SMAG Plastic-Encapsulate Diodes

Transient Voltage Suppressor Diodes

Features

- P_{PPM} 600W
- V_{RWM} 5.0V- 440V
- Low power loss, high efficiency
- Excellent clamping capability

SMAG

Bi-directional

Uni-direction

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

Mechical Data

- Case: JEDEC DO-214AC 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	600
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℃	5.0
Peak forward surge current(2)	I_{FSM}	A	8.3 ms single half sine-wave unidirectional only	100
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 25A for unidirectional only	3.5/5.0
Thermal resistance	$R_{\theta JL}$	℃/W	Between junction and lead	30
	$R_{\theta JA}$	℃/W	Between junction and Ambient	120
	$R_{\theta JC}$	℃/W	Between junction and Case	20

Notes:

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

(2) Mounted on 0.2 x 0.2" (5.0 x 5.0 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		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	V_{RWM}(V)	Min.(V)	Max.(V)	I_T(mA)	$V_{C\ MAX.}$(V)	I_{PP}(A)	I_R(uA)
SMA6J5.0A	SMA6J5.0CA	5.0	6.40	7.00	10	9.2	65.3	800
SMA6J6.0A	SMA6J6.0CA	6.0	6.67	7.37	10	10.3	58.3	800
SMA6J6.5A	SMA6J6.5CA	6.5	7.22	7.98	10	11.2	53.6	500
SMA6J7.0A	SMA6J7.0CA	7.0	7.78	8.60	10	12.0	50.0	200
SMA6J7.5A	SMA6J7.5CA	7.5	8.33	9.21	1	12.9	46.6	100
SMA6J8.0A	SMA6J8.0CA	8.0	8.89	9.83	1	13.6	44.2	50
SMA6J8.5A	SMA6J8.5CA	8.5	9.44	10.40	1	14.4	41.7	20
SMA6J9.0A	SMA6J9.0CA	9.0	10.00	11.10	1	15.4	39.0	10
SMA6J10A	SMA6J10CA	10.0	11.10	12.30	1	17.0	35.3	5
SMA6J11A	SMA6J11CA	11.0	12.20	13.50	1	18.2	33.0	1
SMA6J12A	SMA6J12CA	12.0	13.30	14.70	1	19.9	30.2	1
SMA6J13A	SMA6J13CA	13.0	14.40	15.90	1	21.5	28.0	1
SMA6J14A	SMA6J14CA	14.0	15.60	17.20	1	23.2	25.9	1
SMA6J15A	SMA6J15CA	15.0	16.70	18.50	1	24.4	24.6	1
SMA6J16A	SMA6J16CA	16.0	17.80	19.70	1	26.0	23.1	1
