Approval Sheet

Part Name	PCA Antenna	DESCRIPTION
Part No.	ACCR-330B	
Model	PPU-BN0330BK1 (BT)	
Cresyn Code	CAF-0027-00000	
Revision	A	
Customer	CRESYN	
Supplier	PINCRAFT ENG.	

Mechanical Engineer	RF Engineer	RF Manager	Engineering Department Manager	Quality Manager
	내부 결재 완료			
JM.BAEK	KM.LEE	YP.PARK	SW.BANG	SY.SIM
2015-03-23	2015-03-23	2015-03-23	2015-03-23	2015-03-23

Pincraft Engineering Inc.

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◈ Development Issue (개발단계 주요 ISSUE 사항)

ISSUE DATE	ISSUE	REMARK
2015.03.23	승인원 제작	Rev 1.0

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1.REVISION HISTORY

No.	Date	Before	After	Revision	Rev

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2. Feature And Applications

This Chip antenna is applied to 2.4 GHz ISM band applications, i.e. wireless LAN, Bluetooth, Zigbee, etc..

3. CODE NO.

CODE NO. : ACCR-330B
CUSTOMER PART NO. : CAF-0027-00000

4. ELECTRICAL SPECIFICATIONS

4-1. FREQUENCY BAND

Bluetooth

4-2. TEST SPEC ON SET

* All items are measured in room temperature (25℃).
* All items are measured at customer set condition.

Frequency(Phone)	2400MHz	2500MHz
SET V.S.W.R	***1.3 ±0.5***	***3.3 ±0.5***
3D Gain average	***-1.6 ±0.5dB***	***-5.4±0.5dB***
Impedance	50Ω	

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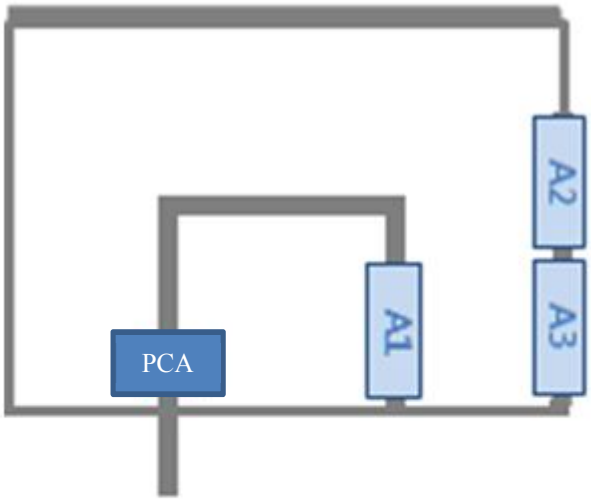
4.3 MATCHING REQUIREMENTS.

In order to assure the best performance of the antenna, the matching shall be evaluated in free space with the antenna vertically positioned. Pincraft shall give design support to the customer to obtain the optimum matching circuit for the antenna system.
The antenna shall comply with the Electrical Specification requirements, as set out below, while mounted on the customer supplied handset containing the PCB with the matching circuit. The handset with PCB is to be supplied by the customer and should be representative of the production parts. Any modifications in the handset or PCB can affect the performance of the antenna and should be discussed with Pincraft to determine the effect of such changes on antenna performance and delivery requirements.

