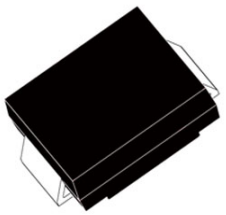
SMCG Plastic-Encapsulate Diodes

5.0SMDJ SERIES Transient Voltage Suppressor Diodes

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{RWM}	11-440	V
I_R	800-5	μA
I_{PP}	275-7	A
V_C	18.2-713	V
P_{PPM}	5000	W

SMCG



Bi-directional

Uni-directional

Features

- For surface mounted applications in order to optimize board space
- Glass passivated chip junction
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- 5000W peak pulse power capability with a 10/1000 us waveform by 0.01% duty cycle
- RoHS Compliant
- ESD protection of data lines in accordance with IEC 61000-4-2,
- 30kV(Air),30kV (Contact)

Mechanical Data

- Case: SMCG
- Molding compound meets UL 94V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Polarity: Color band denotes cathode end

Marking



Cathode Band:for uni-directional products only

5.0SMDJ/**CA = Device code, **=Voltage

C: Bi-directional or not

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Limiting Values (Absolute Maximum Rating)

Item	Symbol	Unit	Conditions	Max
Peak pulse power dissipation	P_{PPM}	W	with a 10/1000us waveform	5000
Peakpulse current(note 1)	I_{PPM}	A	with a 10/1000us waveform	See Next Table
Power dissipation	P_D	W	On infinite heat sink at T_L=50℃	6.5
Peak forward surge current	I_{FSM}	A	8.3 ms single half sine-wave uni-directional only (note 2)	300
Operating junction and storage temperature range	T_J,T_{STG}	℃		-55 to +150

Electrical Characteristics(Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Max
Maximum instantaneous forward Voltage (note 3)	V_F	V	at 100A for uni-directional only	3.0/5.0
Thermal resistance (note 4)	$R_{\theta JL}$	℃/W	junction to lead T_L=50℃	15
	$R_{\theta JLA}$	℃/W	junction to ambient T_A=25℃	75

Notes:

(1) Non-repetitive current pulse at T_A=25℃， per waveform of Figure 2.

(2) 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minutes maximum

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

(4) Thermal resistance from junction to ambient and from junction to lead mounted on 1" x 1"(25.4mm x 25.4mm)FR4 PCB，double sided copper, with minimum pad layout

