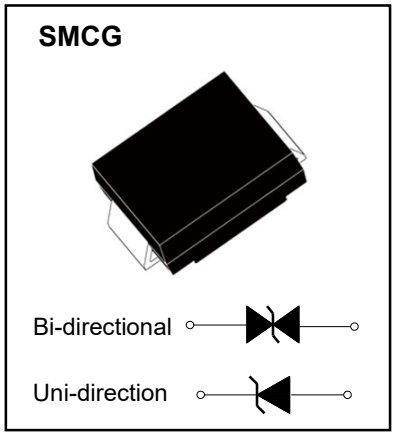
JIANGSU CHANGJING ELECTRONICS TECHNOLOGY CO., LTD.

SMCG Plastic-Encapsulate Diodes

SMDJ SERIES Transient Voltage Suppressor Diodes

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{RWM}	5-220	V
I_R	1000-1	uA
I_{PP}	326.1-8.4	A
V_C	9.2-356	V
P_{PPM}	3000	W



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
- 3000W 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(DO-214)
- 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

D**CA = Device code, **=Voltage

C: Bi-directional or not

XXXX=Data Code

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	3000
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	V_F	V	at 100A for uni-directional only	3.5
Thermal resistance	$R_{\theta JL}$	℃/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) 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

Typical Characteristics

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)
SMDJ5.0A	SMDJ5.0CA	D5.0A XXXX	D5.0CA XXXX	6.40	7.00	10	1000	5.0	326.1	9.2
SMDJ6.0A	SMDJ6.0CA	D6.0A XXXX	D6.0CA XXXX	6.67	7.37	10	1000	6.0	291.3	10.3
SMDJ6.5A	SMDJ6.5CA	D6.5A XXXX	D6.5CA XXXX	7.22	7.98	10	500	6.5	267.9	11.2
SMDJ7.0A	SMDJ7.0CA	D7.0A XXXX	D7.0CA XXXX	7.78	8.60	10	200	7.0	250.0	12.0
SMDJ7.5A	SMDJ7.5CA	D7.5A XXXX	D7.5CA XXXX	8.33	9.21	1	100	7.5	232.6	12.9
SMDJ8.0A	SMDJ8.0CA	D8.0A XXXX	D8.0CA XXXX	8.89	9.83	1	50	8.0	220.6	13.6
SMDJ8.5A	SMDJ8.5CA	D8.5A XXXX	D8.5CA XXXX	9.44	10.40	1	20	8.5	208.3	14.4
SMDJ9.0A	SMDJ9.0CA	D9.0A XXXX	D9.0CA XXXX	10.00	11.10	1	10	9.0	194.8	15.4
SMDJ10A	SMDJ10CA	D10A XXXX	D10CA XXXX	11.10	12.30	1	5	10.0	176.5	17.0
SMDJ11A	SMDJ11CA	D11A XXXX	D11CA XXXX	12.20	13.50	1	5	11.0	164.8	18.2
SMDJ12A	SMDJ12CA	D12A XXXX	D12CA XXXX	13.30	14.70	1	5	12.0	150.8	19.9
SMDJ13A	SMDJ13CA	D13A XXXX	D13CA XXXX	14.40	15.90	1	1	13.0	139.5	21.5
SMDJ14A	SMDJ14CA	D14A XXXX	D14CA XXXX	15.60	17.20	1	1	14.0	129.3	23.2
SMDJ15A	SMDJ15CA	D15A XXXX	D15CA XXXX	16.70	18.50	1	1	15.0	123.0	24.4
SMDJ16A	SMDJ16CA	D16A XXXX	D16CA XXXX	17.80	19.70	1	1	16.0	115.4	26.0
SMDJ17A	SMDJ17CA	D17A XXXX	D17CA XXXX	18.90	20.90	1	1	17.0	108.7	27.6
SMDJ18A	SMDJ18CA	D18A XXXX	D18CA XXXX	20.00	22.10	1	1	18.0	102.7	29.2
SMDJ20A	SMDJ20CA	D20A XXXX	D20CA XXXX	22.20	24.50	1	1	20.0	92.6	32.4
SMDJ22A	SMDJ22CA	D22A XXXX	D22CA XXXX	24.40	26.90	1	1	22.0	84.5	35.5
SMDJ24A	SMDJ24CA	D24A XXXX	D24CA XXXX	26.70	29.50	1	1	24.0	77.1	38.9

