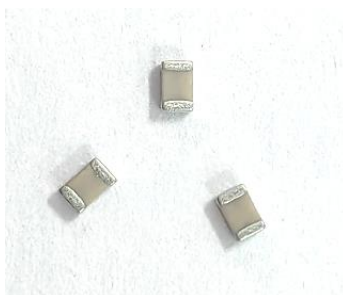


2.0X1.2X0.65 (mm) WiFi/Bluetooth Ceramic Chip Antenna (YF2012C1) Engineering Specification

1. Product Number

YF	2012	C1	P	2G45
1	2	3	4	5



(1)Product Type	Chip Antenna
(2)Size Code	2.0x1.2x0.65mm
(3)Type Code	C1
(4)Packing	Paper &Reel
(5)Frequency	2.45GHz



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Designed by : **Jason**

Checked by : **Jason**

Approved by : **MR.FANG**

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2. Features

- *Stable and reliable in performances
- *Low temperature coefficient of frequency
- *Low profile, compact size
- *RoHS compliance
- *SMT processes compatible

3. Applications

- *Bluetooth earphone systems
- *Hand-held devices when WiFi /Bluetooth functions are needed, e.g., Smart phone.
- *IEEE802.11 b/g/n
- *ZigBee
- *Wireless PCMCIA cards or USB dongle

4. Description

Yingfeng chip antenna series are specially designed for WiFi/Bluetooth applications. Based on yingfeng proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications (80 x 40 mm² ground plane)

5-1. Electrical Table

Characteristics		Specifications	Unit
Outline Dimensions		2.0x1.2x0.65	mm
Working Frequency		2400~2500	MHz
VSWR		2 Max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	2.5 (typical)	dBi
	Efficiency	75 (typical)	%



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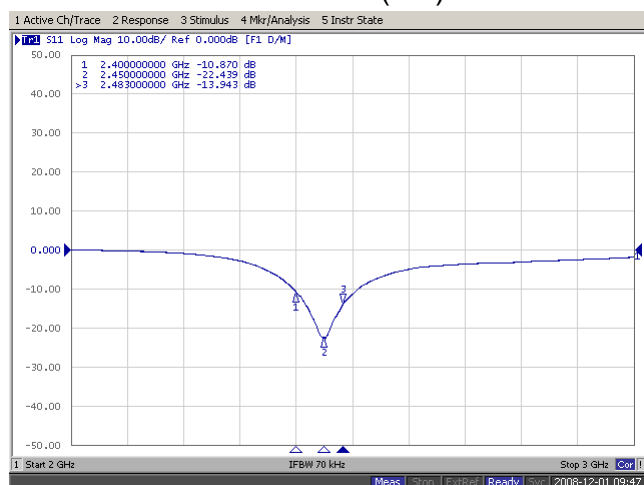
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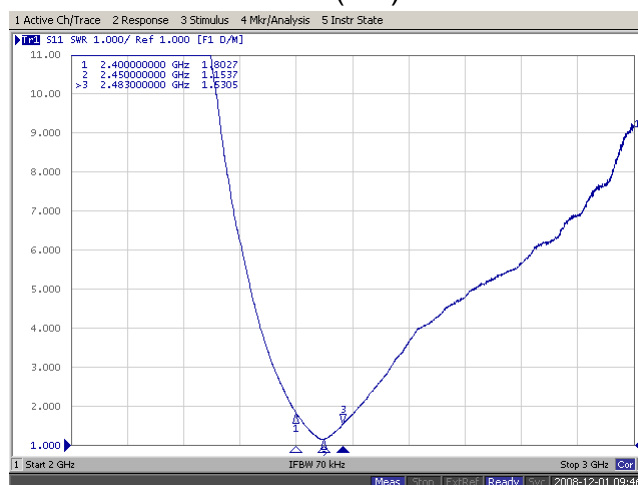
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5-2. Return Loss & VSWR

Return Loss (S_{11})