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number		Device Marking Code		Breakdown Voltage VBR@IT		Test Current	Max Reverse Leakage @V_{RWM}	Reverse Standoff Voltage	Max Peak Pulse Current(1)	Max Clamping Voltage @I_{PP}
UNI	BI	UNI	BI	Min.(V)	Max.(V)	IT(mA)	I_R (μA)	V_{RWM}(V)	I_{PP}(A)	V_C(V)
5.0SMDJ11A	5.0SMDJ11CA	5.0SMDJ 11A	5.0SMDJ 11CA	12.2	13.5	10	800	11	275	18.2
5.0SMDJ12A	5.0SMDJ12CA	5.0SMDJ 12A	5.0SMDJ 12CA	13.3	14.7	10	800	12	252	19.9
5.0SMDJ13A	5.0SMDJ13CA	5.0SMDJ 13A	5.0SMDJ 13CA	14.4	15.9	10	500	13	233	21.5
5.0SMDJ14A	5.0SMDJ14CA	5.0SMDJ 14A	5.0SMDJ 14CA	15.6	17.2	10	200	14	216	23.2
5.0SMDJ15A	5.0SMDJ15CA	5.0SMDJ 15A	5.0SMDJ 15CA	16.7	18.5	1	100	15	205	24.4
5.0SMDJ16A	5.0SMDJ16CA	5.0SMDJ 16A	5.0SMDJ 16CA	17.8	19.7	1	50	16	193	26.0
5.0SMDJ17A	5.0SMDJ17CA	5.0SMDJ 17A	5.0SMDJ 17CA	18.9	20.9	1	20	17	181	27.6
5.0SMDJ18A	5.0SMDJ18CA	5.0SMDJ 18A	5.0SMDJ 18CA	20.0	22.1	1	10	18	172	29.2
5.0SMDJ19A	5.0SMDJ19CA	5.0SMDJ 19A	5.0SMDJ 19CA	21.1	23.3	1	10	19	162	30.8
5.0SMDJ20A	5.0SMDJ20CA	5.0SMDJ 20A	5.0SMDJ 20CA	22.2	24.5	1	5	20	155	32.4
5.0SMDJ22A	5.0SMDJ22CA	5.0SMDJ 22A	5.0SMDJ 22CA	24.4	26.9	1	5	22	141	35.5
5.0SMDJ24A	5.0SMDJ24CA	5.0SMDJ 24A	5.0SMDJ 24CA	26.7	29.5	1	5	24	129	38.9
5.0SMDJ26A	5.0SMDJ26CA	5.0SMDJ 26A	5.0SMDJ 26CA	28.9	31.9	1	5	26	119	42.1
5.0SMDJ28A	5.0SMDJ28CA	5.0SMDJ 28A	5.0SMDJ 28CA	31.1	34.4	1	5	28	110	45.4
5.0SMDJ30A	5.0SMDJ30CA	5.0SMDJ 30A	5.0SMDJ 30CA	33.3	36.8	1	5	30	103	48.4
5.0SMDJ33A	5.0SMDJ33CA	5.0SMDJ 33A	5.0SMDJ 33CA	36.7	40.6	1	5	33	93.9	53.3
5.0SMDJ36A	5.0SMDJ36CA	5.0SMDJ 36A	5.0SMDJ 36CA	40.0	44.2	1	5	36	86.1	58.1
5.0SMDJ40A	5.0SMDJ40CA	5.0SMDJ 40A	5.0SMDJ 40CA	44.4	49.1	1	5	40	77.6	64.5
5.0SMDJ43A	5.0SMDJ43CA	5.0SMDJ 43A	5.0SMDJ 43CA	47.8	52.8	1	5	43	72.1	69.4
5.0SMDJ45A	5.0SMDJ45CA	5.0SMDJ 45A	5.0SMDJ 45CA	50.0	55.3	1	5	45	68.8	72.7

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number		Device Marking Code		Breakdown Voltage VBR@IT		Test Current	Max Reverse Leakage @V_{RWM}	Reverse Standoff Voltage	Max Peak Pulse Current(1)	Max Clamping Voltage @I_{PP}
UNI	BI	UNI	BI	Min.(V)	Max.(V)	IT(mA)	I_R (uA)	V_{RWM}(V)	I_{PP}(A)	V_C(V)
5.0SMDJ48A	5.0SMDJ48CA	5.0SMDJ 48A	5.0SMDJ 48CA	53.3	58.9	1	5	48	64.7	77.4
5.0SMDJ51A	5.0SMDJ51CA	5.0SMDJ 51A	5.0SMDJ 51CA	56.7	62.7	1	5	51	60.7	82.4
5.0SMDJ54A	5.0SMDJ54CA	5.0SMDJ 54A	5.0SMDJ 54CA	60.0	66.3	1	5	54	57.5	87.1
5.0SMDJ58A	5.0SMDJ58CA	5.0SMDJ 58A	5.0SMDJ 58CA	64.4	71.2	1	5	58	53.5	93.6
5.0SMDJ60A	5.0SMDJ60CA	5.0SMDJ 60A	5.0SMDJ 60CA	66.7	73.7	1	5	60	51.7	96.8
5.0SMDJ64A	5.0SMDJ64CA	5.0SMDJ 64A	5.0SMDJ 64CA	71.1	78.6	1	5	64	48.6	103.0
5.0SMDJ70A	5.0SMDJ70CA	5.0SMDJ 70A	5.0SMDJ 70CA	77.8	86.0	1	5	70	44.3	113.0
5.0SMDJ75A	5.0SMDJ75CA	5.0SMDJ 75A	5.0SMDJ 75CA	83.3	92.1	1	5	75	41.4	121.0
5.0SMDJ78A	5.0SMDJ78CA	5.0SMDJ 78A	5.0SMDJ 78CA	86.7	95.8	1	5	78	39.7	126.0
5.0SMDJ80A	5.0SMDJ80CA	5.0SMDJ 80A	5.0SMDJ 80CA	88.8	97.6	1	5	80	38.6	129.6
5.0SMDJ85A	5.0SMDJ85CA	5.0SMDJ 85A	5.0SMDJ 85CA	94.4	104.0	1	5	85	36.5	137.0
5.0SMDJ90A	5.0SMDJ90CA	5.0SMDJ 90A	5.0SMDJ 90CA	100.0	111.0	1	5	90	34.3	146.0
5.0SMDJ100A	5.0SMDJ100CA	5.0SMDJ 100A	5.0SMDJ 100CA	111.0	123.0	1	5	100	30.9	162.0
5.0SMDJ110A	5.0SMDJ110CA	5.0SMDJ 110A	5.0SMDJ 110CA	122.0	135.0	1	5	110	28.3	177.0
5.0SMDJ120A	5.0SMDJ120CA	5.0SMDJ 120A	5.0SMDJ 120CA	133.0	147.0	1	5	120	26.0	193.0
5.0SMDJ130A	5.0SMDJ130CA	5.0SMDJ 130A	5.0SMDJ 130CA	144.0	159.0	1	5	130	24.0	209.0
5.0SMDJ140A	5.0SMDJ140CA	5.0SMDJ 140A	5.0SMDJ 140CA	155.0	171.0	1	5	140	22.0	226.8
5.0SMDJ150A	5.0SMDJ150CA	5.0SMDJ 150A	5.0SMDJ 150CA	167.0	185.0	1	5	150	20.6	243.0
5.0SMDJ160A	5.0SMDJ160CA	5.0SMDJ 160A	5.0SMDJ 160CA	178.0	197.0	1	5	160	19.3	259.0
5.0SMDJ170A	5.0SMDJ170CA	5.0SMDJ 170A	5.0SMDJ 170CA	189.0	209.0	1	5	170	18.2	275.0

