

SMCG Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

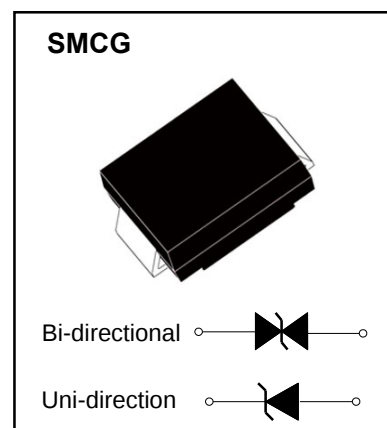
- P_{PPM} 6600W
- V_{RWM} 11V - 60V
- Low power loss, high efficiency
- Excellent clamping capability

Applications

- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

Mechanical Data

- Case: JEDEC DO-214AB molded plastic
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Solder plated, solderable per MIL-STD-202, Method 208
- Polarity: Color band denotes cathode end



Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	6600
Peak pulse current (1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at $T_L=75^{\circ}\text{C}$	6.5
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	300
Operating junction and storage temperature range	T_J, T_{STG}	$^{\circ}\text{C}$		-55 to +150

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (2)	V_F	V	at 100A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	$^{\circ}\text{C}/\text{W}$	Between junction and lead	15
	$R_{\theta JA}$	$^{\circ}\text{C}/\text{W}$	Between junction and Ambient	75
	$R_{\theta JC}$	$^{\circ}\text{C}/\text{W}$	Between junction and Case	10

Notes:

(1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.

(2) $V_F < 3.5\text{V}$ 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°C unless otherwise noted)

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage V _{BR} @ I _T		Test Current	Max. Clamping Voltage @ I _{PP}	Max. Peak Pulse Current	Max. Reverse Leakage @ V _{RWM}
UNI-POLAR	BI-POLAR	UNI	BI	V _{RWM} (V)	Min.(V)	Max.(V)	I _T (mA)	V _{C MAX.} (V)	I _{PP} (A)	I _R (μA)
6.6SMDJ11A	6.6SMDJ11CA	6K6PEN	6K6BEN	11.0	12.20	13.50	10	18.2	362.6	800
6.6SMDJ12A	6.6SMDJ12CA	6K6PEP	6K6BEP	12.0	13.30	14.70	10	19.9	331.7	800
6.6SMDJ13A	6.6SMDJ13CA	6K6PEQ	6K6BEQ	13.0	14.40	15.90	10	21.5	307.0	500
6.6SMDJ14A	6.6SMDJ14CA	6K6PER	6K6BER	14.0	15.60	17.20	10	23.2	284.5	200
6.6SMDJ15A	6.6SMDJ15CA	6K6PES	6K6BES	15.0	16.70	18.50	1	24.4	270.5	100
6.6SMDJ16A	6.6SMDJ16CA	6K6PET	6K6BET	16.0	17.80	19.70	1	26.0	253.8	50
6.6SMDJ17A	6.6SMDJ17CA	6K6PEU	6K6BEU	17.0	18.90	20.90	1	27.6	239.2	20
6.6SMDJ18A	6.6SMDJ18CA	6K6PEV	6K6BEV	18.0	20.00	22.10	1	29.2	226.0	10
6.6SMDJ20A	6.6SMDJ20CA	6K6PEW	6K6BEW	20.0	22.20	24.50	1	32.4	203.7	5
6.6SMDJ22A	6.6SMDJ22CA	6K6PEX	6K6BEX	22.0	24.40	26.90	1	35.5	185.9	5
6.6SMDJ24A	6.6SMDJ24CA	6K6PEZ	6K6BEZ	24.0	26.70	29.50	1	38.9	169.6	5
6.6SMDJ26A	6.6SMDJ26CA	6K6PFE	6K6BFE	26.0	28.90	31.90	1	42.1	156.8	5
6.6SMDJ28A	6.6SMDJ28CA	6K6PFG	6K6BFG	28.0	31.10	34.40	1	45.4	145.3	5
6.6SMDJ30A	6.6SMDJ30CA	6K6PFK	6K6BFK	30.0	33.30	36.80	1	48.4	136.4	5
6.6SMDJ33A	6.6SMDJ33CA	6K6PFM	6K6BFM	33.0	36.70	40.60	1	53.3	123.8	5
6.6SMDJ36A	6.6SMDJ36CA	6K6PFP	6K6BFP	36.0	40.00	44.20	1	58.1	113.7	5
6.6SMDJ40A	6.6SMDJ40CA	6K6PFR	6K6BFR	40.0	44.40	49.10	1	64.5	102.3	5
6.6SMDJ43A	6.6SMDJ43CA	6K6PFT	6K6BFT	43.0	47.80	52.80	1	69.4	95.0	5
6.6SMDJ45A	6.6SMDJ45CA	6K6PFV	6K6BFV	45.0	50.00	55.30	1	72.7	90.8	5
6.6SMDJ48A	6.6SMDJ48CA	6K6PFX	6K6BFX	48.0	53.30	58.90	1	77.4	85.3	5
6.6SMDJ51A	6.6SMDJ51CA	6K6PFZ	6K6BFZ	51.0	56.70	62.70	1	82.4	80.1	5
6.6SMDJ54A	6.6SMDJ54CA	6K6PGE	6K6BGE	54.0	60.00	66.30	1	87.1	75.8	5
6.6SMDJ58A	6.6SMDJ58CA	6K6PGG	6K6BGG	58.0	64.40	71.20	1	93.6	70.5	5
6.6SMDJ60A	6.6SMDJ60CA	6K6PGK	6K6BGK	60.0	66.70	73.70	1	96.8	68.2	5

