

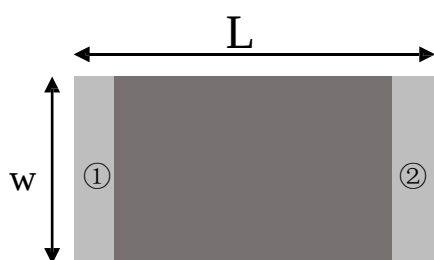
Features

1. Surface mounted devices with a small dimension of $1.6 \times 0.8 \times 0.8$ mm meet future miniaturization trend.
2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beautifying the housing of final product.
3. High stability and low tolerance.

Applications

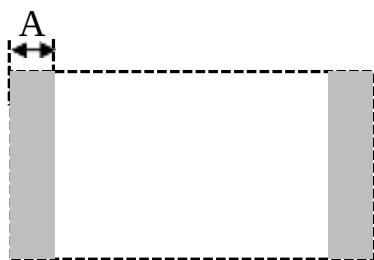
1. Bluetooth
2. Wireless LAN
3. ISM band 2.4GHz wireless applications

Dimensions (Unit: mm)

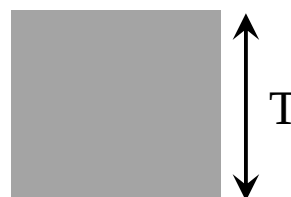


(Top View)

Number	Terminal Name
①	INPUT
②	NC



(Bottom View)



(Side View)

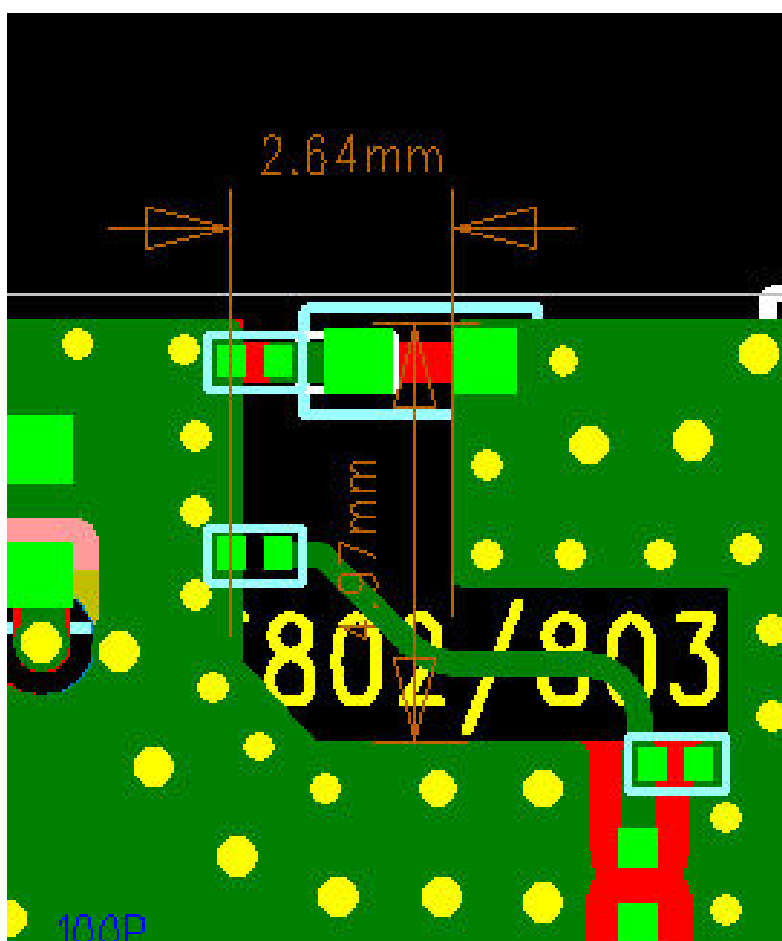
Symbols	L	W	T	A
Dimensions	1.60 ± 0.20	0.80 ± 0.20	0.80 ± 0.20	0.30 ± 0.10

Inverted-L Antenna Specification

Summary

ITEM	ANT SPEC					
Model Name	2.4G ANT					
Ant. Direction	Horizontal			Vertical		
	2400MHz	2450MHz	2500MHz	2400MHz	2450MHz	2500MHz
	-1.26	-0.76	-0.58	-5.25	-2.46	-1.86
Polarization	Horizontal and Vertical					
Azimuth Beam Pattern	Omni-directional					
Impedance	50 Ohm					
Antenna Length	34.10mm					
Manufacture	HY Antenna Co., Ltd.					