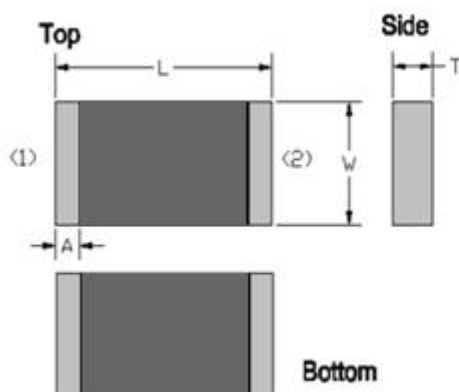


VSWR(S_{11})



6. Antenna Dimensions & Test Board (unit: mm)

a. Antenna Dimensions



Dimension (mm)	
L	2.05+0.15
W	1.20+0.15
T	0.65+0.10
A	0.20+0.10

No.	Terminal Name
1	Feeding/GNG
2	GND/Feeding

P.S : Top & down and left & right side are symmetrical, No direction



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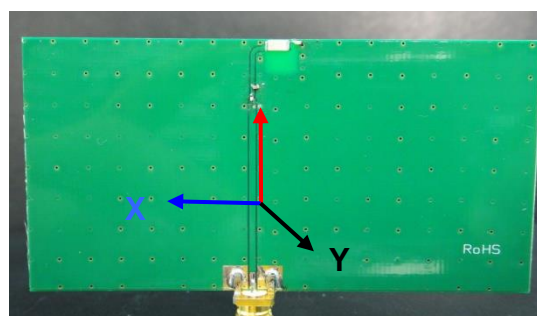
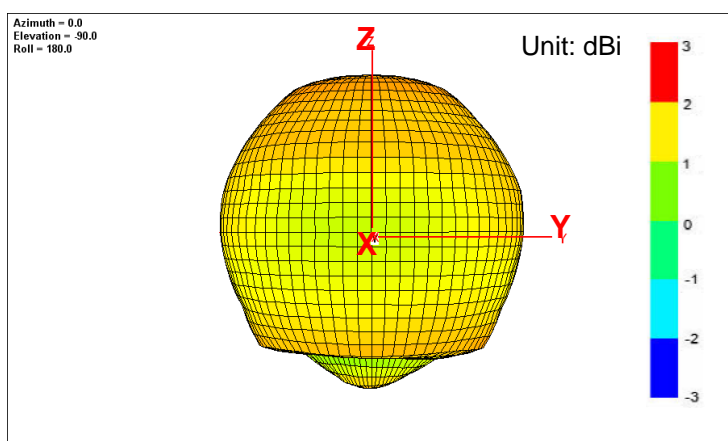
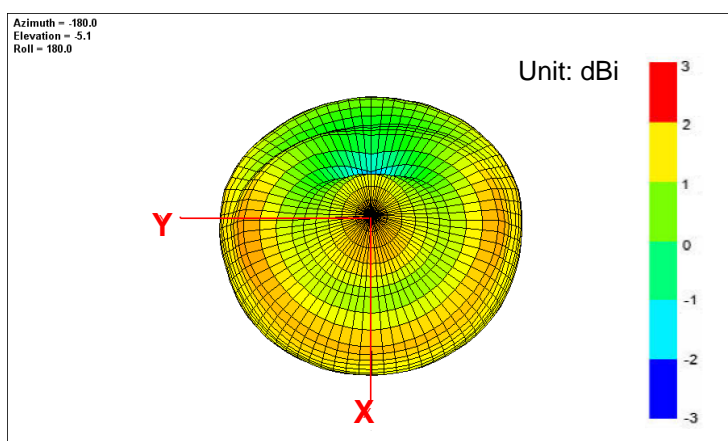
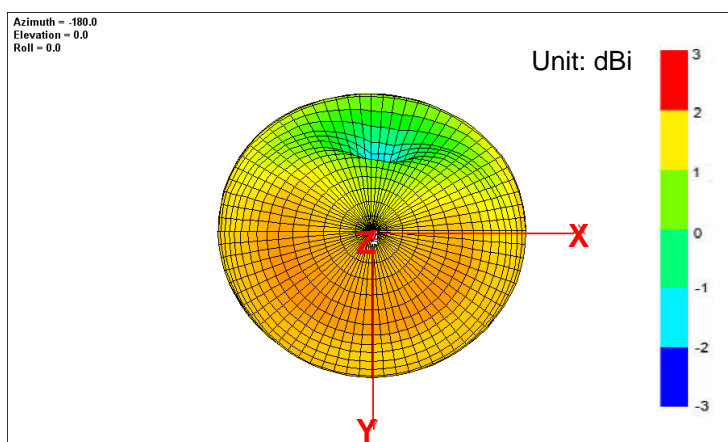
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7. Radiation Pattern (80 x 40 mm² ground plane)

