SMCG Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

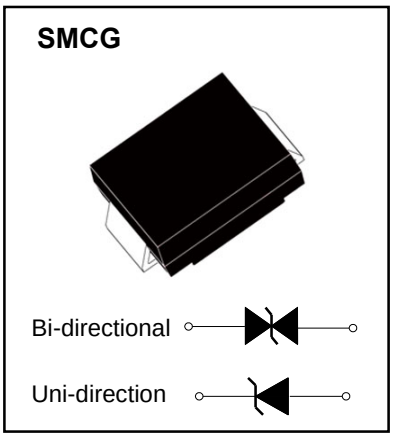
- P_{PP} 3000W
- V_{RWM} 5.0V- 440V
- Glass passivated chip

Applications

- Clamping Voltage

Marking

- SMDJ
  XXCA/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(1)	3000
Peak pulse current	I_{PPM}	A	with a 10/1000us waveform(1)	See Next Table
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only(2)	300
Power dissipation	P_D	W	On infinite heat sink at T_L=70℃	6.5
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics（T_a=25℃ Unless otherwise specified）

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (3)	V_F	V	at 100A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	℃/W	junction to lead	15
	$R_{\theta JA}$	℃/W	junction to ambient	75

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above T_A= 25℃per Fig.2

(2) Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal

(3) VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>201V

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (μA)	V_C (V)	(A)	UNI-	BI-
SMDJ5.0(C)A	5.0	6.40	7.00	10	800	9.2	326.09	RDE	DDE
SMDJ6.0(C)A	6.0	6.67	7.37	10	800	10.3	291.26	RDG	DDG
SMDJ6.5(C)A	6.5	7.22	7.98	10	500	11.2	267.86	RDK	DDK
SMDJ7.0(C)A	7.0	7.78	8.60	10	200	12.0	250.00	PDM	DDM
SMDJ7.5(C)A	7.5	8.33	9.21	1.0	100	12.9	232.56	PDP	DDP
SMDJ8.0(C)A	8.0	8.89	9.83	1.0	50	13.6	220.59	PDR	DDR
SMDJ8.5(C)A	8.5	9.44	10.40	1.0	20	14.4	208.33	PDT	DDT
SMDJ9.0(C)A	9.0	10.00	11.10	1.0	10	15.4	194.81	PDV	DDV
SMDJ10(C)A	10.0	11.10	12.30	1.0	5.0	17.0	176.47	PDX	DDX
SMDJ11(C)A	11.0	12.20	13.50	1.0	5.0	18.2	164.84	PDZ	DDZ
SMDJ12(C)A	12.0	13.30	14.70	1.0	2.0	19.9	150.75	PEE	DEE
SMDJ13(C)A	13.0	14.40	15.90	1.0	2.0	21.5	139.53	PEG	DEG
SMDJ14(C)A	14.0	15.60	17.20	1.0	2.0	23.2	129.31	PEK	DEK
SMDJ15(C)A	15.0	16.70	18.50	1.0	1.0	24.4	122.95	PEM	DEM
SMDJ16(C)A	16.0	17.80	19.70	1.0	1.0	26.0	115.38	PEP	DEP
SMDJ17(C)A	17.0	18.90	20.90	1.0	1.0	27.6	108.70	PER	DER
SMDJ18(C)A	18.0	20.00	22.10	1.0	1.0	29.2	102.74	PET	DET
SMDJ20(C)A	20.0	22.20	24.50	1.0	1.0	32.4	92.59	PEV	DEV
SMDJ22(C)A	22.0	24.40	26.90	1.0	1.0	35.5	84.51	PEX	DEX
SMDJ24(C)A	24.0	26.70	29.50	1.0	1.0	38.9	77.12	PEZ	DEZ
SMDJ26(C)A	26.0	28.90	31.90	1.0	1.0	42.1	71.26	PFE	DFE
SMDJ28(C)A	28.0	31.10	34.40	1.0	1.0	45.4	66.08	PFG	DFG
SMDJ30(C)A	30.0	33.30	36.80	1.0	1.0	48.4	61.98	PFK	DFK
SMDJ33(C)A	33.0	36.70	40.60	1.0	1.0	53.3	56.29	PFM	DFM
SMDJ36(C)A	36.0	40.00	44.20	1.0	1.0	58.1	51.64	PFP	DFP
SMDJ40(C)A	40.0	44.40	49.10	1.0	1.0	64.5	46.51	PFR	DFR
SMDJ43(C)A	43.0	47.80	52.80	1.0	1.0	69.4	43.23	PFT	DFT
SMDJ45(C)A	45.0	50.00	55.30	1.0	1.0	72.7	41.27	PFV	DFV
SMDJ48(C)A	48.0	53.30	58.90	1.0	1.0	77.4	38.76	PFX	DFX
SMDJ51(C)A	51.0	56.70	62.70	1.0	1.0	82.4	36.41	PFZ	DFZ
SMDJ54(C)A	54.0	60.00	66.30	1.0	1.0	87.1	34.44	PGE	DGE
SMDJ58(C)A	58.0	64.40	71.20	1.0	1.0	93.6	32.05	PGG	DGG
SMDJ60(C)A	60.0	66.70	73.70	1.0	1.0	96.8	30.99	PGK	DGK
SMDJ64(C)A	64.0	71.10	78.60	1.0	1.0	103.0	29.13	PGM	DGM
SMDJ70(C)A	70.0	77.80	86.00	1.0	1.0	113.0	26.55	PGP	DGR
SMDJ75(C)A	75.0	83.30	92.10	1.0	1.0	121.0	24.79	PGR	DGR