Typical Characteristics

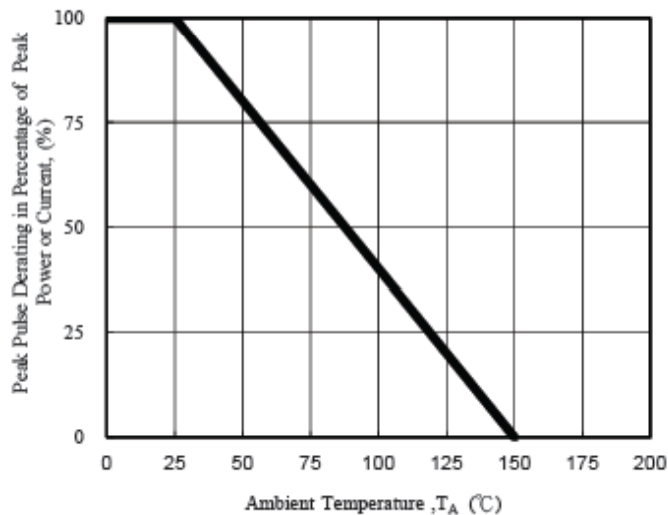


Fig. 1 - Pulse Derating Curve

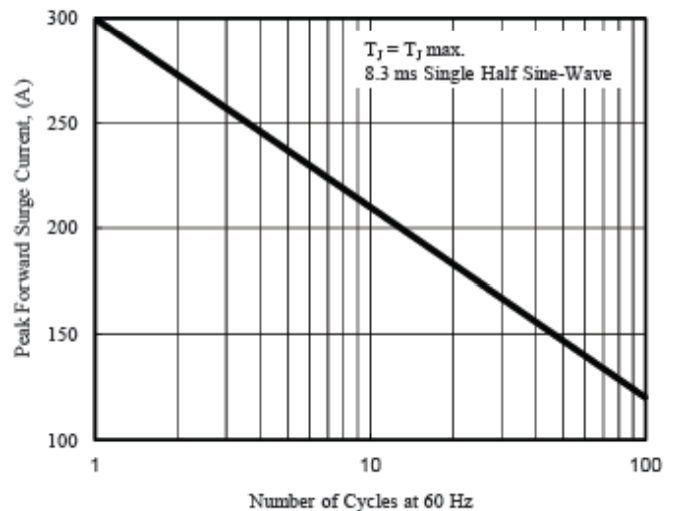


Fig. 2 - Maximum Non-Repetitive Surge Current

