

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

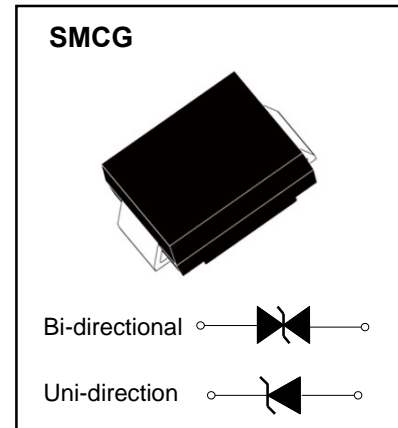
- P_{PP} 3000W
- V_{RWM} 5.0V- 440V
- Glass passivated chip

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 (μA)	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 (μA)	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 μs
 6. For Bi-Directional devices having V_{RWM} of 10V and under, the I_R is doubled.

Typical Characteristics

Fig. 1 - Peak Pulse Power Rating Curve

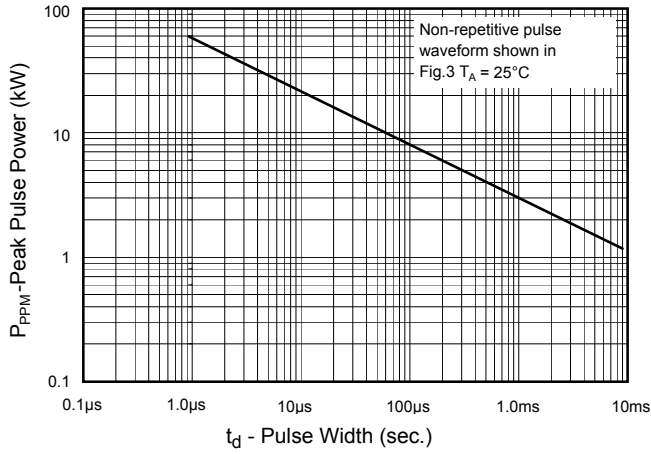


Fig. 2 - Pulse Derating Curve

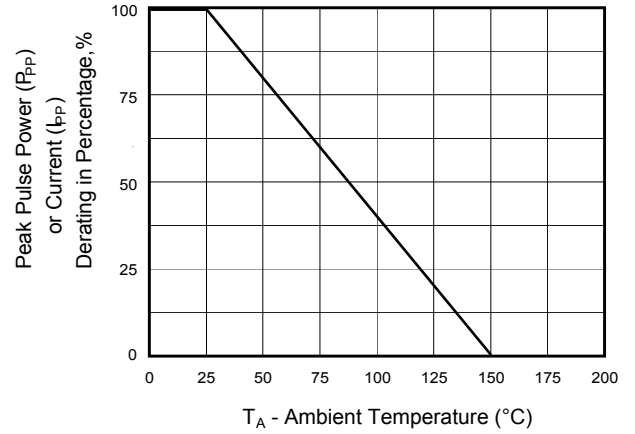


Fig. 3 - Pulse Waveform

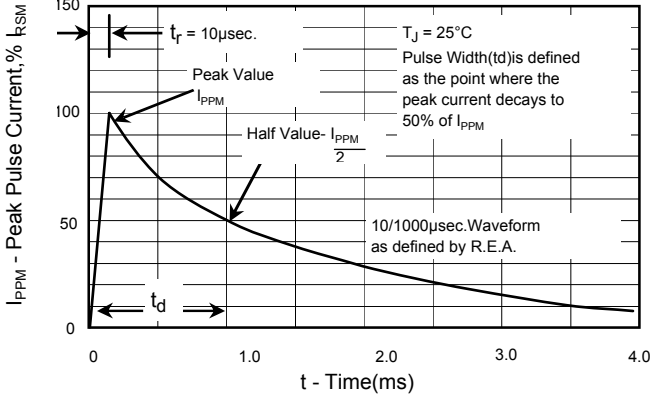


Fig. 4 - Typical Junction Capacitance

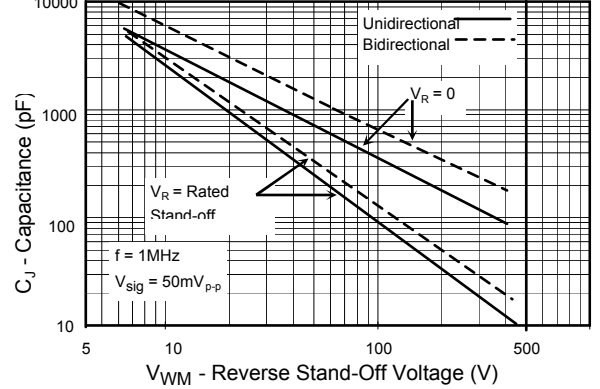


Fig. 5 - Steady State Power Derating Curve

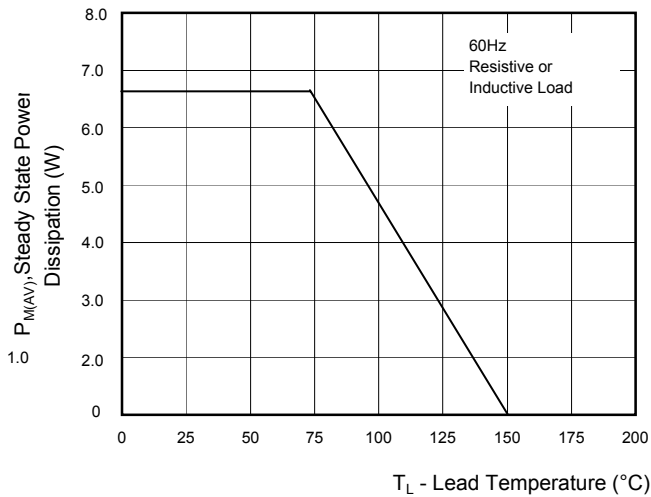
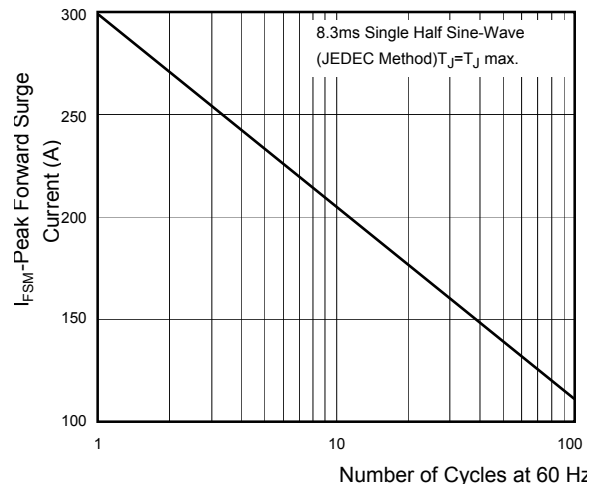
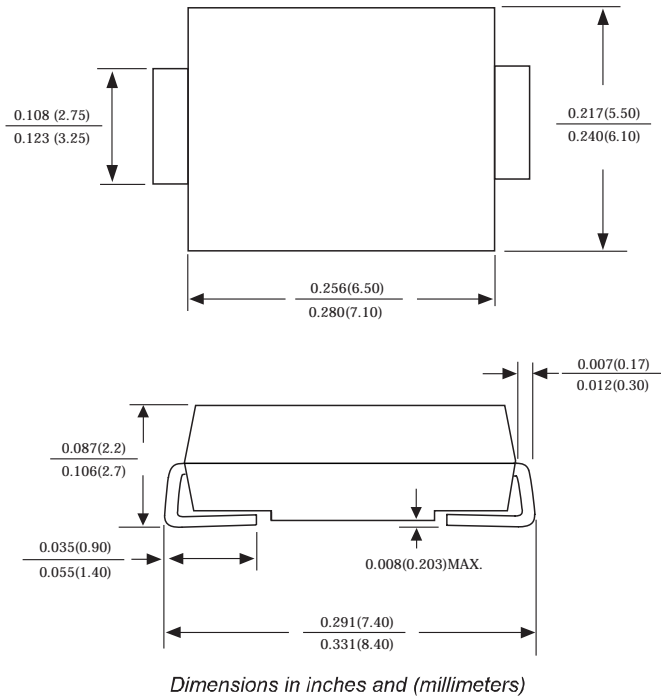