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Part Number Add C For Bi-Directional (Note 4)	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 5)		Test Current	Max. Reverse Leakage @ V_{RWM} (Note 6)	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current Ipp	Marking Code	
	V_{RWM} (V)	Min (V)	Max (V)	I_T(mA)	I_R (μA)	V_C (V)	(A)	UNI-	BI-
SMDJ78(C)A	78.0	86.70	95.80	1.0	1.0	126.0	23.81	PGT	DGT
SMDJ85(C)A	85.0	94.40	104.00	1.0	1.0	137.0	21.90	PGV	DGV
SMDJ90(C)A	90.0	100.0	111.00	1.0	1.0	146.0	20.55	PGX	DGX
SMDJ100(C)A	100.0	111.0	123.00	1.0	1.0	162.0	18.52	PGZ	DGZ
SMDJ110(C)A	110.0	122.0	135.00	1.0	1.0	177.0	16.95	PHE	DHE
SMDJ120(C)A	120.0	133.0	147.00	1.0	1.0	193.0	15.54	PHG	DHG
SMDJ130(C)A	130.0	144.0	159.00	1.0	1.0	209.0	14.35	PHK	DHK
SMDJ150(C)A	150.0	167.0	185.00	1.0	1.0	243.0	12.35	PHM	DHM
SMDJ160(C)A	160.0	178.0	197.00	1.0	1.0	259.0	11.58	PHP	DHP
SMDJ170(C)A	170.0	189.0	209.00	1.0	1.0	275.0	10.91	PHR	DHR
SMDJ180(C)A	180.0	200.0	220.00	1.0	1.0	291.6	10.29	PHT	DHT
SMDJ190(C)A	190.0	211.0	232.00	1.0	1.0	307.8	9.75	PHV	DHV
SMDJ200(C)A	200.0	224.0	247.00	1.0	1.0	324.0	9.26	PHW	DHW
SMDJ220(C)A	220.0	246.0	272.00	1.0	1.0	356.0	8.43	PHX	DHX
SMDJ250(C)A	250.0	279.0	309.00	1.0	1.0	405.0	7.41	PHZ	DHZ
SMDJ300(C)A	300.0	335.0	371.00	1.0	1.0	486.0	6.17	PJE	DJE
SMDJ350(C)A	350.0	391.0	432.00	1.0	1.0	567.0	5.29	PJG	DJG
SMDJ400(C)A	400.0	447.0	494.00	1.0	1.0	648.0	4.63	PJK	DJK
SMDJ440(C)A	440.0	492.0	543.00	1.0	1.0	713.0	4.21	PJM	DJM