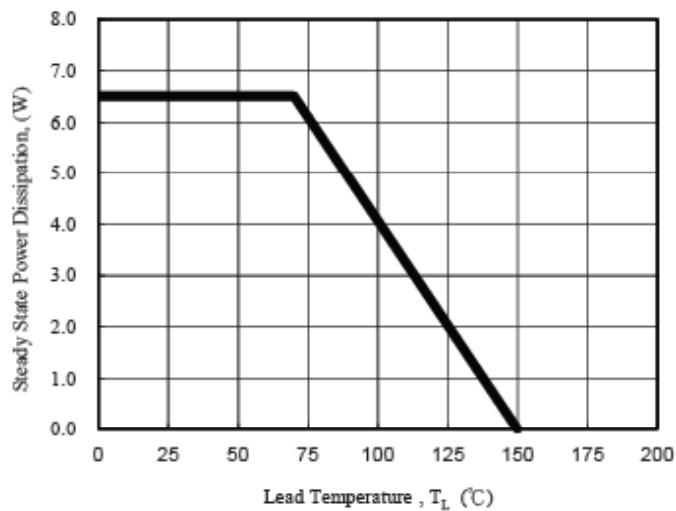


Fig. 3 - Steady State Power Derating Curve

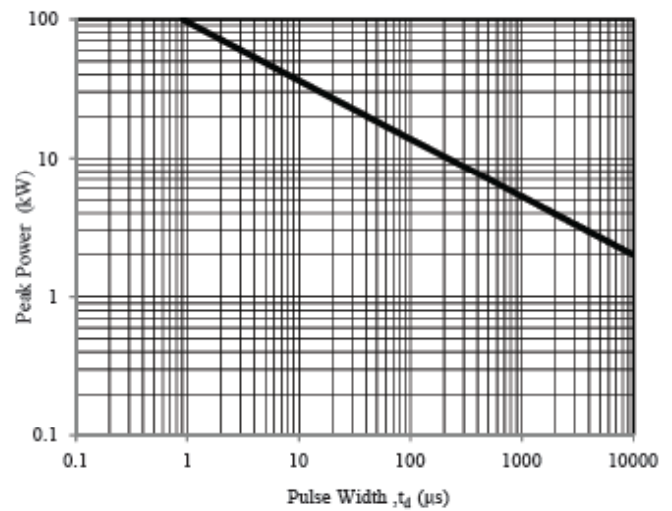


Fig. 4 - Peak Pulse Power Rating Curve

