

ACA-5036-A2-CC-S Specification

1. APPLICATION:

WLAN, 802.11b/g, Bluetooth, etc...

2. Explanation of part number :

$\frac{AC}{(1)} \quad \frac{A}{(2)} - \frac{5036}{(3)} - \frac{A2}{(4)} - \frac{CC}{(5)} - \frac{S}{(6)} \quad \bar{(7)}$

- (1) Product Type : Chip Antenna
- (2) Center Frequency/Band Code : A--2.45GHz group
- (3) Size Code: 5.0mm(Length) x 3.6mm(Width)
- (4) Design Revision Code: Rev.2
- (5) CC= Coupling Ceramics Type
- (6) Special Code: S=RoHS Compliant
- (7) Suffix For Special Requirements

3. Electrical Specification :

ITEM		SPECIFICATION
Frequency Band		2.40GHz~2.50GHz
VSWR		Less than 2.5
Polarization		Linear
*Peak Gain	Layout A	3 dBi Typ.
	Layout B	2.1 dBi Typ.
*Peak Efficiency	Layout A	80% Typ.
	Layout B	74% Typ
Impedance		50Ω Typ.

* Test condition: Test board size 80*40 mm

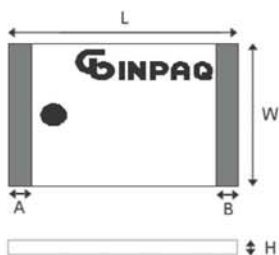
Matching circuit: Pi matching circuit will be required

Address: No. 11, Keyi Street, adjacent to Gongyi Lane, Zhunan Town, Miaoli County, Taiwan, 350402

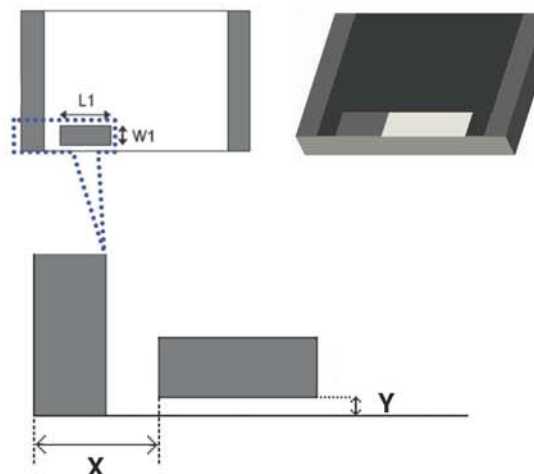
UNLESS OTHER SPECIFIED TOLERANCES ON : X=± X.X=± X.XX=± ANGLES=± HOLEDIA=±			INPAQ TECHNOLOGY CO., LTD.	
SCALE : -----	UNIT : mm			
DRAWN BY : 吳為盛 <i>Wu Wei Sheng</i>	CHECKED BY : 楊奇峯 <i>Yang Qi Feng</i>	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION		
DESIGNED BY : 謝立庭 <i>Xie Li Ting</i>	APPROVED BY : 蘇志銘 <i>Su Zhi Ming</i>			
TITLE : ACA-5036-A2-CC-S Specification		DOCUMENT NO.	ENS000023010	SPEC REV. A6

4. Physical Dimension : (Unit:mm)

TOP view



Bottom view



Chip Antenna	L	W	A	B	L1	W1	H	X	Y
ACA5036	5.2±0.3	3.7±0.3	0.45±0.25	0.45±0.25	1.1±0.20	0.55±0.20	0.70±0.15	0.85±0.25	0.12±0.06

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X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±