Electrical Characteristics(T_A=25℃ unless otherwise noted)

Part Number		Device Marking Code		Breakdown Voltage VBR@IT		Test Current	Max Reverse Leakage @V_{RWM}	Reverse Standoff Voltage	Max Peak Pulse Current(1)	Max Clamping Voltage @I_{PP}
UNI	BI	UNI	BI	Min.(V)	Max.(V)	IT(mA)	I_R (uA)	V_{RWM}(V)	I_{PP}(A)	V_C(V)
5.0SMDJ180A	5.0SMDJ180CA	5.0SMDJ 180A	5.0SMDJ 180CA	200.0	220.0	1	5	180	17.1	291.6
5.0SMDJ190A	5.0SMDJ190CA	5.0SMDJ 190A	5.0SMDJ 190CA	211.0	232.0	1	5	190	16.2	307.8
5.0SMDJ200A	5.0SMDJ200CA	5.0SMDJ 200A	5.0SMDJ 200CA	224.0	247.0	1	5	200	15.4	324.0
5.0SMDJ220A	5.0SMDJ220CA	5.0SMDJ 220A	5.0SMDJ 220CA	246.0	272.0	1	5	220	14.0	356.0
5.0SMDJ250A	5.0SMDJ250CA	5.0SMDJ 250A	5.0SMDJ 250CA	279.0	309.0	1	5	250	12.3	405.0
5.0SMDJ300A	5.0SMDJ300CA	5.0SMDJ 300A	5.0SMDJ 300CA	335.0	371.0	1	5	300	10.3	486.0
5.0SMDJ350A	5.0SMDJ350CA	5.0SMDJ 350A	5.0SMDJ 350CA	391.0	432.0	1	5	350	8.8	567.0
5.0SMDJ400A	5.0SMDJ400CA	5.0SMDJ 400A	5.0SMDJ 400CA	447.0	494.0	1	5	400	7.7	648.0
5.0SMDJ440A	5.0SMDJ440CA	5.0SMDJ 440A	5.0SMDJ 440CA	492.0	543.0	1	5	440	7.0	713.0

Notes:

(1) Waveform of 5.0SMDJ11A - 5.0SMDJ440CA are defined as per fig.3

Tyical Characteristics

Figure 1. Peak Pulse Power Rating Curve

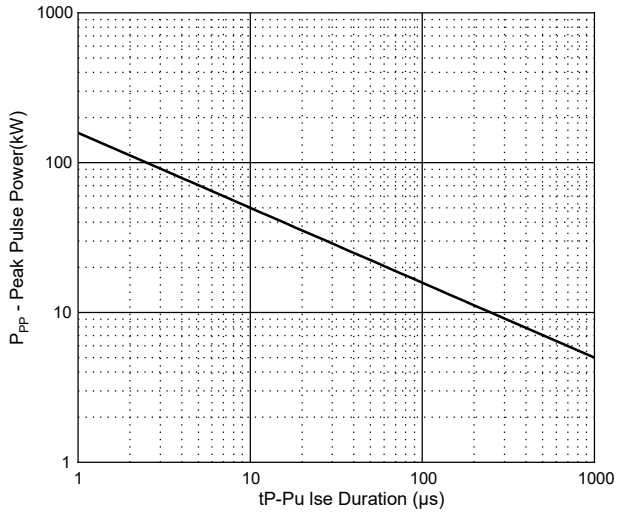


Figure 2. Pulse Derating Curve

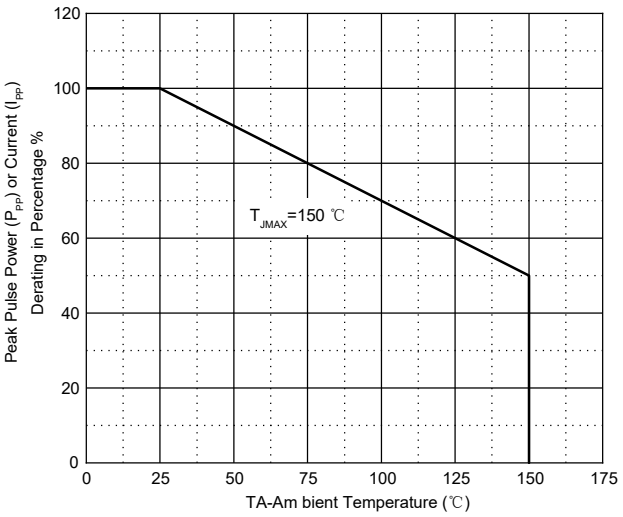


Figure 3. Pulse Waveform

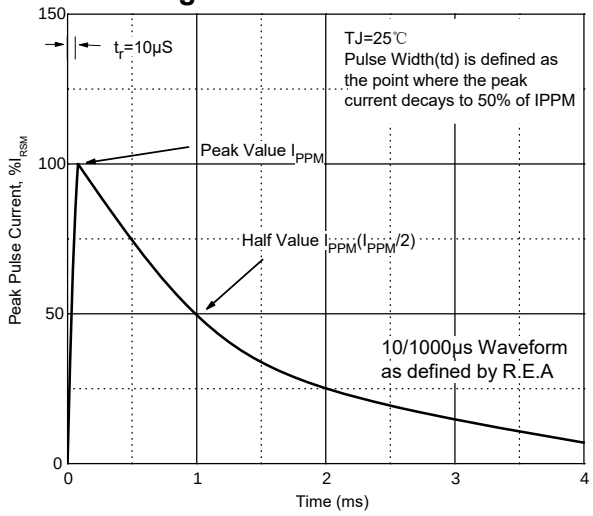


Figure 4. Typical Junction Capacitance

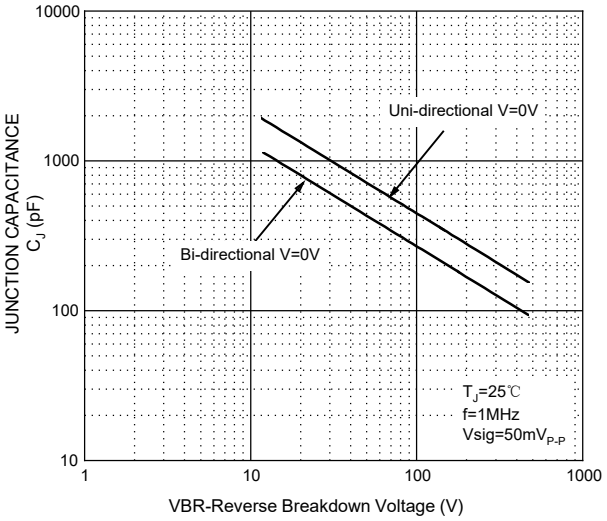


