivated chip

**Applications**

- Clamping Voltage

**Marking**

- SMDJXXCA/XXA  
XX : From 5.0 To 440

**Limiting Values (Absolute Maximum Rating)**

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	$P_{PPM}$	W	with a 10/1000us waveform	3000
Peak pulse current (1)	$I_{PPM}$	A	with a 10/1000us waveform	See Next Table
Peak forward surge current(2)	$I_{FSM}$	A	8.3 ms single half sine-wave unidirectional only	300
Operating junction and storage temperature range	$T_J, T_{STG}$	°C		-55 to +150

**Notes:**

- (1) Non-repetitive current pulse, per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig.2.
- (2) Mounted on 0.2 x 0.2" (5.0 x 5.0 mm) copper pads to each terminal
- (3)  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 5.0\text{V}$  for devices of  $V_{BR} > 201\text{V}$

## Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 5)		Test Current $I_T$ (mA)	Max. Reverse Leakage @ $V_{RWM}$ (Note 6) $I_R$ ( $\mu\text{A}$ )	Max. Clamping Voltage @ $I_{pp}$ $V_C$ (V)	Max. Peak Pulse Current $I_{pp}$ (A)
		Min (V)	Max (V)				
SMDJ5.0(C)A	5.0	6.40	7.00	10	800	9.2	326.09
SMDJ6.0(C)A	6.0	6.67	7.37	10	800	10.3	291.26
SMDJ6.5(C)A	6.5	7.22	7.98	10	500	11.2	267.86
SMDJ7.0(C)A	7.0	7.78	8.60	10	200	12.0	250.00
SMDJ7.5(C)A	7.5	8.33	9.21	1.0	100	12.9	232.56
SMDJ8.0(C)A	8.0	8.89	9.83	1.0	50	13.6	220.59
SMDJ8.5(C)A	8.5	9.44	10.40	1.0	20	14.4	208.33
SMDJ9.0(C)A	9.0	10.00	11.10	1.0	10	15.4	194.81
SMDJ10(C)A	10.0	11.10	12.30	1.0	5.0	17.0	176.47
SMDJ11(C)A	11.0	12.20	13.50	1.0	5.0	18.2	164.84
SMDJ12(C)A	12.0	13.30	14.70	1.0	2.0	19.9	150.75
SMDJ13(C)A	13.0	14.40	15.90	1.0	2.0	21.5	139.53
SMDJ14(C)A	14.0	15.60	17.20	1.0	2.0	23.2	129.31
SMDJ15(C)A	15.0	16.70	18.50	1.0	1.0	24.4	122.95
SMDJ16(C)A	16.0	17.80	19.70	1.0	1.0	26.0	115.38
SMDJ17(C)A	17.0	18.90	20.90	1.0	1.0	27.6	108.70
SMDJ18(C)A	18.0	20.00	22.10	1.0	1.0	29.2	102.74
SMDJ20(C)A	20.0	22.20	24.50	1.0	1.0	32.4	92.59
SMDJ22(C)A	22.0	24.40	26.90	1.0	1.0	35.5	84.51
SMDJ24(C)A	24.0	26.70	29.50	1.0	1.0	38.9	77.12
SMDJ26(C)A	26.0	28.90	31.90	1.0	1.0	42.1	71.26
SMDJ28(C)A	28.0	31.10	34.40	1.0	1.0	45.4	66.08
SMDJ30(C)A	30.0	33.30	36.80	1.0	1.0	48.4	61.98
SMDJ33(C)A	33.0	36.70	40.60	1.0	1.0	53.3	56.29
SMDJ36(C)A	36.0	40.00	44.20	1.0	1.0	58.1	51.64
SMDJ40(C)A	40.0	44.40	49.10	1.0	1.0	64.5	46.51
SMDJ43(C)A	43.0	47.80	52.80	1.0	1.0	69.4	43.23
SMDJ45(C)A	45.0	50.00	55.30	1.0	1.0	72.7	41.27
SMDJ48(C)A	48.0	53.30	58.90	1.0	1.0	77.4	38.76
SMDJ51(C)A	51.0	56.70	62.70	1.0	1.0	82.4	36.41
SMDJ54(C)A	54.0	60.00	66.30	1.0	1.0	87.1	34.44
SMDJ58(C)A	58.0	64.40	71.20	1.0	1.0	93.6	32.05
SMDJ60(C)A	60.0	66.70	73.70	1.0	1.0	96.8	30.99
SMDJ64(C)A	64.0	71.10	78.60	1.0	1.0	103.0	29.13
SMDJ70(C)A	70.0	77.80	86.00	1.0	1.0	113.0	26.55
SMDJ75(C)A	75.0	83.30	92.10	1.0	1.0	121.0	24.79