Typical Characteristics

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)
SMDJ26A	SMDJ26CA	D26A XXXX	D26CA XXXX	28.90	31.90	1	1	26.0	71.3	42.1
SMDJ28A	SMDJ28CA	D28A XXXX	D28CA XXXX	31.10	34.40	1	1	28.0	66.1	45.4
SMDJ30A	SMDJ30CA	D30A XXXX	D30CA XXXX	33.30	36.80	1	1	30.0	62.0	48.4
SMDJ33A	SMDJ33CA	D33A XXXX	D33CA XXXX	36.70	40.60	1	1	33.0	56.3	53.3
SMDJ35A	SMDJ35CA	D35A XXXX	D35CA XXXX	38.90	43.00	1	1	35.0	53.1	56.5
SMDJ36A	SMDJ36CA	D36A XXXX	D36CA XXXX	40.00	44.20	1	1	36.0	51.6	58.1
SMDJ37.5A	SMDJ37.5CA	D37.5A XXXX	D37.5CA XXXX	41.65	46.05	1	1	37.5	49.6	60.5
SMDJ40A	SMDJ40CA	D40A XXXX	D40CA XXXX	44.40	49.10	1	1	40.0	46.5	64.5
SMDJ42.5A	SMDJ42.5CA	D42.5A XXXX	D42.5CA XXXX	47.20	52.00	1	1	42.5	43.8	68.5
SMDJ43A	SMDJ43CA	D43A XXXX	D43CA XXXX	47.80	52.80	1	1	43.0	43.2	69.4
SMDJ45A	SMDJ45CA	D45A XXXX	D45CA XXXX	50.00	55.30	1	1	45.0	41.3	72.7
SMDJ48A	SMDJ48CA	D48A XXXX	D48CA XXXX	53.30	58.90	1	1	48.0	38.8	77.4
SMDJ51A	SMDJ51CA	D51A XXXX	D51CA XXXX	56.70	62.70	1	1	51.0	36.4	82.4
SMDJ54A	SMDJ54CA	D54A XXXX	D54CA XXXX	60.00	66.30	1	1	54.0	34.4	87.1
SMDJ58A	SMDJ58CA	D58A XXXX	D58CA XXXX	64.40	71.20	1	1	58.0	32.1	93.6
SMDJ60A	SMDJ60CA	D60A XXXX	D60CA XXXX	66.70	73.70	1	1	60.0	31.0	96.8
SMDJ64A	SMDJ64CA	D64A XXXX	D64CA XXXX	71.10	78.60	1	1	64.0	29.1	103.0
SMDJ65A	SMDJ65CA	D65A XXXX	D65CA XXXX	72.00	79.50	1	1	65.0	28.7	104.5
SMDJ70A	SMDJ70CA	D70A XXXX	D70CA XXXX	77.80	86.00	1	1	70.0	26.5	113.0
SMDJ75A	SMDJ75CA	D75A XXXX	D75CA XXXX	83.30	92.10	1	1	75.0	24.8	121.0

Typical Characteristics

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)
SMDJ78A	SMDJ78CA	D78A XXXX	D78CA XXXX	86.70	95.80	1	1	78.0	23.8	126.0
SMDJ80A	SMDJ80CA	D80A XXXX	D80CA XXXX	89.00	98.50	1	1	80.0	23.2	129.5
SMDJ85A	SMDJ85CA	D85A XXXX	D85CA XXXX	94.40	104.00	1	1	85.0	21.9	137.0
SMDJ90A	SMDJ90CA	D90A XXXX	D90CA XXXX	100.00	111.00	1	1	90.0	20.5	146.0
SMDJ100A	SMDJ100CA	D100A XXXX	D100CA XXXX	111.00	123.00	1	1	100.0	18.5	162.0
SMDJ110A	SMDJ110CA	D110A XXXX	D110CA XXXX	122.00	135.00	1	1	110.0	16.9	177.0
SMDJ120A	SMDJ120CA	D120A XXXX	D120CA XXXX	133.00	147.00	1	1	120.0	15.5	193.0
SMDJ130A	SMDJ130CA	D130A XXXX	D130CA XXXX	144.00	159.00	1	1	130.0	14.4	209.0
SMDJ150A	SMDJ150CA	D150A XXXX	D150CA XXXX	167.00	185.00	1	1	150.0	12.3	243.0
SMDJ160A	SMDJ160CA	D160A XXXX	D160CA XXXX	178.00	197.00	1	1	160.0	11.6	259.0
SMDJ170A	SMDJ170CA	D170A XXXX	D170CA XXXX	189.00	209.00	1	1	170.0	10.9	275.0
SMDJ180A	SMDJ180CA	D180A XXXX	D180CA XXXX	200.00	220.00	1	1	180.0	10.3	291.0
SMDJ190A	SMDJ190CA	D190A XXXX	D190CA XXXX	211.00	232.00	1	1	190.0	9.8	307.0
SMDJ200A	SMDJ200CA	D200A XXXX	D200CA XXXX	224.00	247.00	1	1	200.0	9.3	324.0
SMDJ220A	SMDJ220CA	D220A XXXX	D220CA XXXX	246.00	272.00	1	1	220.0	8.4	356.0