Figure 5. Steady State Power Dissipation Derating Curve

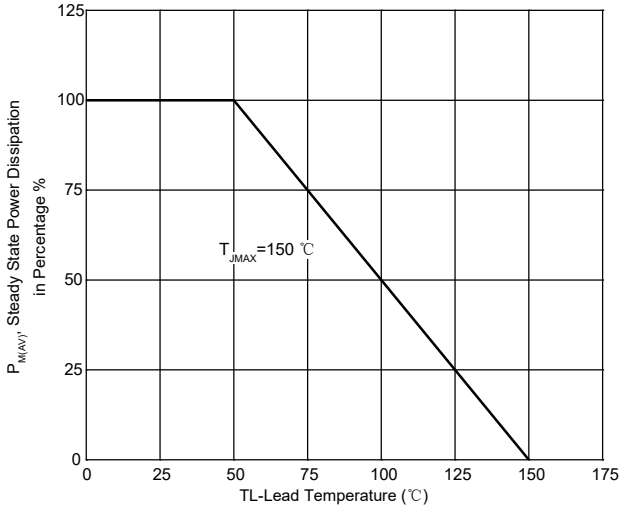
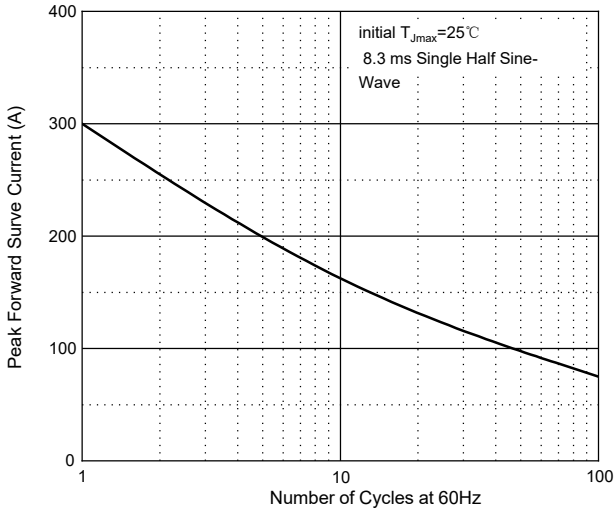
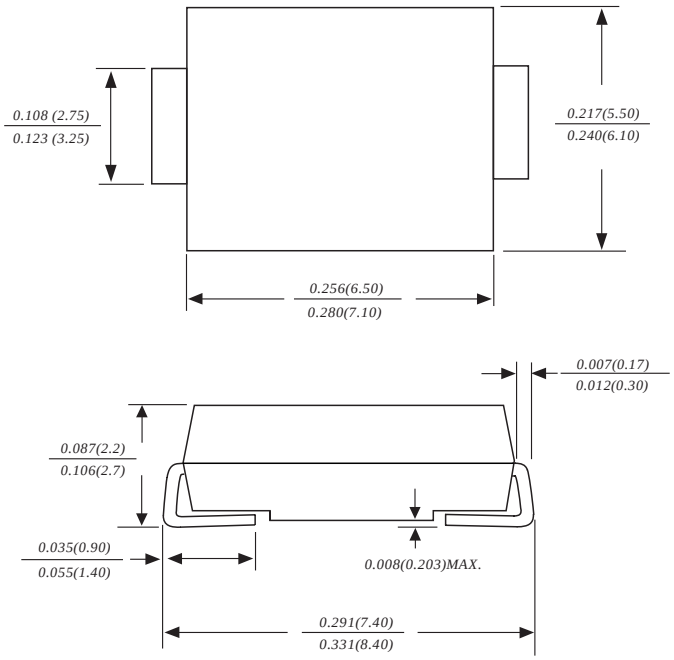


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

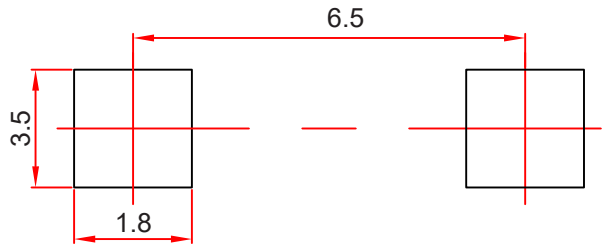


SMCG Package Qutline Dimensions



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.