PPU-BN0330BK1 Matching Network



A1	A2	A3
1.5pF	0.3pF	0.3pF

FIGURE 1. Matching Circuit

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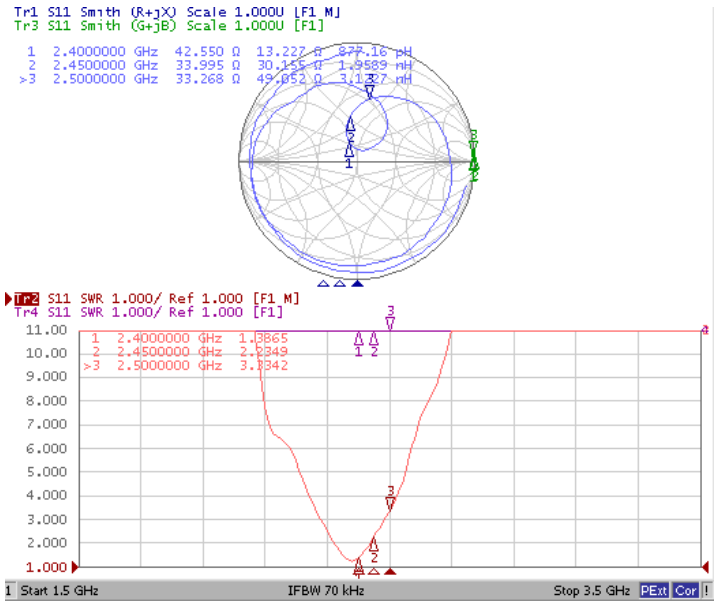
4-4 VSWR data (S11 of SET condition)



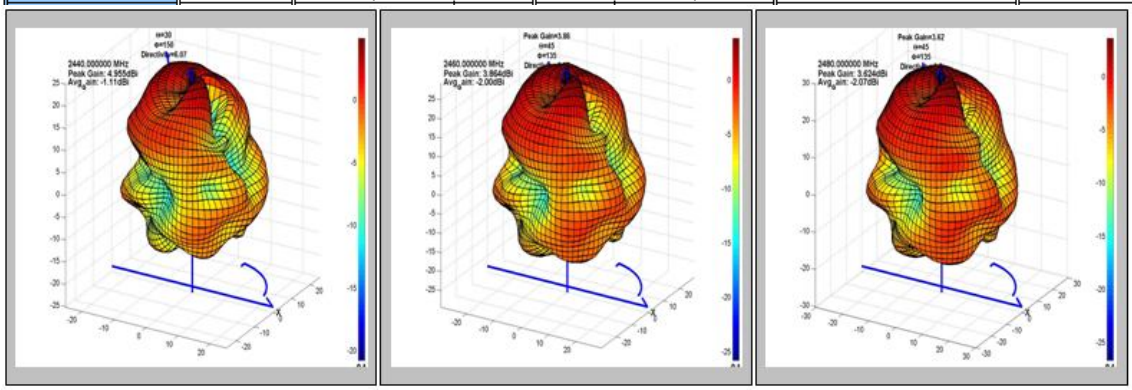
4-5 3D Gain & Radiation Patterns

Antenna Pattern & Gain Report

Manufacturer	Company Name
Model Name	Filename
Tester Name	Airlink
Test Date	2015-03-23 오후 1:07:30
IF BW	100 Hz
Port Power	0.00 dBm
Meas Step	15 `

Photo

Frequency	Efficiency	Average Gain			Max Gain			Max Position	Directivity
		Ver	Hor	Total	Ver	Hor	Total		
2380.000000 MHz	69.4 %	-10.2 dBi	-2.2 dBi	-1.6 dBi	-3.1 dBi	2.8 dBi	2.9 dBi	Theta120/Pie240	4.45 dB
2400.000000 MHz	72.0 %	-10.4 dBi	-2.0 dBi	-1.4 dBi	-3.3 dBi	2.7 dBi	2.8 dBi	Theta120/Pie255	4.24 dB
2420.000000 MHz	61.4 %	-11.2 dBi	-2.7 dBi	-2.1 dBi	-4.0 dBi	1.7 dBi	2.0 dBi	Theta90/Pie330	4.10 dB
2440.000000 MHz	56.7 %	-11.4 dBi	-3.1 dBi	-2.5 dBi	-4.4 dBi	1.4 dBi	1.6 dBi	Theta90/Pie330	4.07 dB
2460.000000 MHz	45.7 %	-11.9 dBi	-4.1 dBi	-3.4 dBi	-5.7 dBi	0.3 dBi	0.7 dBi	Theta105/Pie60	4.06 dB
2480.000000 MHz	31.5 %	-13.1 dBi	-5.8 dBi	-5.0 dBi	-7.1 dBi	-1.3 dBi	-0.8 dBi	Theta105/Pie60	4.21 dB
2500.000000 MHz	28.6 %	-13.1 dBi	-6.2 dBi	-5.4 dBi	-7.1 dBi	-1.6 dBi	-1.3 dBi	Theta105/Pie60	4.16 dB