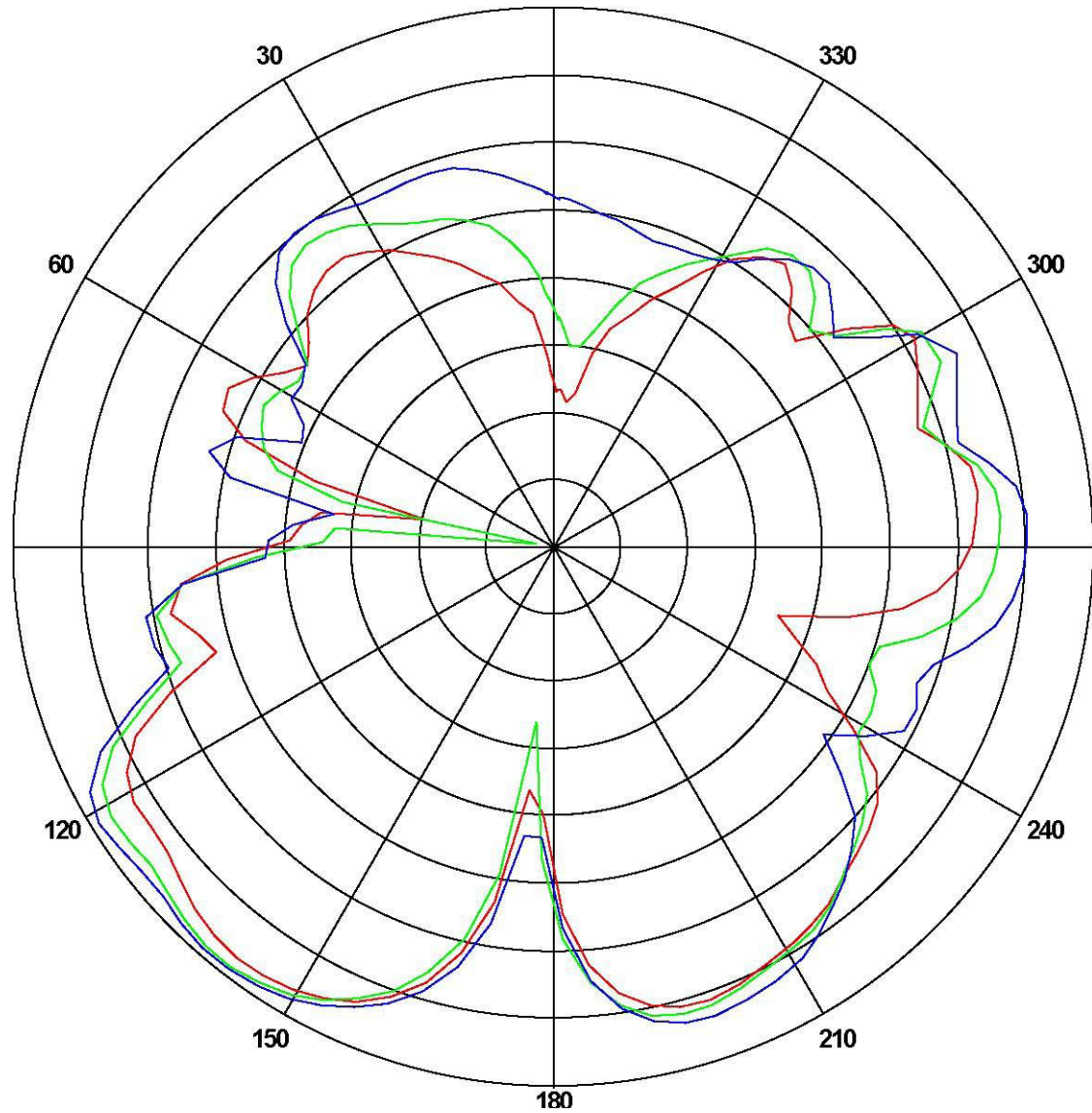
Antenna Photo & Length (mm)



Horizontal: 2400 MHz 2450 MHz 2500 MHz

Gain (dBi)