SMA6J17A	SMA6J17CA	17.0	18.90	20.90	1	27.6	21.8	1
SMA6J18A	SMA6J18CA	18.0	20.00	22.10	1	29.2	20.6	1
SMA6J20A	SMA6J20CA	20.0	22.20	24.50	1	32.4	18.6	1
SMA6J22A	SMA6J22CA	22.0	24.40	26.90	1	35.5	16.9	1
SMA6J24A	SMA6J24CA	24.0	26.70	29.50	1	38.9	15.5	1
SMA6J26A	SMA6J26CA	26.0	28.90	31.90	1	42.1	14.3	1
SMA6J28A	SMA6J28CA	28.0	31.10	34.40	1	45.4	13.3	1
SMA6J30A	SMA6J30CA	30.0	33.50	36.80	1	48.4	12.4	1
SMA6J33A	SMA6J33CA	33.0	36.70	40.60	1	53.3	11.3	1
SMA6J36A	SMA6J36CA	36.0	40.00	44.20	1	58.1	10.4	1
SMA6J40A	SMA6J40CA	40.0	44.40	49.10	1	64.5	9.3	1
SMA6J43A	SMA6J43CA	43.0	47.80	52.80	1	69.4	8.7	1
SMA6J45A	SMA6J45CA	45.0	50.00	55.30	1	72.7	8.3	1
SMA6J48A	SMA6J48CA	48.0	53.30	58.90	1	77.4	7.8	1
SMA6J51A	SMA6J51CA	51.0	56.70	62.70	1	82.4	7.3	1
SMA6J54A	SMA6J54CA	54.0	60.00	66.30	1	87.1	6.9	1
SMA6J58A	SMA6J58CA	58.0	64.40	71.20	1	93.6	6.5	1
SMA6J60A	SMA6J60CA	60.0	66.70	73.70	1	96.8	6.2	1
SMA6J64A	SMA6J64CA	64.0	71.10	78.60	1	103.0	5.9	1
SMA6J70A	SMA6J70CA	70.0	77.80	86.00	1	113.0	5.3	1
SMA6J75A	SMA6J75CA	75.0	83.30	92.10	1	121.0	5.0	1
SMA6J78A	SMA6J78CA	78.0	86.70	95.80	1	126.0	4.8	1
SMA6J85A	SMA6J85CA	85.0	94.4	104.0	1	137.0	4.4	1
SMA6J90A	SMA6J90CA	90.0	100.0	111.0	1	146.0	4.1	1
SMA6J100A	SMA6J100CA	100.0	111.0	123.0	1	162.0	3.7	1
SMA6J110A	SMA6J110CA	110.0	122.0	135.0	1	177.0	3.4	1
SMA6J120A	SMA6J120CA	120.0	133.0	147.0	1	193.0	3.1	1
SMA6J130A	SMA6J130CA	130.0	144.0	159.0	1	209.0	2.9	1
SMA6J150A	SMA6J150CA	150.0	167.0	185.0	1	243.0	2.5	1
SMA6J160A	SMA6J160CA	160.0	178.0	197.0	1	259.0	2.3	1
SMA6J170A	SMA6J170CA	170.0	189.0	209.0	1	275.0	2.2	1
SMA6J180A	SMA6J180CA	180.0	201.0	222.0	1	292.0	2.1	1
SMA6J190A	SMA6J190CA	190.0	209.0	243.0	1	308.0	2.0	1
SMA6J200A	SMA6J200CA	200.0	224.0	247.0	1	324.0	1.9	1
SMA6J210A	SMA6J210CA	210.0	231.0	268.0	1	340.0	1.8	1
SMA6J220A	SMA6J220CA	220.0	246.0	272.0	1	356.0	1.7	1