Notes:

(1) Waveform of SMDJ5.0A -SMDJ220CA are defined as per fig.3

Typical Characteristics

Figure 1. Peak Pulse Power Rating Curve

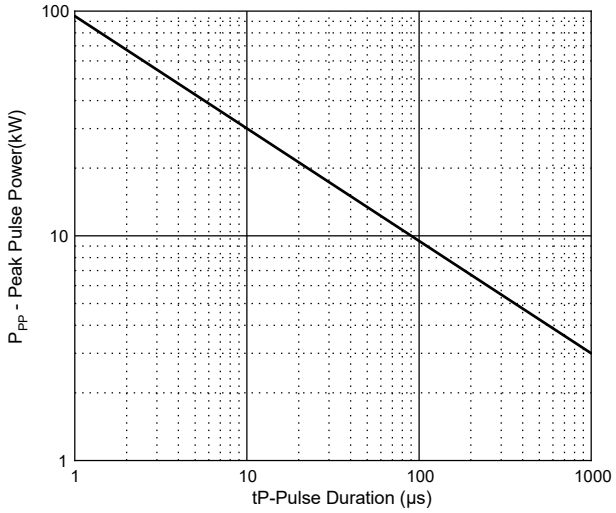


Figure 2. Pulse Derating Curve

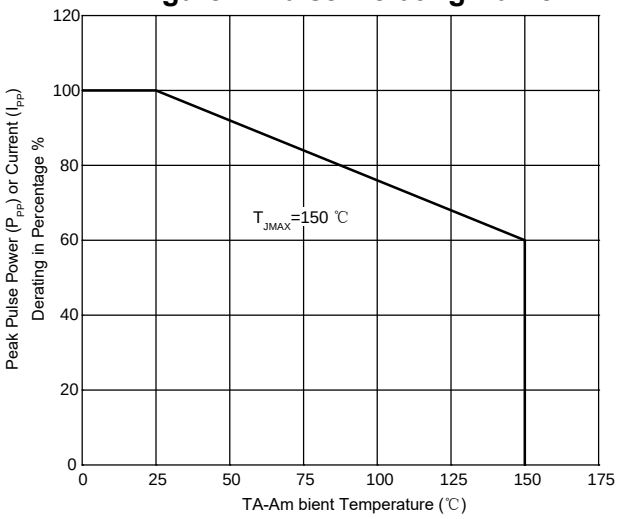


Figure 3. Pulse Waveform