Notes: 4. Suffix C denotes Bi-directional device.
5. V_{BR} measured with I_T current pulse = 300μs
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

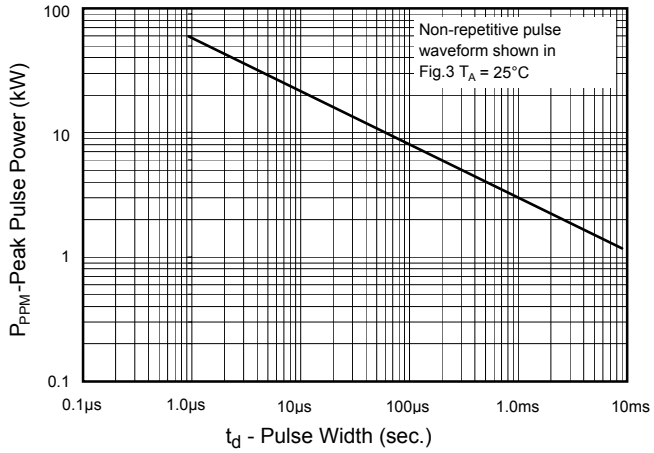


Fig.2 - Pulse Derating Curve

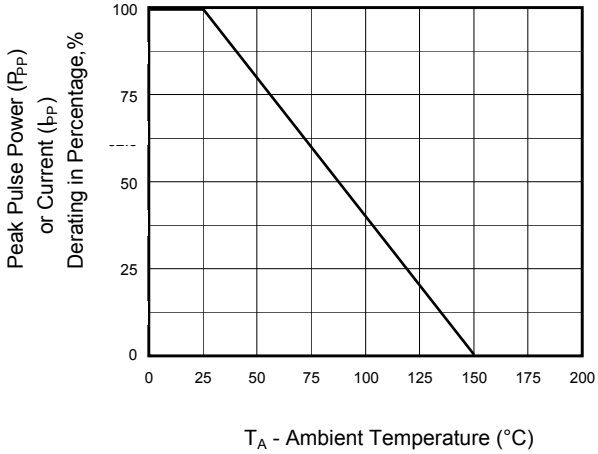


Fig.3 - Pulse Waveform