Max: 0 Min: -40 Scale: 5/div

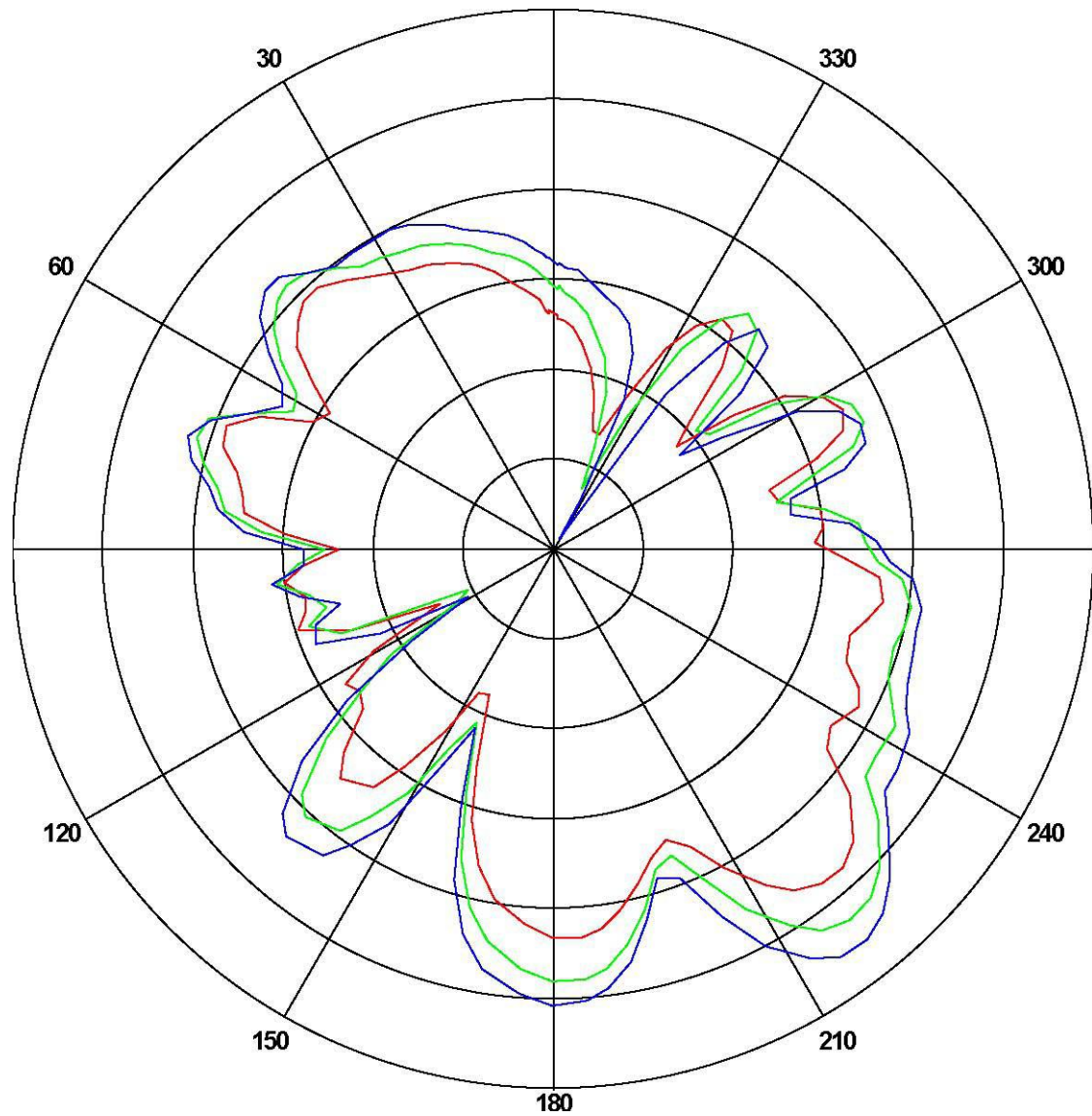


Frequency (MHz)	Gain(dBi)		
	Max	Min	Avg
2400	-1.26174	-30.0801	-7.18716
2450	-0.765802	-36.5604	-7.48023
2500	-0.585582	-22.0315	-6.59127

Vertical: 2400 MHz 2450 MHz 2500 MHz

Gain (dBi)

Max: 0 Min: -30 Scale: 5/div



Frequency (MHz)	Gain(dBi)		
	Max	Min	Avg
2400	-5.2537	-22.1424	-12.4294
2450	-2.4652	-24.5837	-10.4702
2500	-1.86120	-29.5214	-9.20432

ANT Test Labs: Attestation of Global Compliance Co., Ltd.