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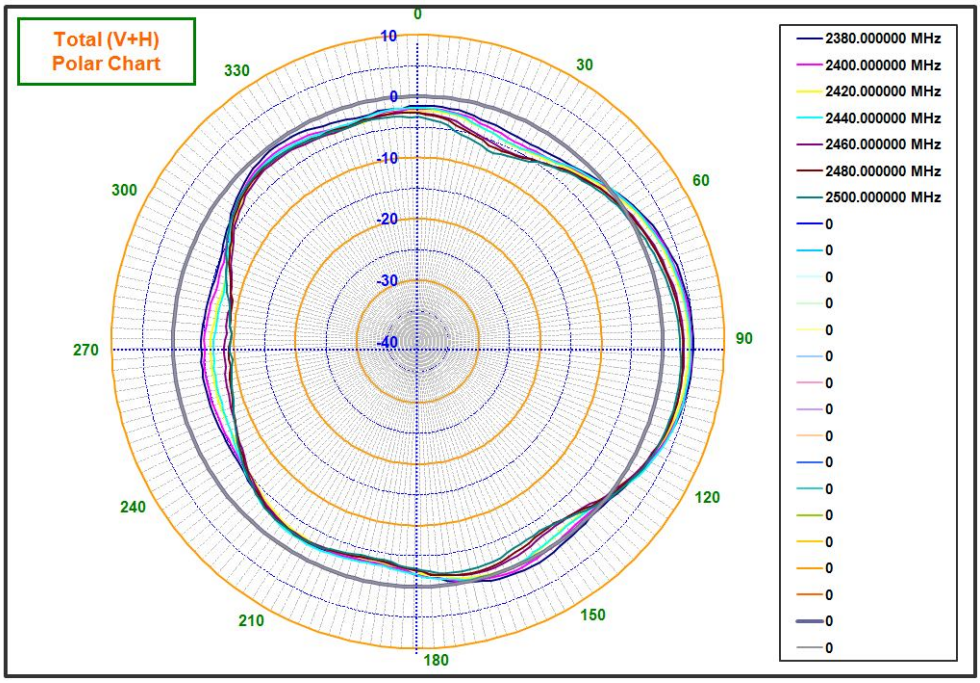
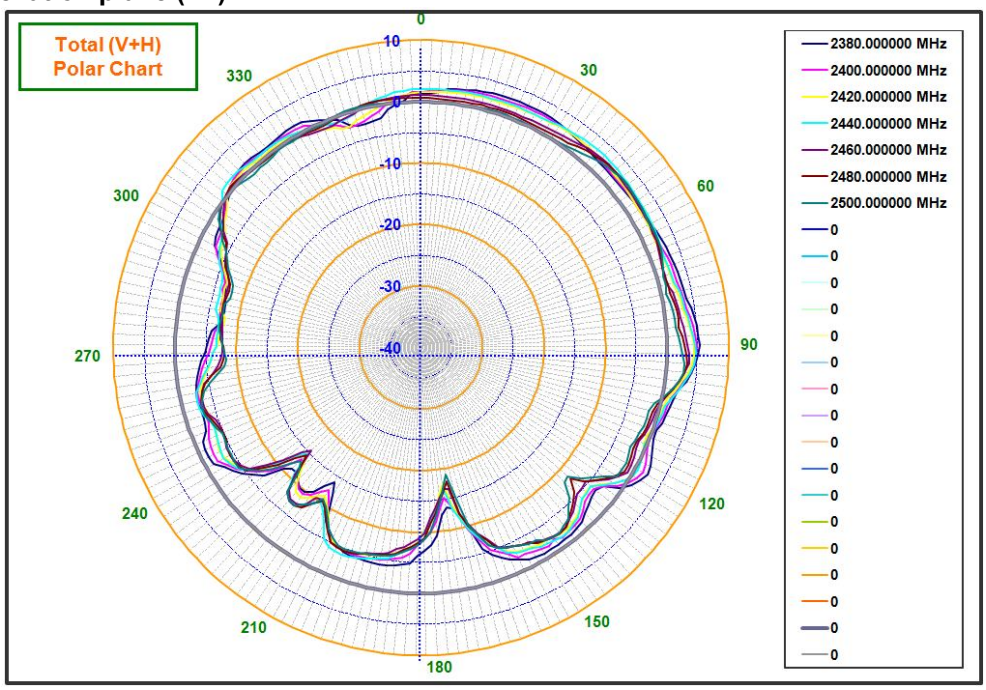
4-6 2D Radiation Patterns