Typical Characteristics

FIG1:Peak Pulse Power Rating Curve

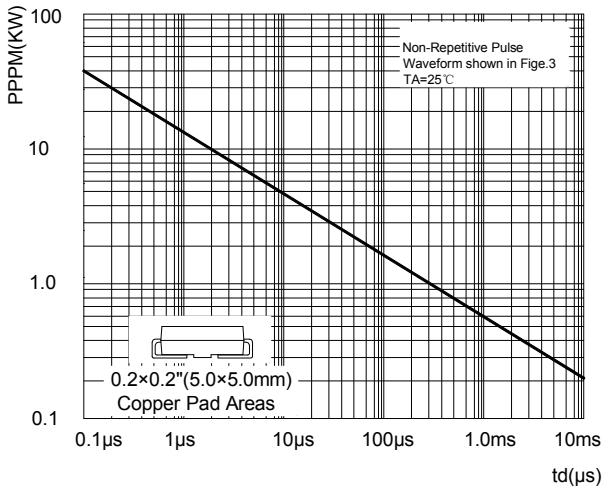


FIG2: Pulse Power or Current vs. Initial Junction Temperature

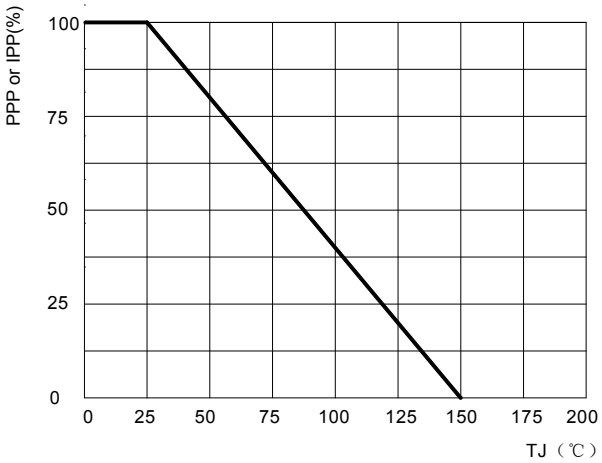


FIG3: Pulse Waveform

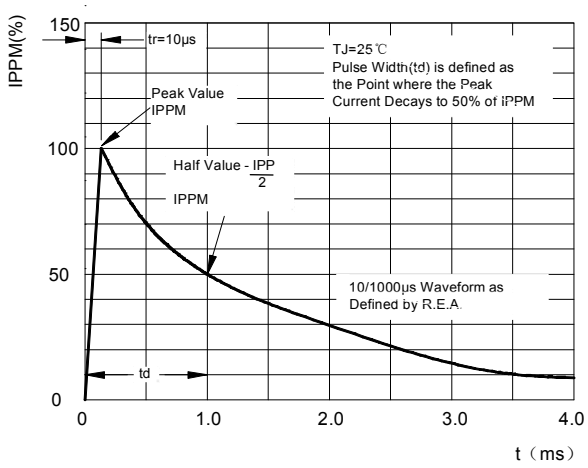


Fig. 4 Typical Junction Capacitance

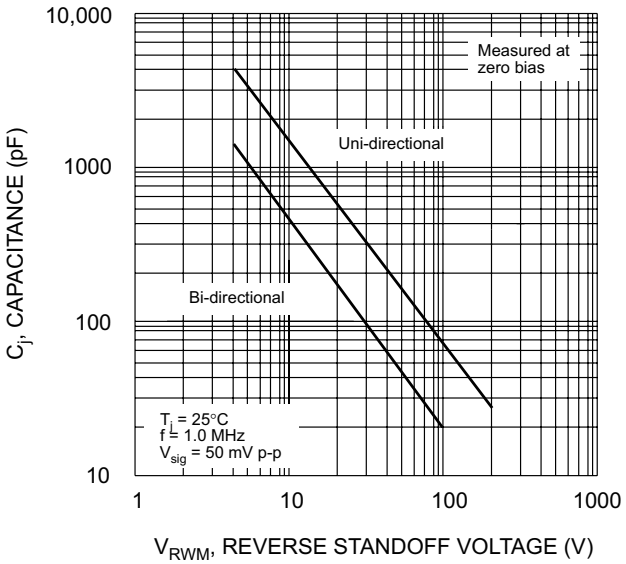


FIG5: Maximum Non-Repetitive Surge Current

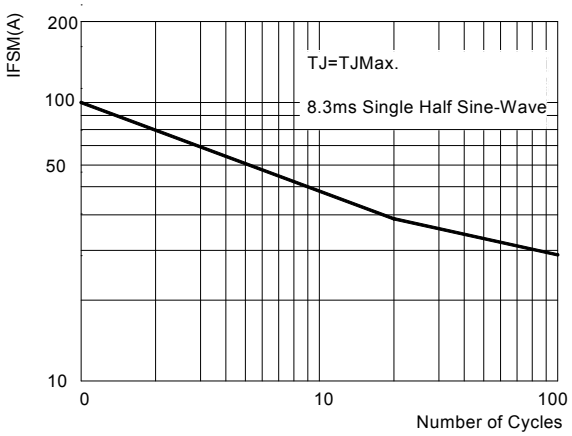