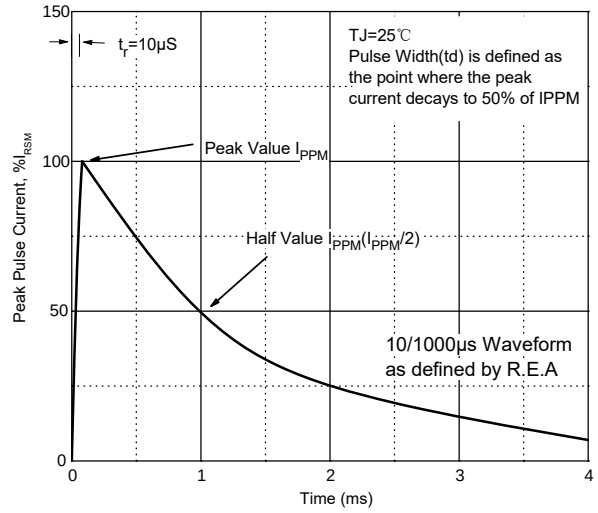


Figure 4. Typical Junction Capacitance

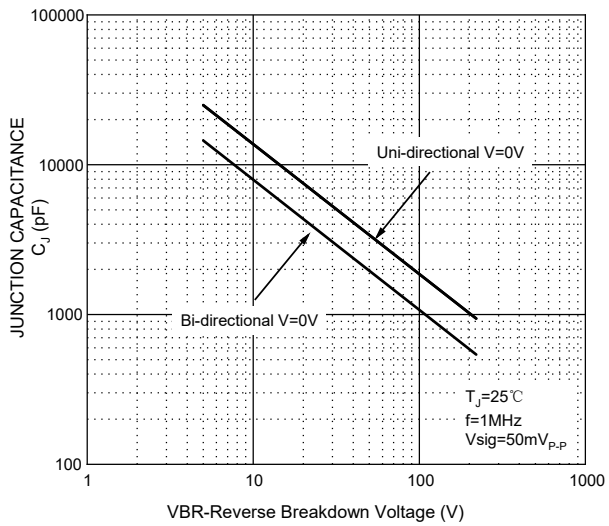


Figure 5. Steady State Power Dissipation Derating Curve

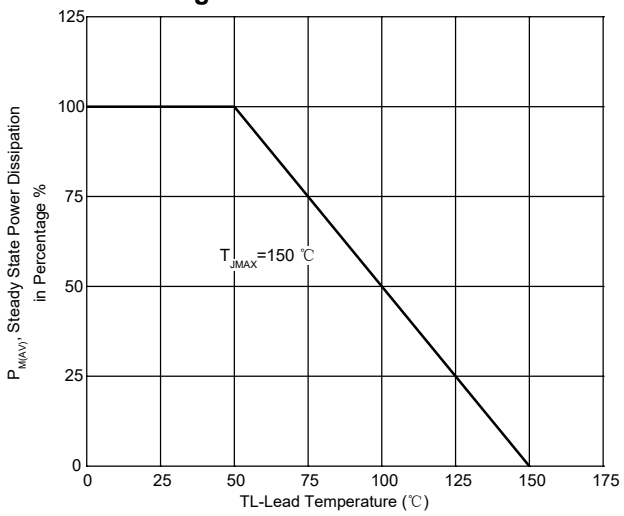
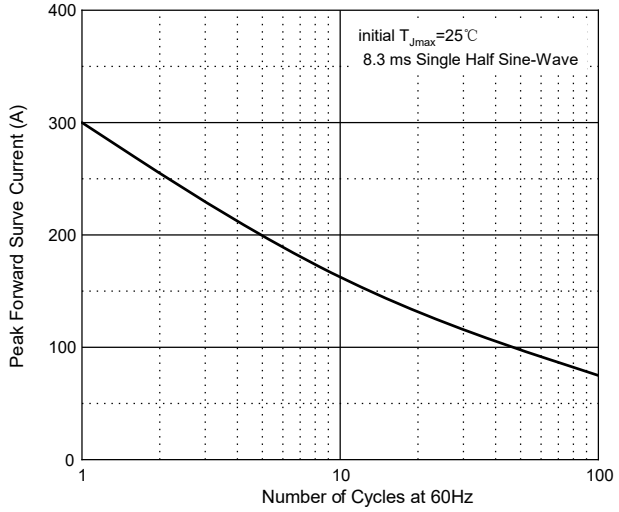
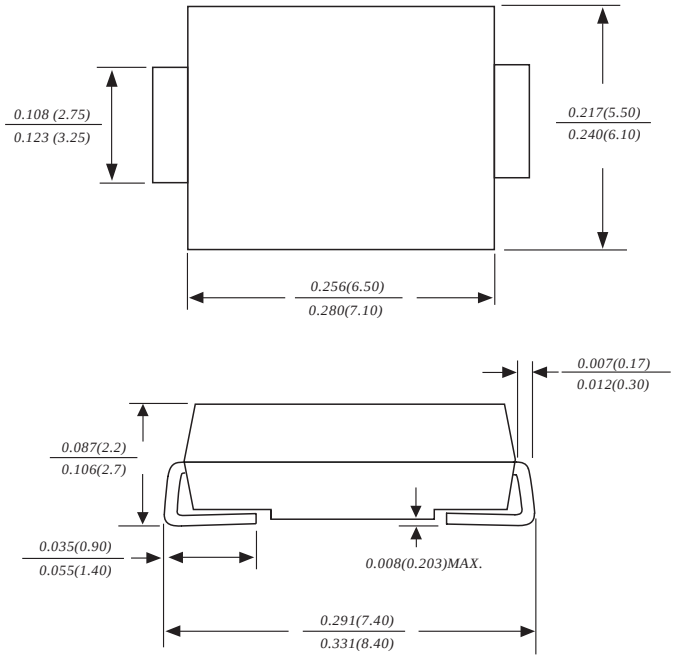