(a) Azimuth plane (H-plane)



(b) Elevation plane (E1)



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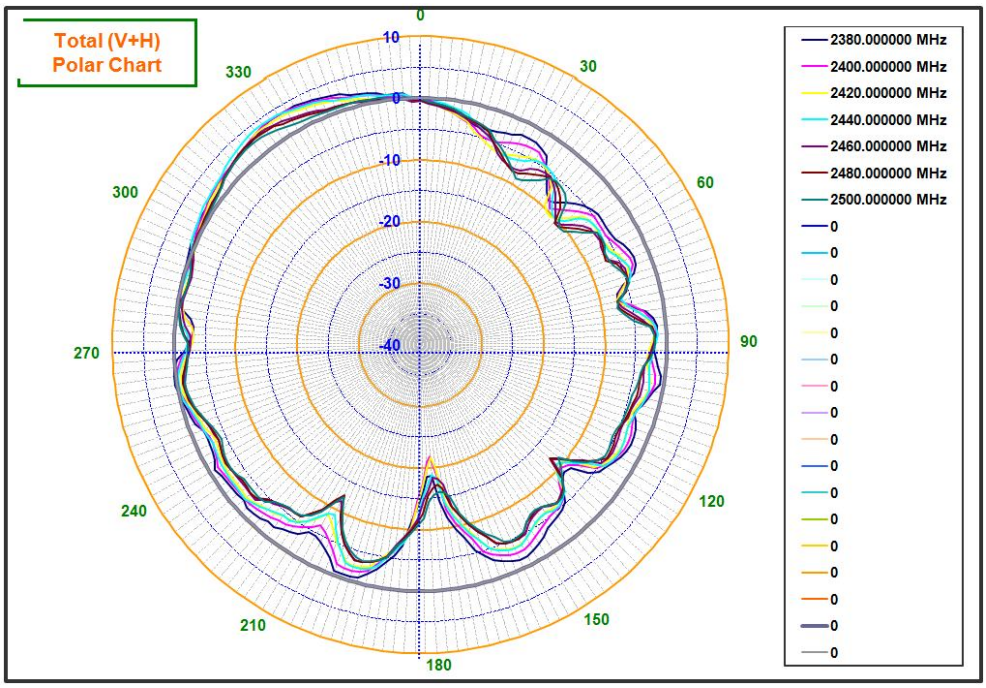
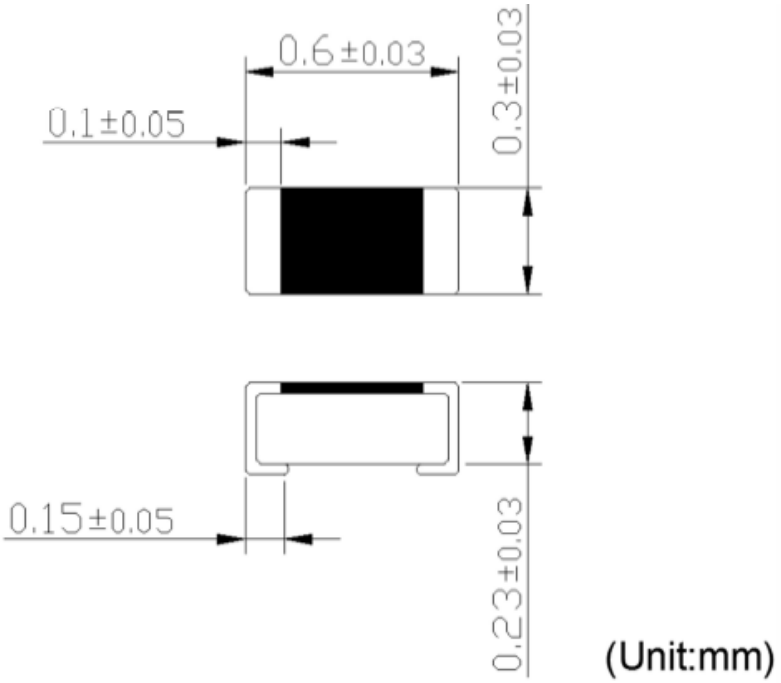
(c) Elevation plane (E2)