## Electrical Characteristics ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage $V_{RWM}$ (V)	Breakdown Voltage $V_{BR}$ @ $I_T$ (Note 5)		Test Current $I_T$ (mA)	Max. Reverse Leakage @ $V_{RWM}$ (Note 6) $I_R$ ( $\mu\text{A}$ )	Max. Clamping Voltage @ $I_{pp}$ $V_C$ (V)	Max. Peak Pulse Current $I_{pp}$ (A)
		Min (V)	Max (V)				
SMDJ78(C)A	78.0	86.70	95.80	1.0	1.0	126.0	23.81
SMDJ85(C)A	85.0	94.40	104.00	1.0	1.0	137.0	21.90
SMDJ90(C)A	90.0	100.0	111.00	1.0	1.0	146.0	20.55
SMDJ100(C)A	100.0	111.0	123.00	1.0	1.0	162.0	18.52
SMDJ110(C)A	110.0	122.0	135.00	1.0	1.0	177.0	16.95
SMDJ120(C)A	120.0	133.0	147.00	1.0	1.0	193.0	15.54
SMDJ130(C)A	130.0	144.0	159.00	1.0	1.0	209.0	14.35
SMDJ150(C)A	150.0	167.0	185.00	1.0	1.0	243.0	12.35
SMDJ160(C)A	160.0	178.0	197.00	1.0	1.0	259.0	11.58
SMDJ170(C)A	170.0	189.0	209.00	1.0	1.0	275.0	10.91
SMDJ180(C)A	180.0	200.0	220.00	1.0	1.0	291.6	10.29
SMDJ190(C)A	190.0	211.0	232.00	1.0	1.0	307.8	9.75
SMDJ200(C)A	200.0	224.0	247.00	1.0	1.0	324.0	9.26
SMDJ220(C)A	220.0	246.0	272.00	1.0	1.0	356.0	8.43
SMDJ250(C)A	250.0	279.0	309.00	1.0	1.0	405.0	7.41
SMDJ300(C)A	300.0	335.0	371.00	1.0	1.0	486.0	6.17
SMDJ350(C)A	350.0	391.0	432.00	1.0	1.0	567.0	5.29
SMDJ400(C)A	400.0	447.0	494.00	1.0	1.0	648.0	4.63
SMDJ440(C)A	440.0	492.0	543.00	1.0	1.0	713.0	4.21

- Notes:
4. Suffix C denotes Bi-directional device.
  5.  $V_{BR}$  measured with  $I_T$  current pulse =  $300\mu\text{s}$
  6. For Bi-Directional devices having  $V_{RWM}$  of 10V and under, the  $I_R$  is doubled.