Dependability Test

Test Temperature	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Operating Temperature	$-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Temperature	$5 \sim 40^{\circ}\text{C}$
Relative Humidity	20~70%

Moisture Proof

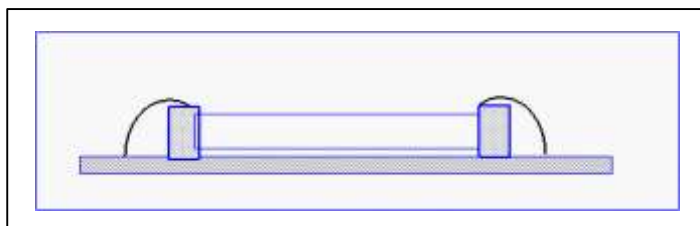
Temperature: $40 \pm 2^{\circ}\text{C}$ Humidity: 90~95%RH
Duration: 500h
Recovery conditions: Room temperature Recovery Time: 24h (Class1) or 48h (Class2)

Solderability

At least 95% of the terminal electrode is covered by new solder.
Preheating conditions: 80 to 120°C ; 10~30s.
Solder Temperature: $235 \pm 5^{\circ}\text{C}$ Duration: $2 \pm 0.5\text{s}$, Solder Temperature: $245 \pm 5^{\circ}\text{C}$ Duration: $2 \pm 0.5\text{s}$

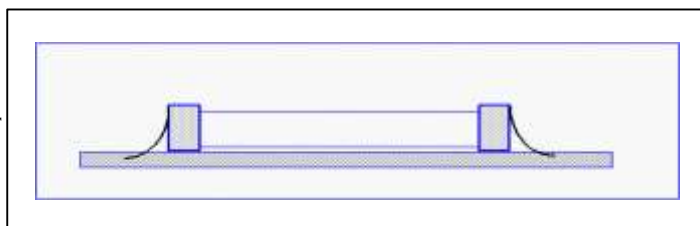
Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

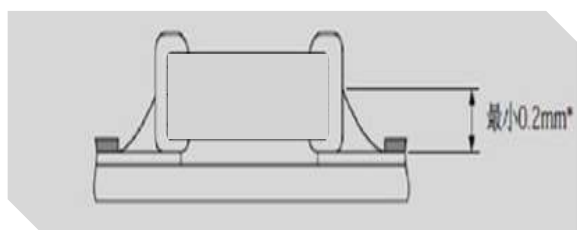
Not enough solder



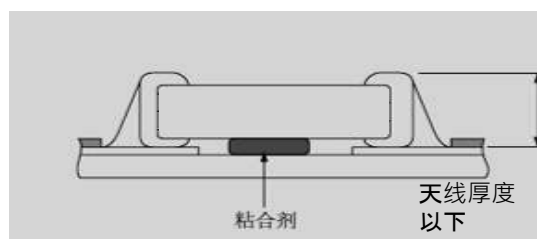
Weak holding force may cause bad connection between the chip and PCB.

Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



Temperature Cycle Test

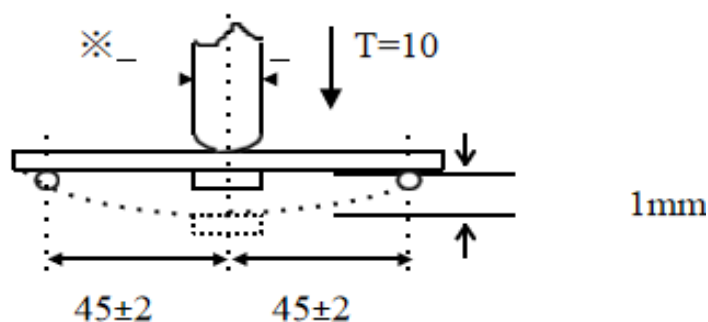
10±1S Applied Force: 5N Duration: 10±1S
 Preheating conditions: up-category temperature, 1h
 Recovery time: 24±1h
 Initial Measurement
 Cycling Times: 5 times, 1 cycle, 4 steps:

阶段	温度 (°C)	时间 (分钟)
第1步	下限温度($\text{NPO/X7R/X7S/X6S/X5R}:-55$ $\text{Y5V}:-25 \text{ Z5U}:-10$)	30
第2步	常温 (+20)	2~3
第3步	上限温度($\text{NPO/X7R/X7S}:+125$ $\text{Y5V/Z5U/X5R}:-85 \text{ X6S}:-105$)	30
第4步	常温 (+20)	2~3