5. Mechanical Dimensions



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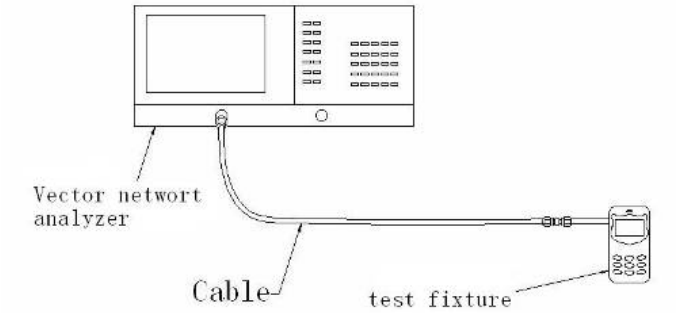
6.TEST METHOD

6.1 Test Method of Production

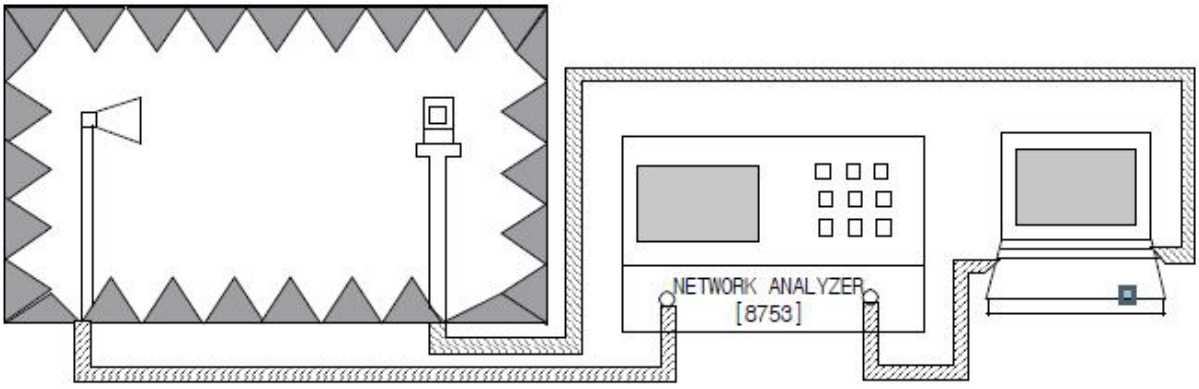
In mass production it is not practical to use the handset supplied by customer. Pincraft will design a production test fixture for use on the processes that require electrical testing. The results of the test fixture will be correlated to the results obtained on the customer handset.

6.2 The measurement of Frequency and VSWR



<Measurement Method>
1) As seen the above, network analyzer is set up for S11 measurement.
2) The measurement frequency range is to set up from 2 GHz to 3 GHz.
3) Perform S11 one port full calibration.
4) Measure the VSRW of three points of Bluetooth frequency range such as 2402 MHz, 2441 MHz, and 2480MHz.