7-1. 3D Gain Pattern @ 2442 MHz



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7-2. 3D Efficiency Table

Frequency(MHz)	2400	2410	2420	2430	2442	2450	2460	2470	2480	2490	2500
Efficiency (dB)	-1.4	-1.0	-0.9	-0.7	-0.7	-0.8	-0.9	-1.1	-1.2	-1.3	-1.4
Efficiency (%)	72.8	73.7	74.3	74.4	75.5	75.0	74.0	73.6	73.1	72.6	71.5
Gain (dBi)	2.1	2.2	2.3	2.4	2.5	2.5	2.4	1.8	1.7	1.6	1.4

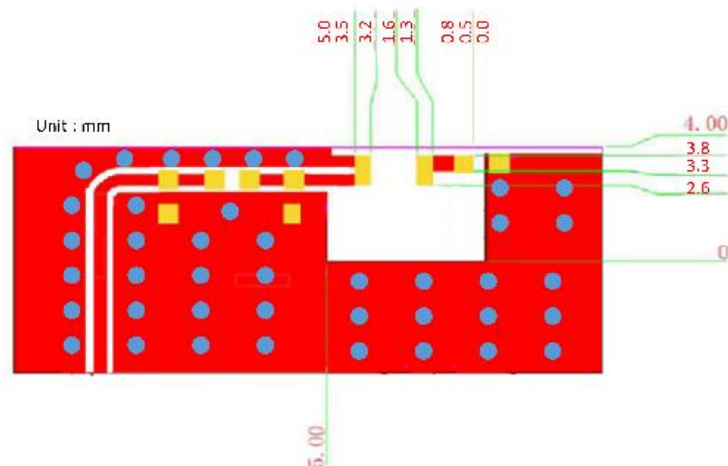
8. Layout Guide

a. Solder Land Pattern:

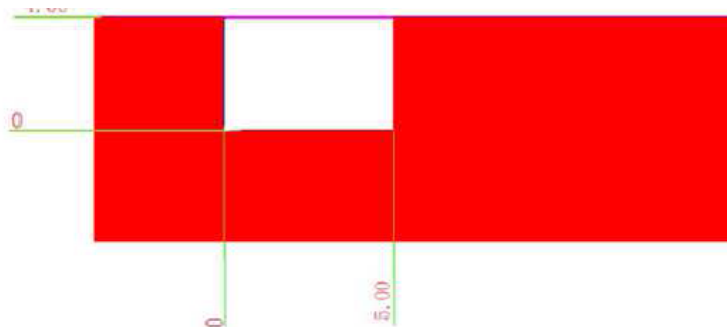
Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.

2). PCB Top View :

Type1 :