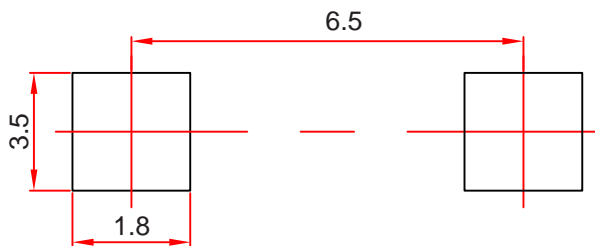
Fig. 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



SMCG Package Outline Dimensions



SMCG Suggested Pad Layout



Note:

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

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Reel Taping Specifications For Surface Mount Devices- SMCG

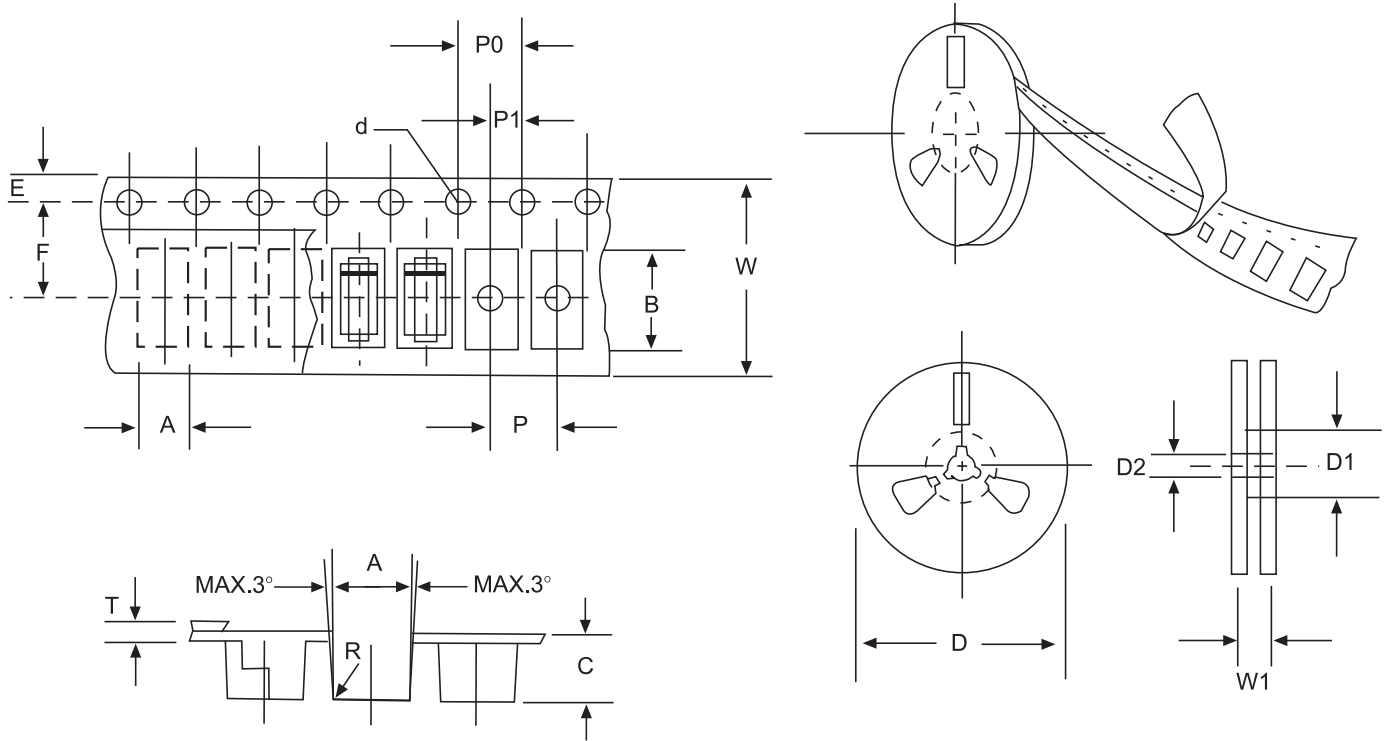


FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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)
Totall 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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