6.3 The measurement of Gain and Radiation Patterns



<Measurement Method>
1) As seen the above, network analyzer is to set up in Anechoic chamber.
2) As seen the beneath, for the measurement planes as Azimuth, Elevation1, and Elevation2, measure Gain data of vertical polarization and horizontal polarization for each plane.

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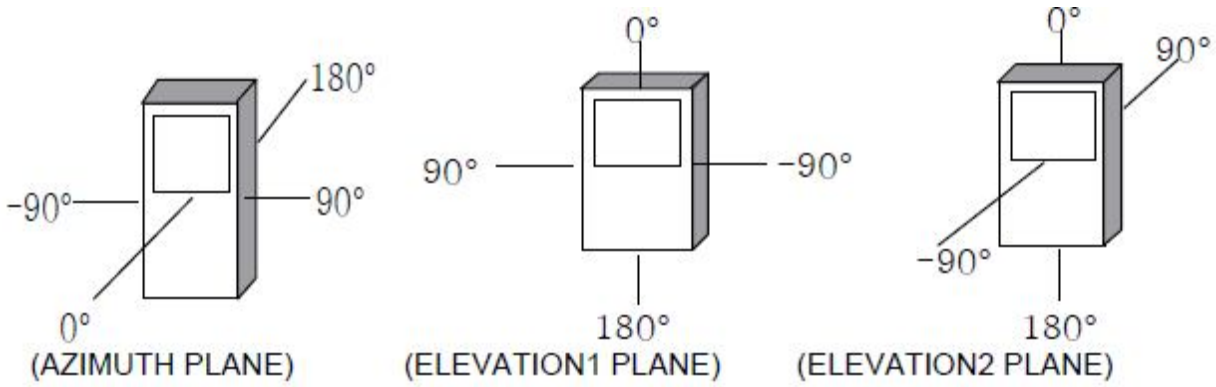
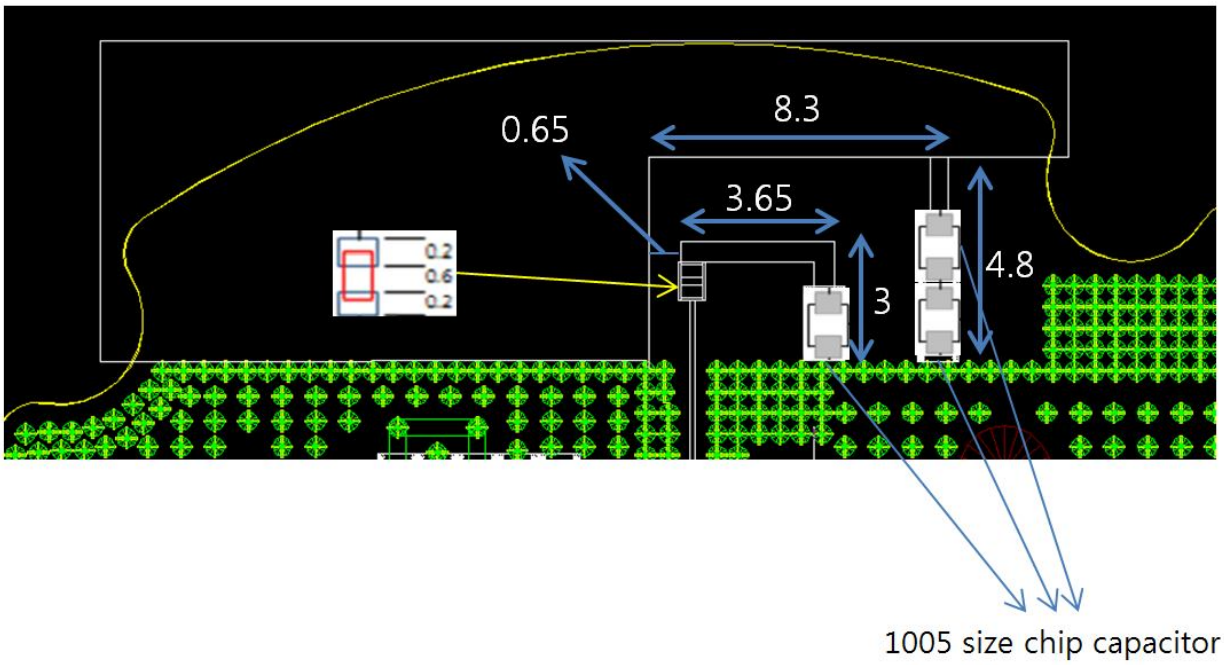