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

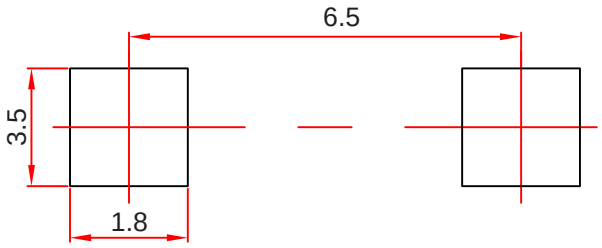


SMCG Package Outline Dimensions



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

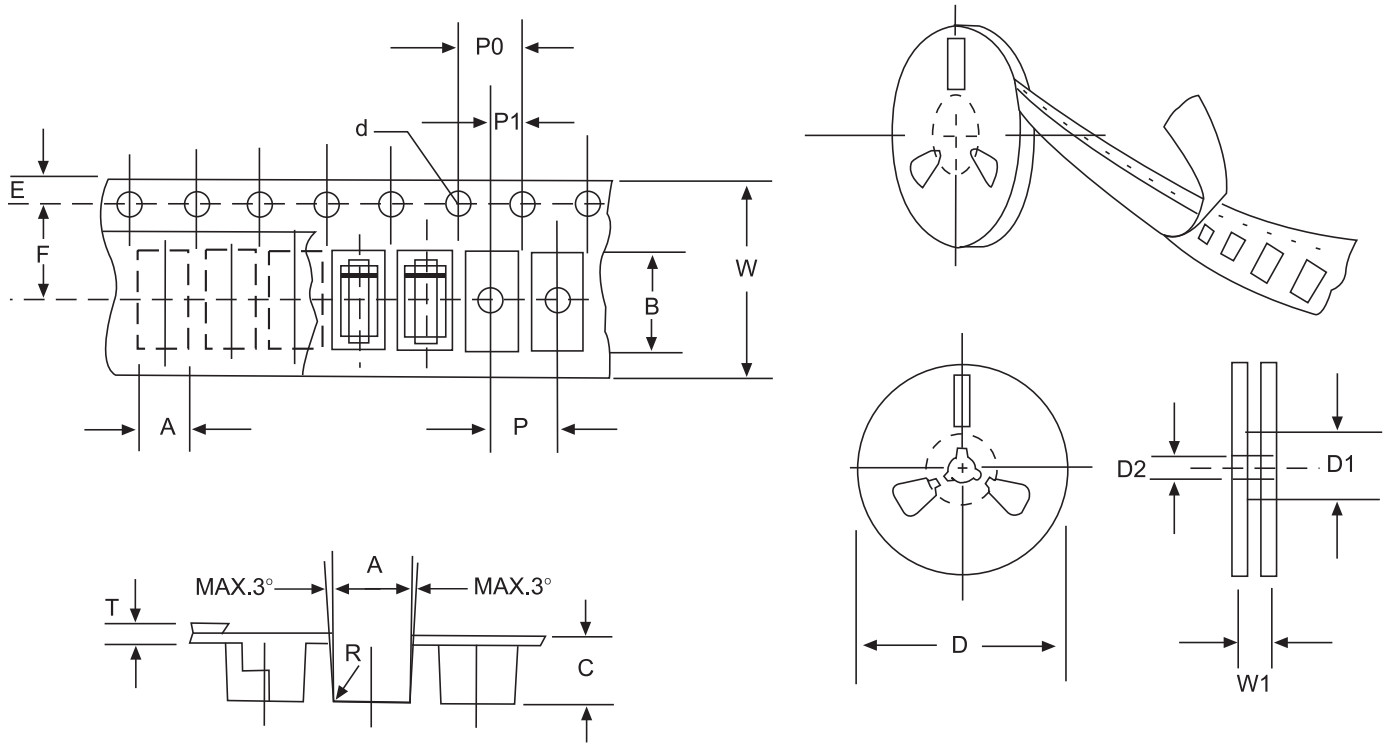


FIG:CONFIGURATION OF SURFACE MOUNTED DEVICES TAPING

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