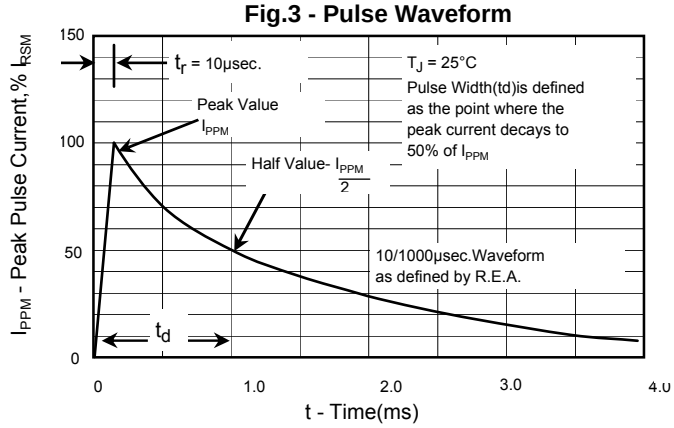


Fig. 4 - Typical Junction Capacitance

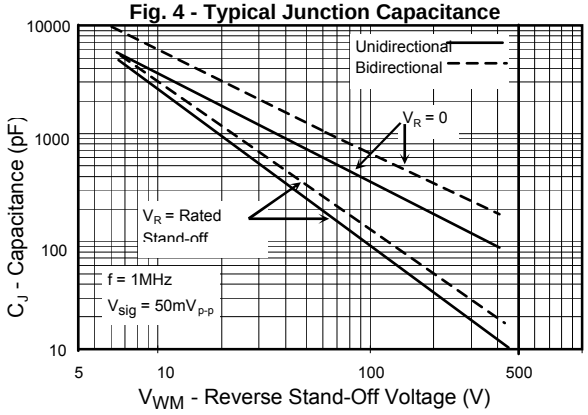


Fig. 5 - Steady State Power Derating Curve

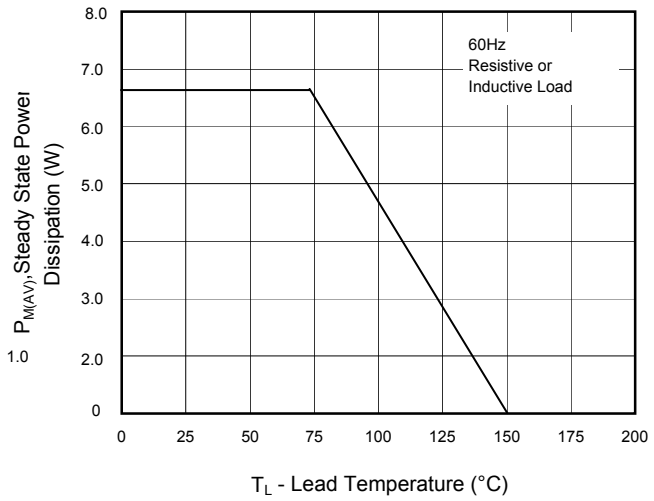
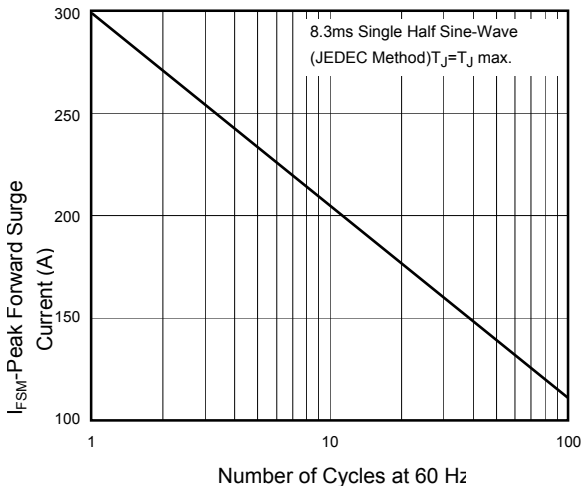
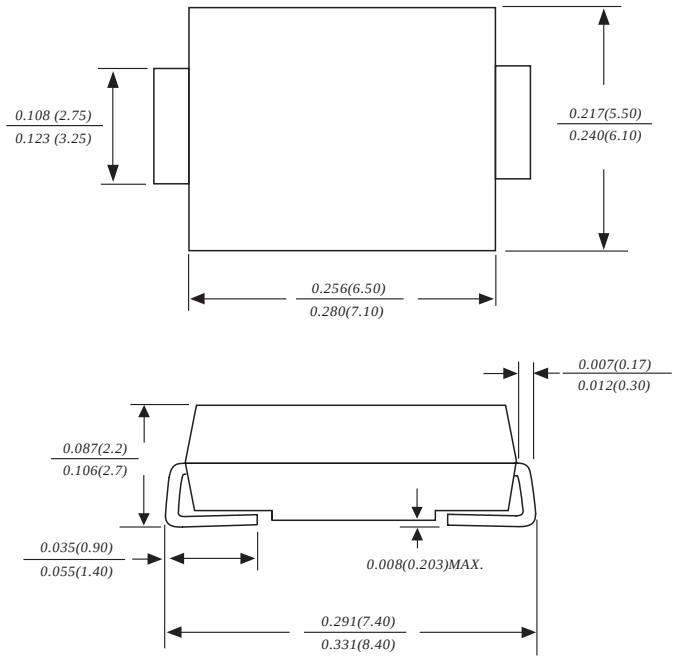