Fig. 1 - Peak Pulse Power Rating Curve

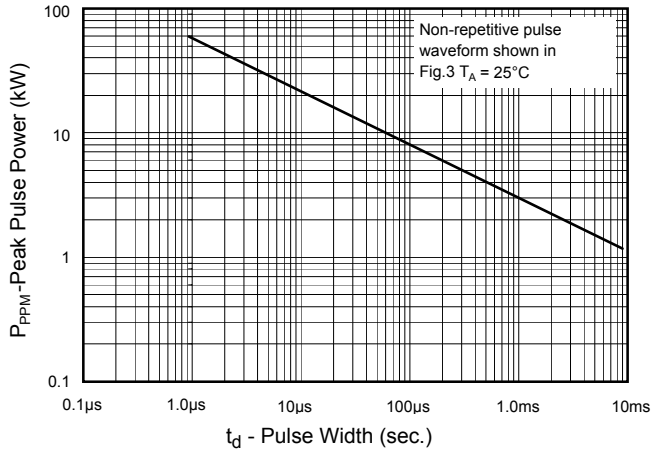


Fig.2 - Pulse Derating Curve

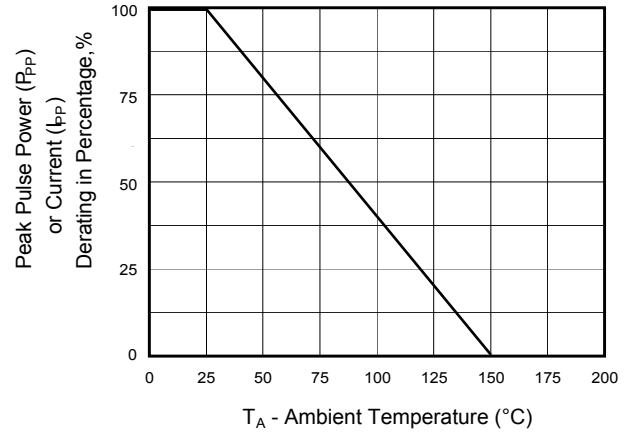


Fig.3 - Pulse Waveform

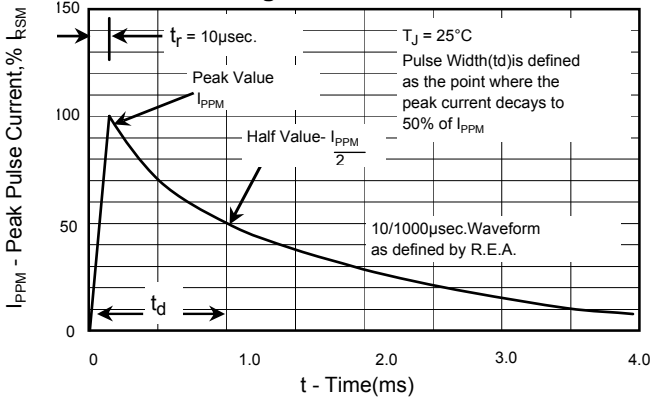


Fig. 4 - Typical Junction Capacitance

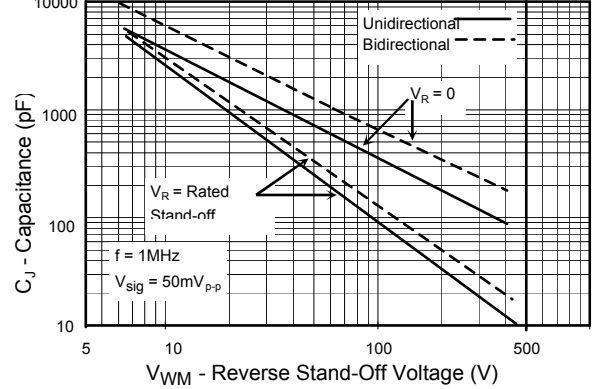