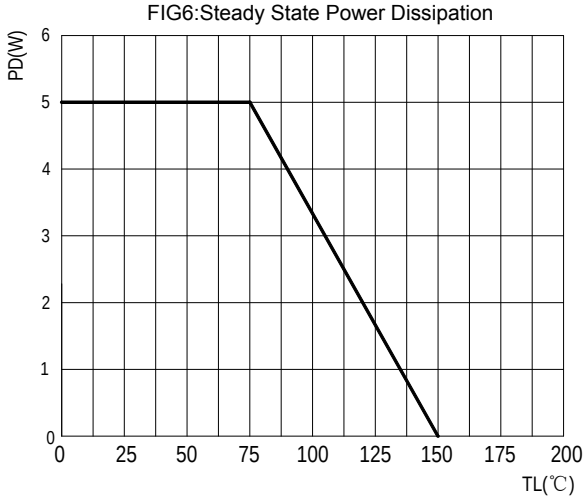
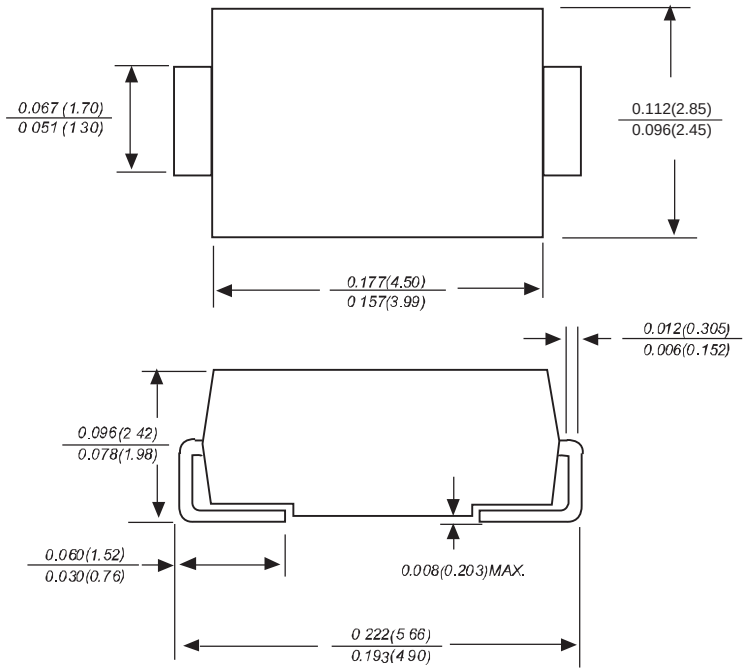


FIG6:Steady State Power Dissipation

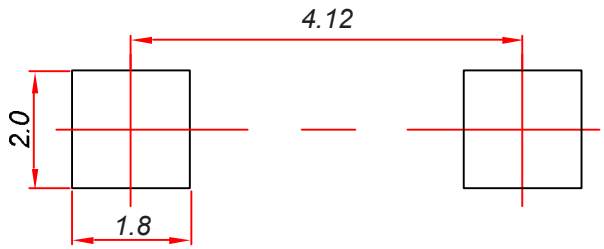


SMAG Package Outline Dimensions



Dimensions in inches and (millimeters)

SMAG Suggested Pad Layout



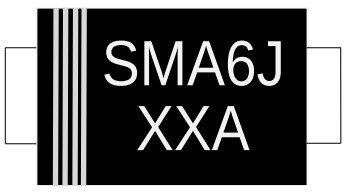
Note:
1.Controlling dimension:in millimeters.
2.General tolerance:±0.05mm.
3.The pad layout is for reference purposes only.