NOTICE

SZCJ reserves the right to make modifications,enhancements,improvements,corrections or other changes without further notice to any product herein.SZCJ does not assume any liability arising out of the application or use of any product described .

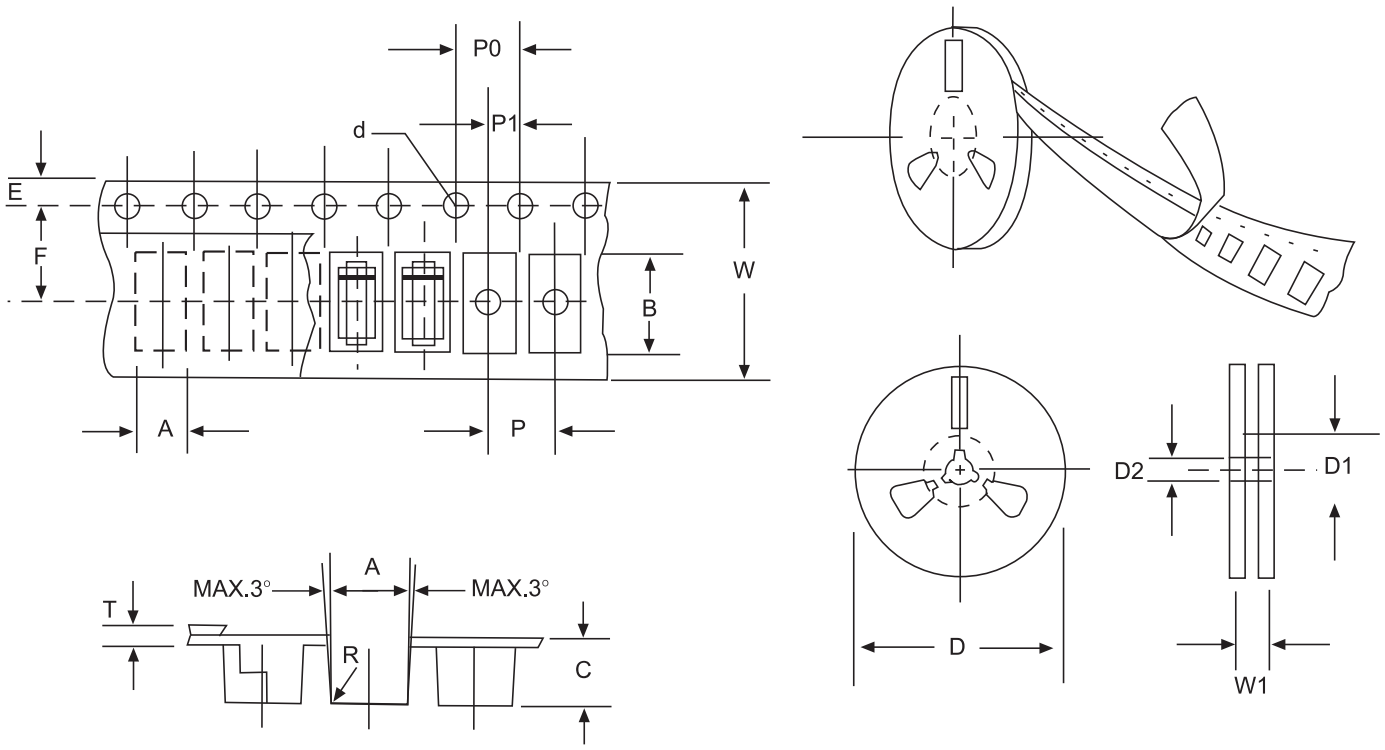


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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 packed in accordance with EIA standard RS-481-A and specification given above.