Fig. 5 - Steady State Power Derating Curve

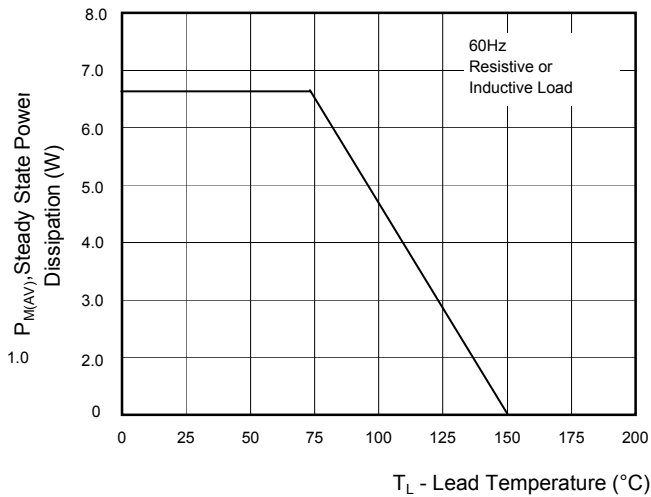
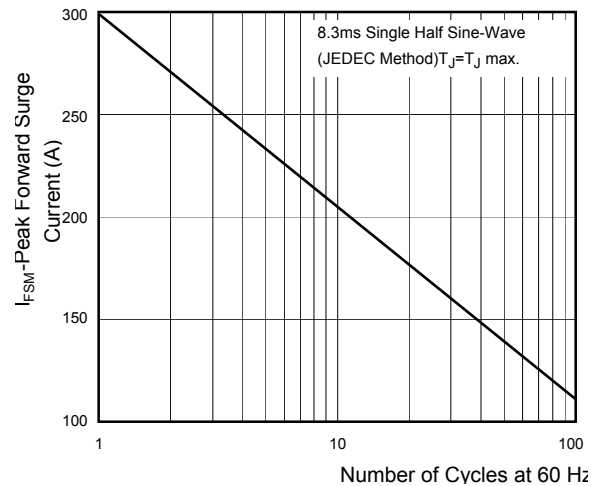
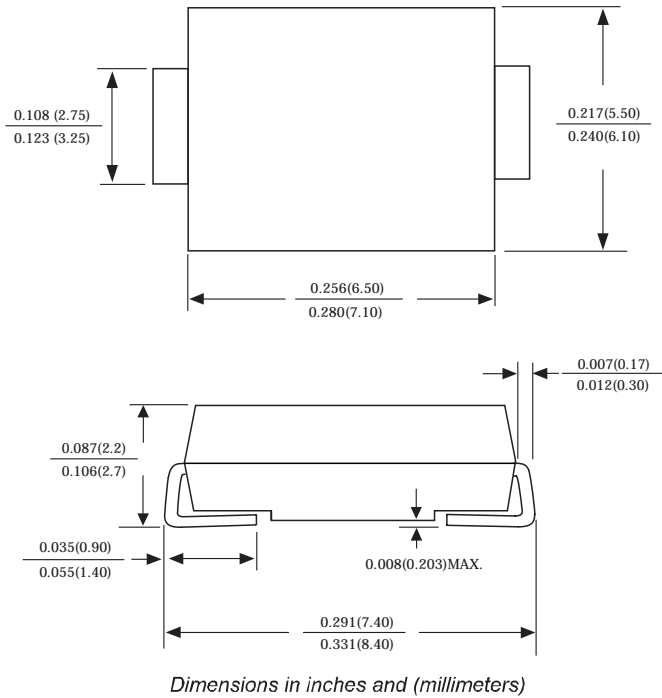


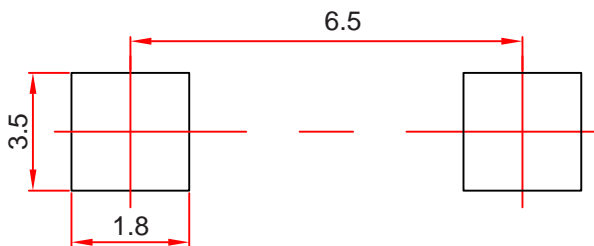
Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