Top View



Bottom View

Unit : mm



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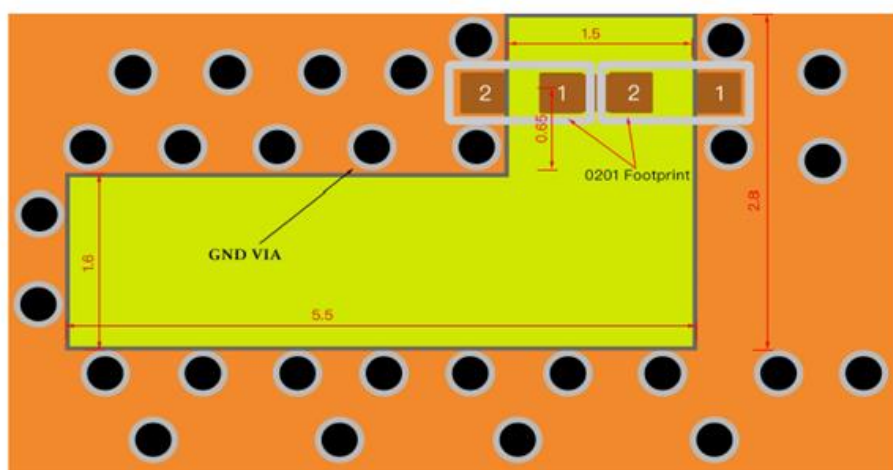
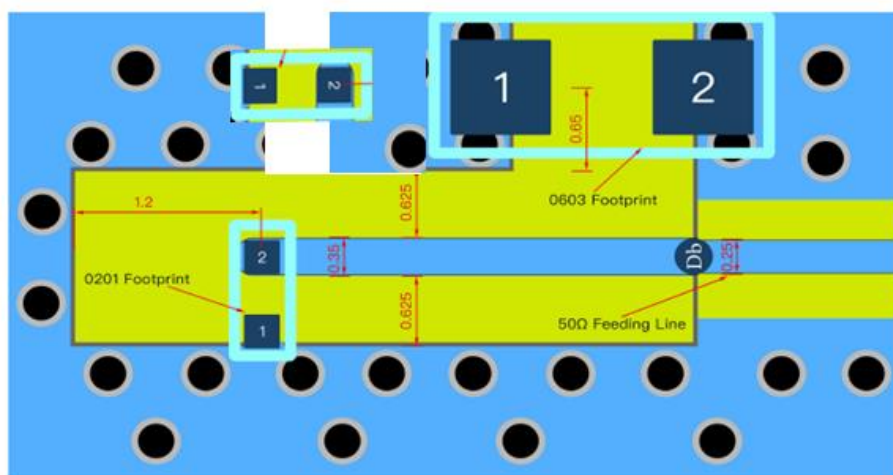
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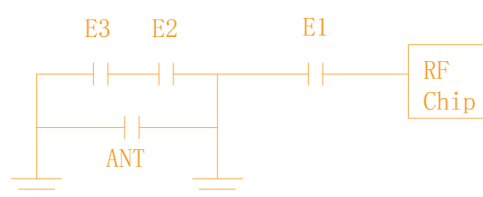
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b. Test Board with Antenna



原理图



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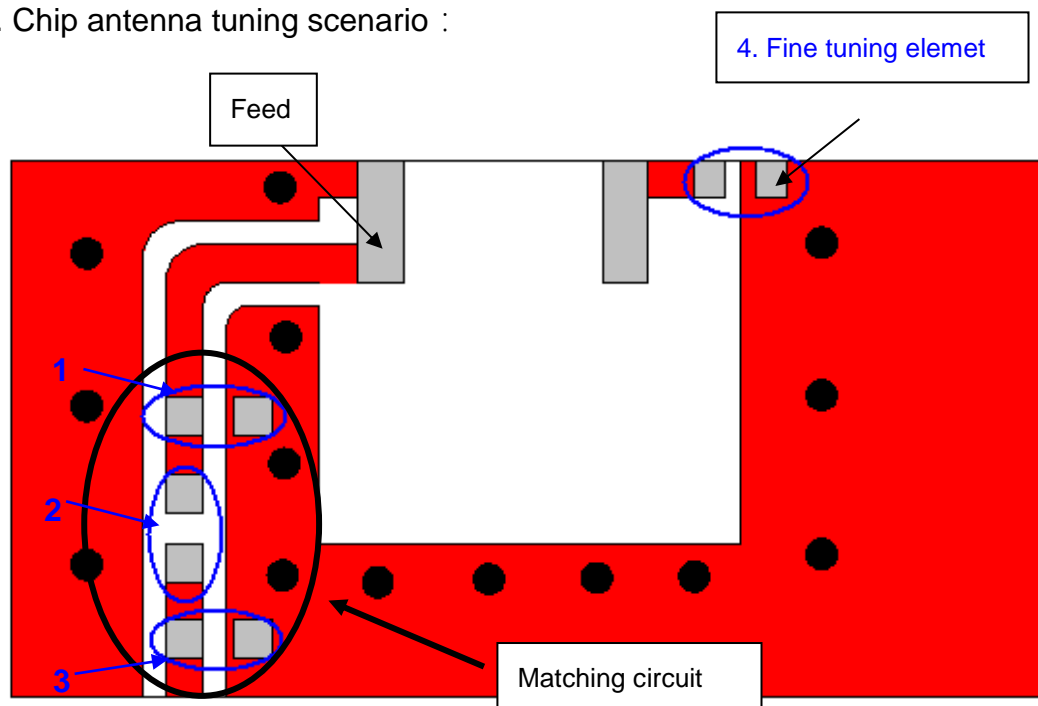
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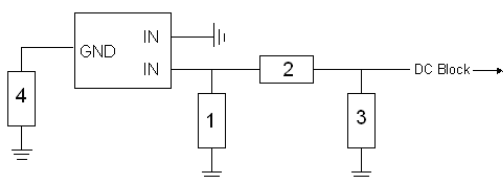
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9. Frequency tuning