Resistance to Soldering Heat

Preheating 80 to 120°C; 10~30s. Solder Temperature: 235±5°C; Duration: 2±0.5s; Solder Temperature: 245±5°C
 Duration: 2±0.5s; Preheating 100 to 200°C; 10±2min.
 Solder Temperature: 265±5°C; Duration: 10±1s
 Clean the capacitor with solvent and examine it with a 10X(min.) microscope.
 Recovery Time: 24±2h
 Recovery condition: Room temperature

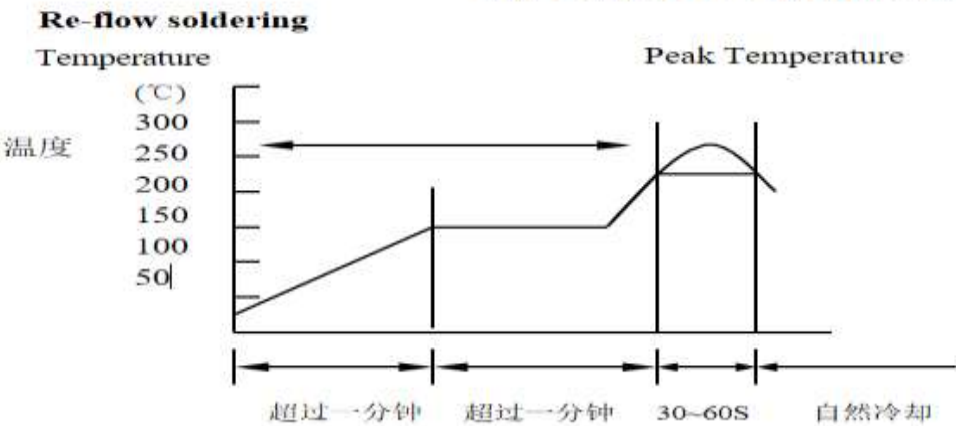
Resistance to Flexure of Substrate



Test Board: Al₂O₃ or PCB Warp: 1mm Speed: 0.5mm/sec.
 Unit: mm

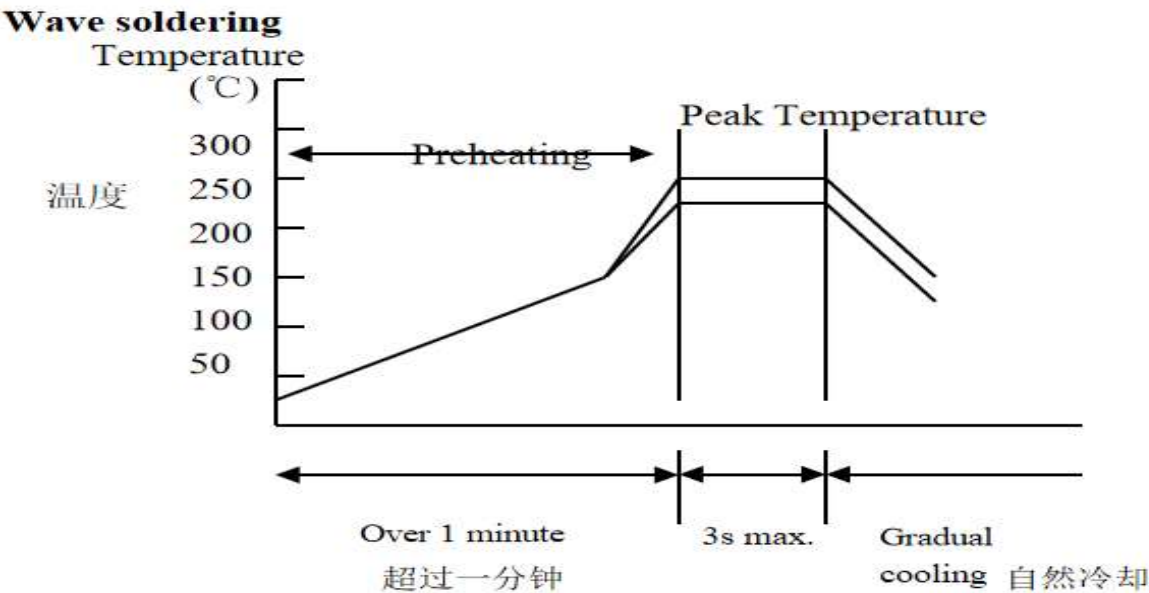
The measurement should be made with the board in the bending position.