## SMCG Package Outline Dimensions



## SMCG Suggested Pad Layout



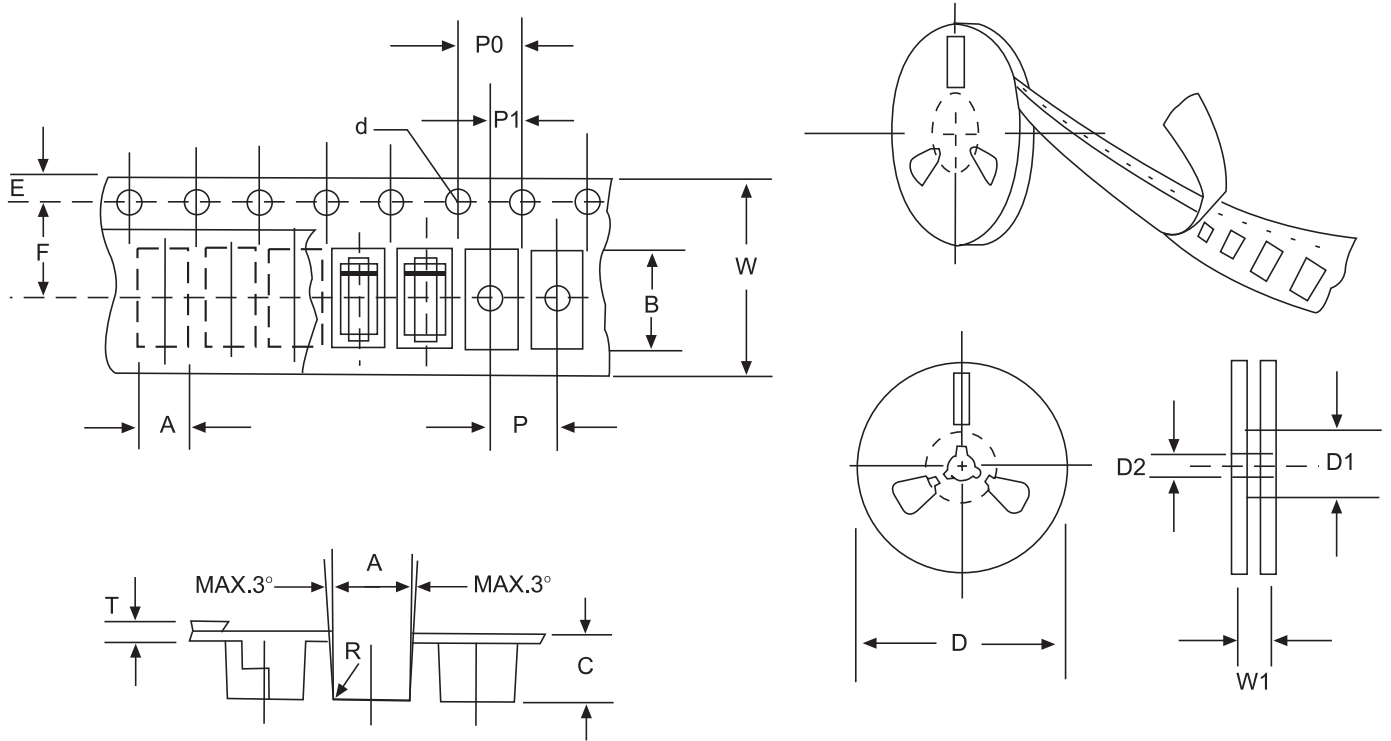
### Note:

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$ mm.
3. The pad layout is for reference purposes only.

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## Reel Taping Specifications For Surface Mount Devices- SMCG



**FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING**

ITEM	SYMBOL	SMCG mm(inch)
Carrier width	A	6.05±0.1(0.238±0.004)
Carrier length	B	8.31±0.1(0.327±0.004)
Carrier depth	C	2.70±0.1(0.106±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	330±2.0(13±0.079)
Reel inner diameter	D1	75 ±1.0 ( 2.95 ±0.039)
Feed hole diameter	D2	13±0.5(0.512±0.020)
Sprocket hole position	E	1.75±0.1(0.069±0.004)
Punch hole position	F	7.65±0.05(0.301±0.002)
Punch hole pitch	P	8.0±0.1(0.315±0.004)
Sprocket hole pitch	P0	4.0±0.1(0.157±0.004)
Embossment center	P1	2.0±0.1(0.079±0.004)
Total tape thickness	T	0.3±0.1(0.012±0.004)
Tape width	W	16.0±0.2(0.630±0.008)
Reel width	W1	24.0±2.0(0.945±0.079)

NOTE: Devices are packed in accordance with EIA standard RS-481-A and specification given above.

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