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

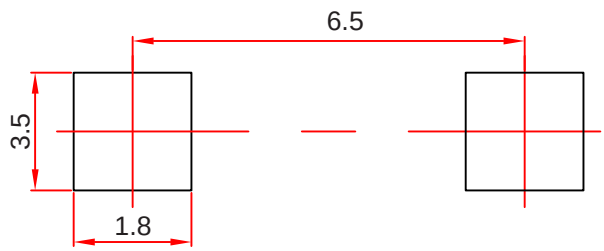


SMCG Package Outline Dimensions



Dimensions in inches and (millimeters)

SMCG Suggested Pad Layout



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

Reel Taping Specifications For Surface Mount Devices-SMCG

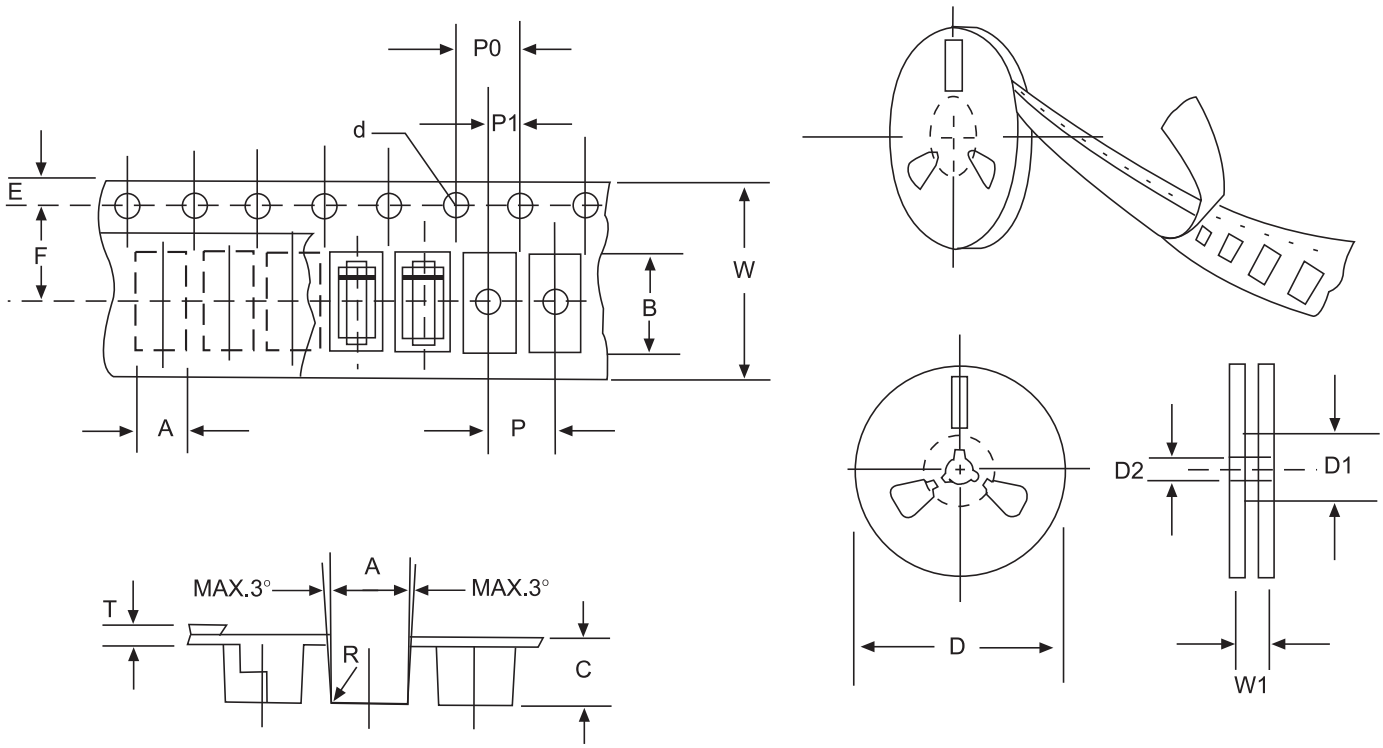


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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)
Stroket 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 packde in accordance with EIA standard RS-481-A and specification given above.