The temperature profile for soldering



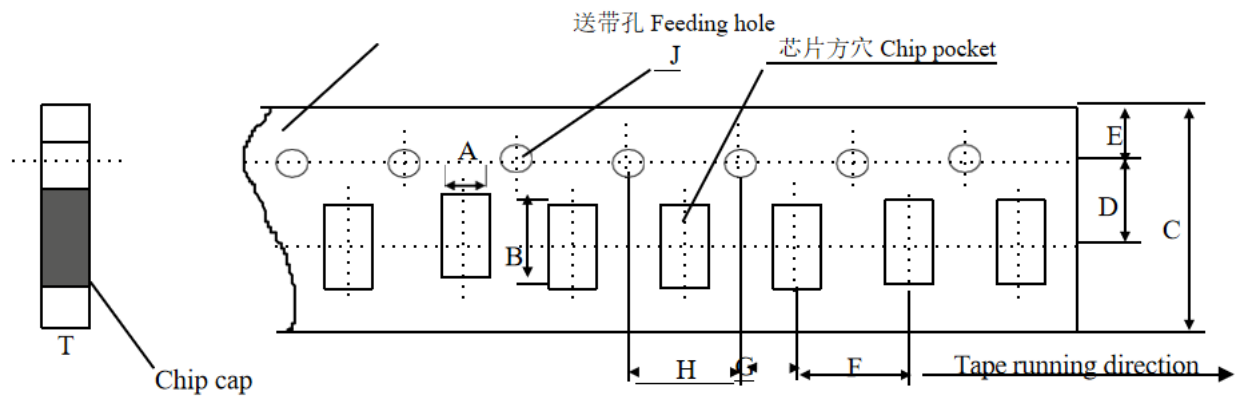
	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 Peak temperature	230℃~250℃	240℃~260℃

While in preheating, please keep the temperature difference between soldering temperature and surface temperature of chips as: $T \leq 150^{\circ}\text{C}$.



	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 Peak temperature	230℃~260℃	240℃~270℃

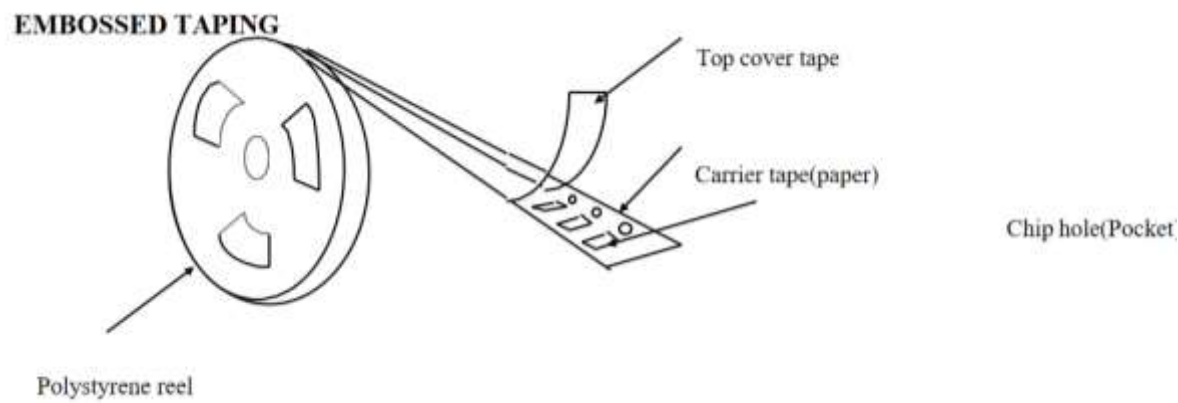
Dimensions of paper taping



Unit : mm

代号Code 纸带规格 papersize	A	B	C	D*	E	F	G*	H	J	T
尺寸	1.10 ±0.10	1.90 ±0.10	8.00 ±0.10	3.50 ±0.05	1.75 ±0.10	4.00 ±0.10	2.00 ±0.10	4.00 ±0.10	1.50 -0/+0.10	1.10 Max

Reel (4000 pcs/Reel)



Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition).
Temperature:5~40°C /Relative Humidity:20~70%