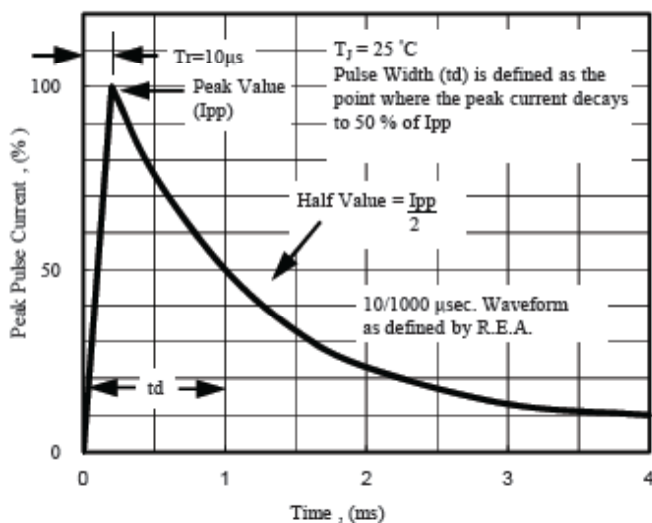


Fig. 5 - Pulse Waveform

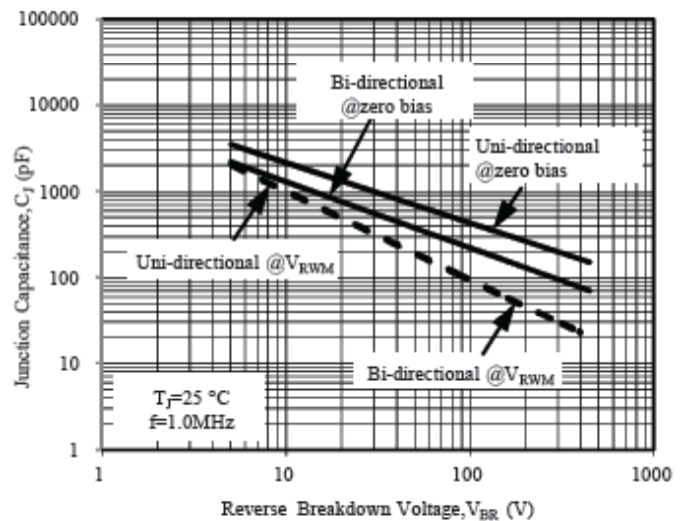
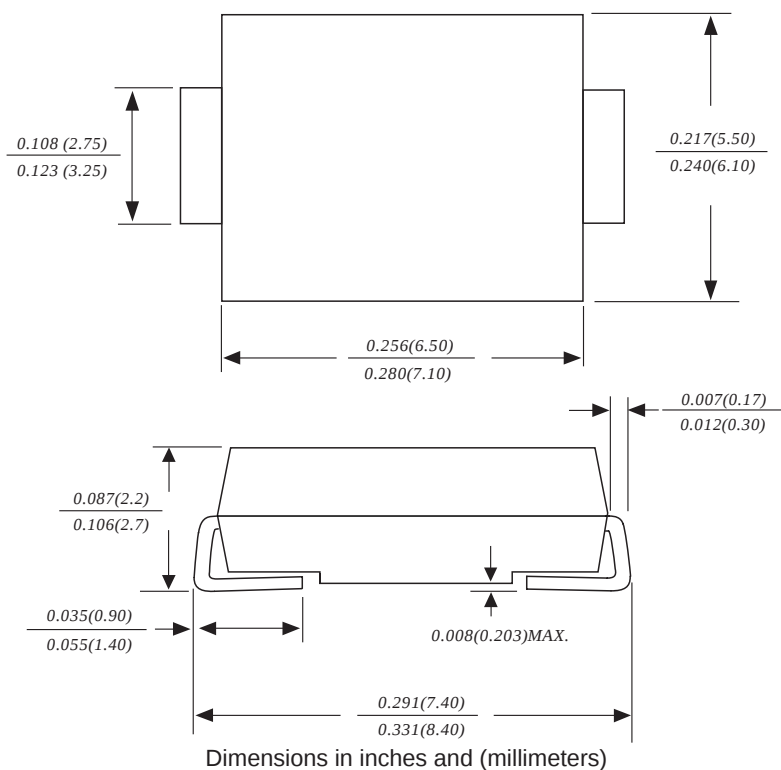
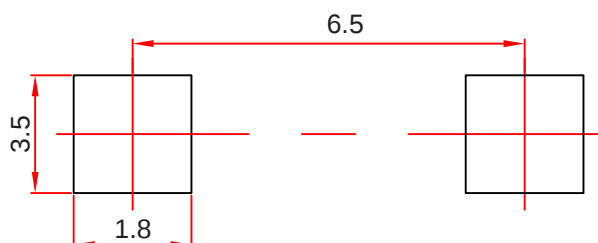