Ordering Information

Part Number	Package	Shipping Quantity
SMA6J5.0(C)A SMA6J220(C)A	SMAG	5000/tape&Reel

Marking Diagram

Uni-direction



XX: From 5.0 To 220

Bi-directional

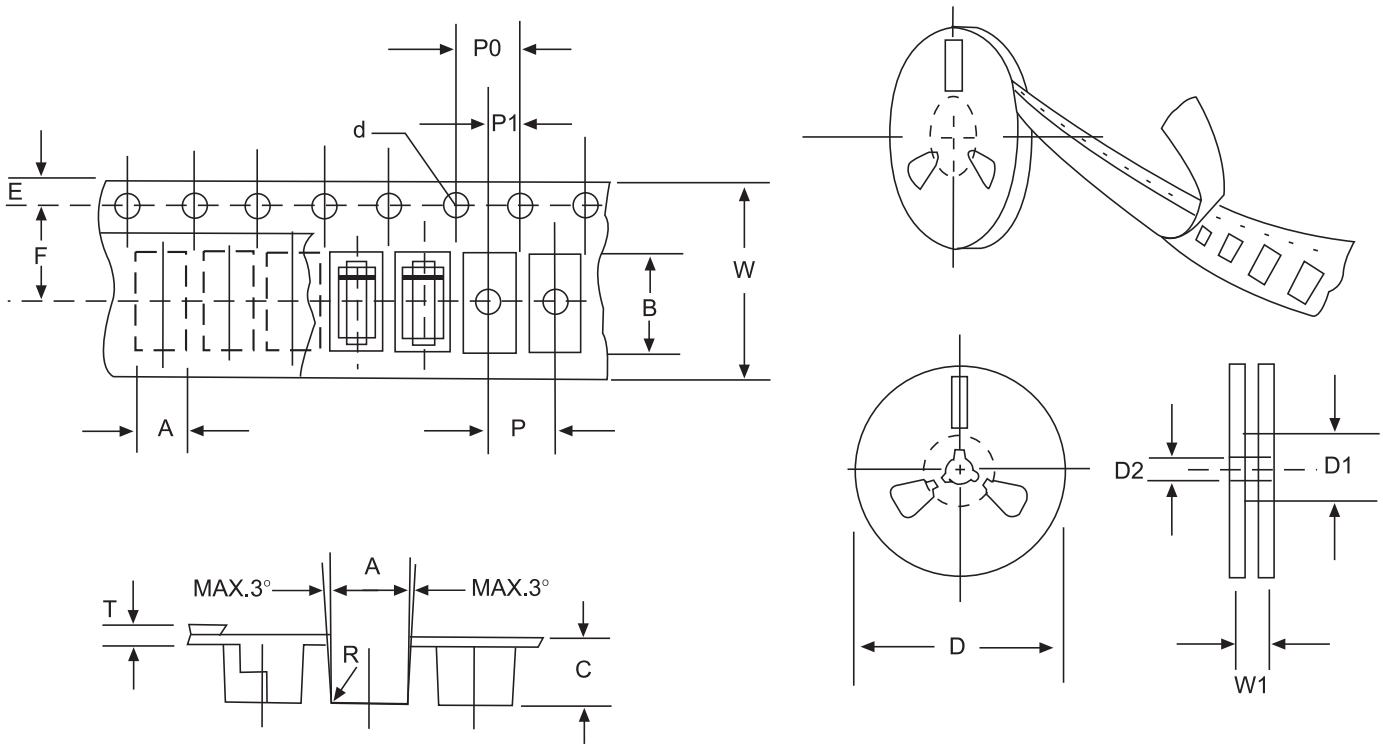


Fig:CONFIGURATION OF FLAT MELF TAPING

ITEM	SYMBOL	SMAG mm(inch)
Carrier width	A	2.79±0.1(0.110±0.004)
Carrier length	B	5.33±0.1(0.210±0.004)
Carrier depth	C	2.36±0.1(0.093±0.004)
Sprocket hole	d	1.55±0.05(0.061±0.002)
Reel outside diameter	D	279±2.0 (11± 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	5.5±0.05(0.217±0.002)
Punch hole pitch	P	4.0±0.1(0.157±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	0.28±0.02(0.011±0.0008)
Tape width	W	12.0±0.2(0.472±0.008)
Reel width	W1	16.8±2.0(0.661±0.079)

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