7. Recommended Soldering Patterns



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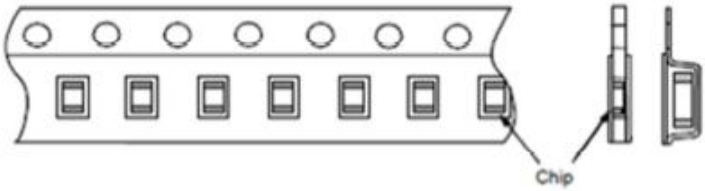
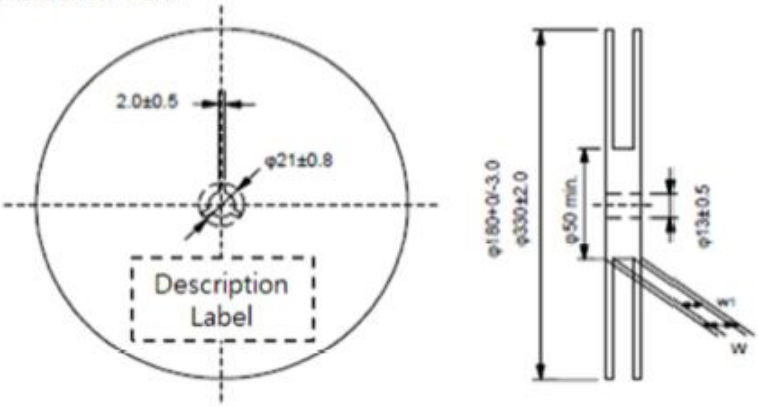
8. PACKAGING

1. Package Chips

(in mm)

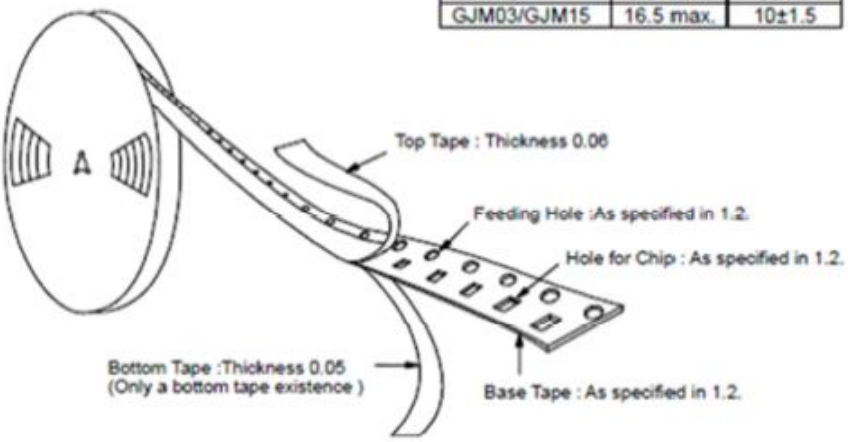


2. Dimensions of Reel



3. Taping Diagram

	W	W_1
GJM02	8.0 max.	5±1.5
GJM03/GJM15	16.5 max.	10±1.5



4. Description Lable

Company Name	Pincraft Engineering INC.
Products names	PPU-BN0330BK1 (PCA-ANT)
Pincraft Code	ACCR-330B
Cresyn Code	CAF-0027-00000
QTY	
Producing Date	2014 Years 0 month 00 date
Attention : must be well protected against Dampness, shock, press and handle with Care	

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