Fig. 6 - Typical Junction Capacitance

SMCG Package Outline Dimensions



SMCG Suggested Pad Layout



Note:

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

Ordering Information

Part Number	Package	Shipping Quantity
6.6SMDJ11(C)A- 6.6SMDJ60(C)A	SMCG	3000/tape&Reel

Marking Diagram

Uni-direction



XX: From 11 To 60

Bi-directional



Reel Taping Specifications For Surface Mount Devices–SMCG

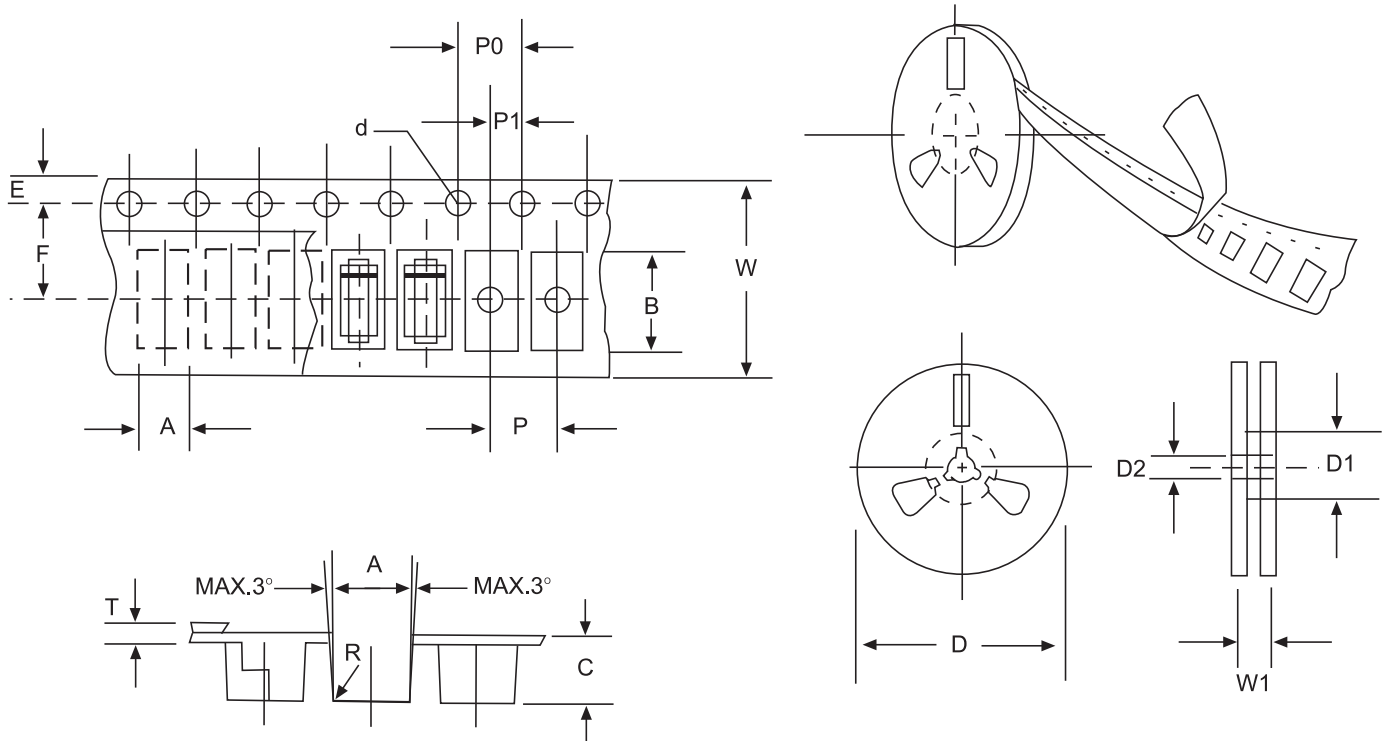


FIG: CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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.