a. Chip antenna tuning scenario :



b. Matching circuit : (Center frequency is about 2442 MHz @ 80 x 40 mm² ground plane)



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	1.2 pF*	Murata (0402)	±0.1 pF
2	10PF*	Murata(0402)	±0.5 PF
3	N/A*	-	-
Fine tuning element 4	10 pF*	Murata (0402)	±0.1 pF

*Typical reference values which may need to be changed when circuit boards or part vendors are different.

c. Fine tuning element vs. Center frequency



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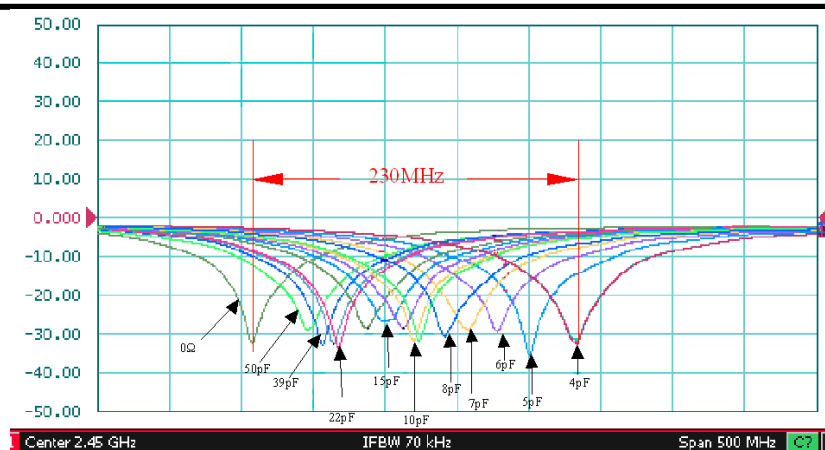
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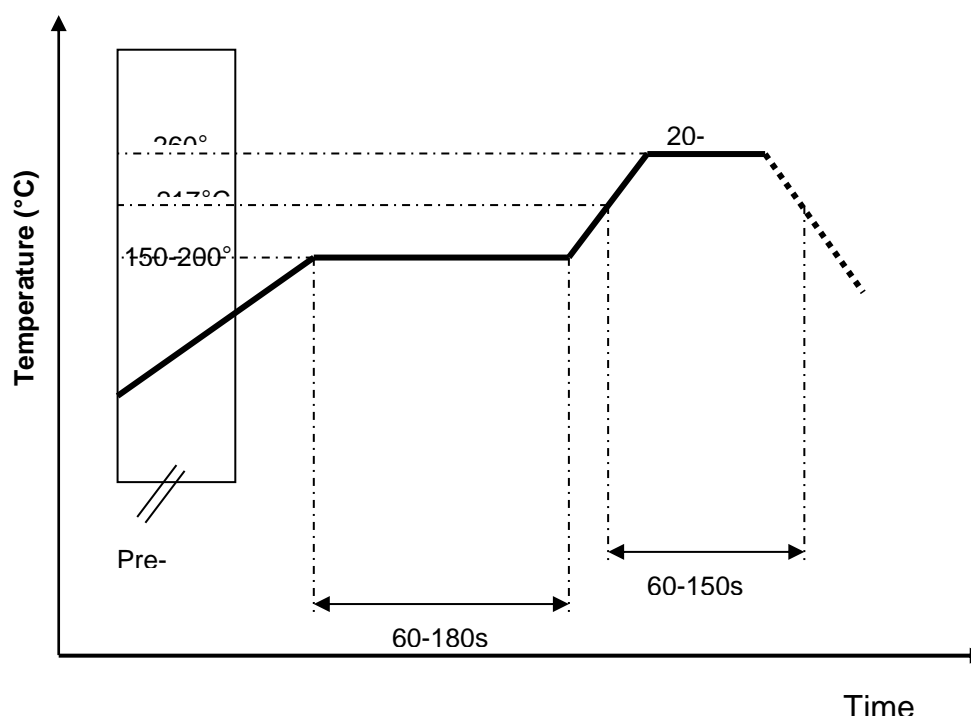
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10. Soldering Conditions

a. Typical Soldering Profile for Lead-free Process



11. Packing

- (1) Quantity/Reel: 4000 pcs/Reel
- (2) Plastic tape:



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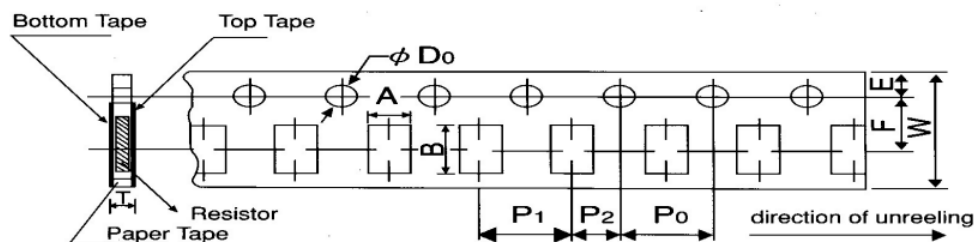
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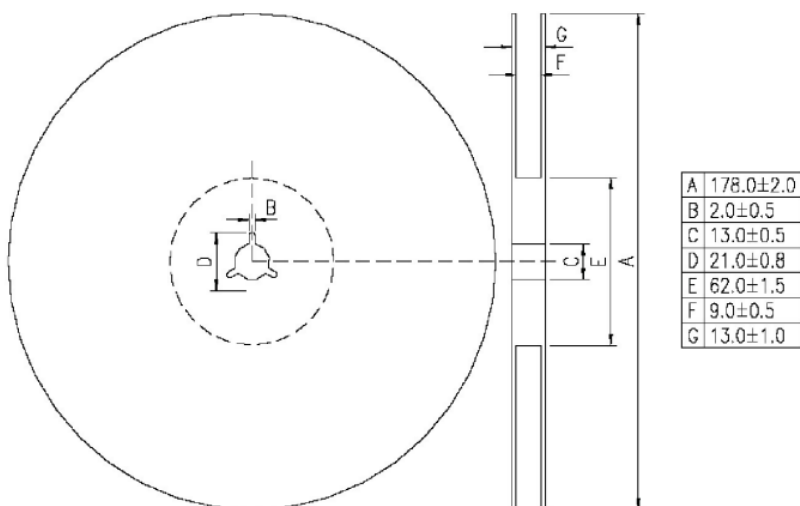
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Packing	Style	A	B	W	F	E	P ₁	P ₂	P ₀	D ₀	T
Paper	2012	1.6±0.15	2.4±0.2	8.0±0.2	3.5±0.05	1.75±0.1	4.0±0.1	2.0±0.05	4.0±0.1	$\psi 1.5^{+0.1}_{-0}$	0.84±0.1

(3) Taping reel dimensions



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