SCALE : -----

UNIT : mm

DRAWN BY : 吳為盛 *wid*

CHECKED BY : 楊奇峯 *Keung*

DESIGNED BY : 謝立庭 *Li*

APPROVED BY : 蘇志銘 *Jim*

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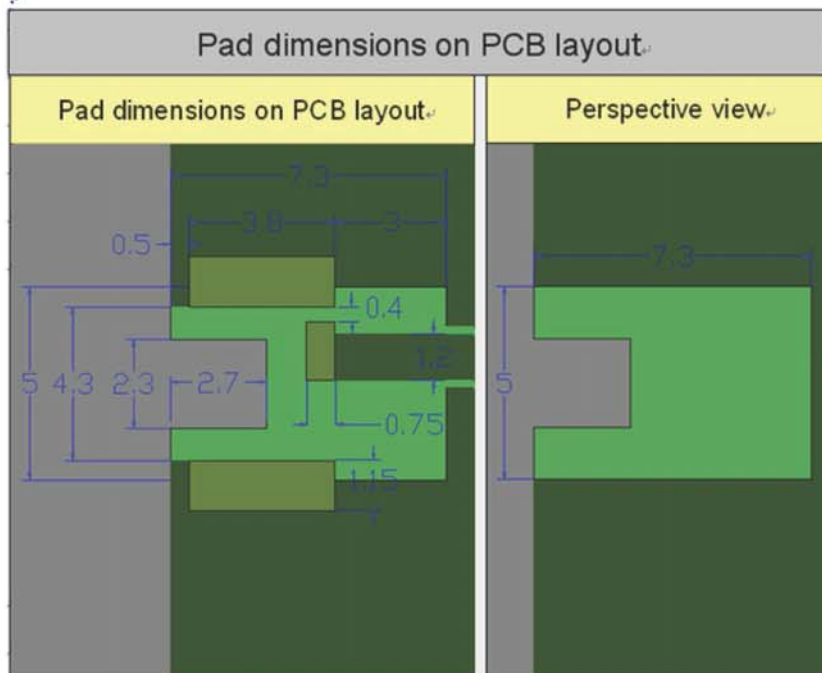
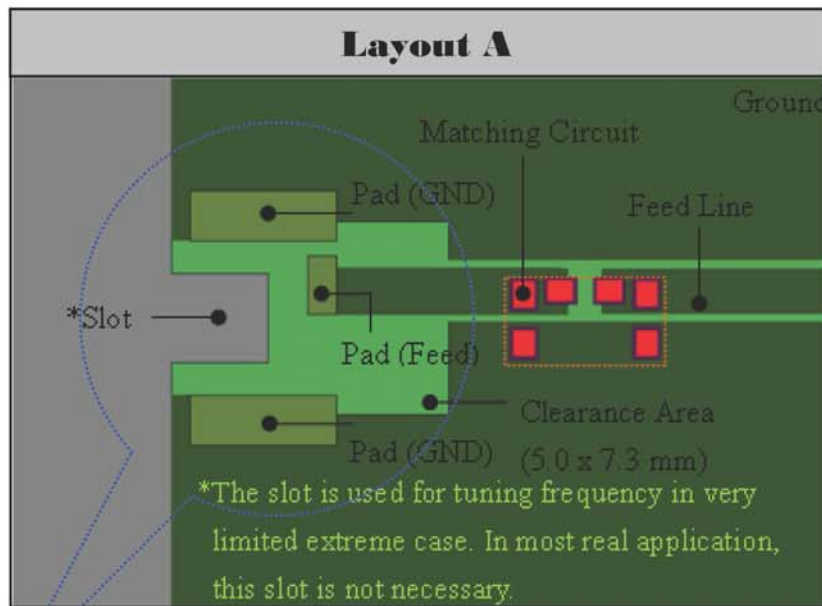
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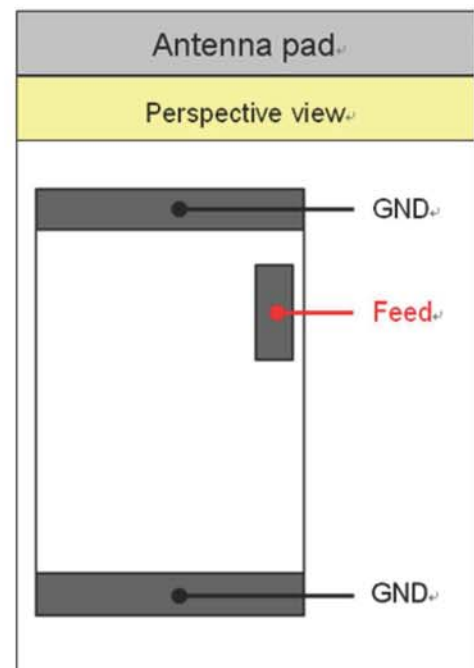
A6

5. Recommend PCB Layout : (Unit:mm)



PCB pad dimensions

Terminal name	Terminal Dimensions
Pad (Feed)	1.65 X 0.75
Pad (GND)	3.8 X 1.15
Pad (GND)	3.8 X 1.15



Antenna pad dimensions

Terminal name	Terminal Dimensions
Feed	1.1 X 0.55
GND	3.7 X 0.45
GND	3.7 X 0.45

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 ANGLES=± HOLEDIA=±

SCALE : ----- UNIT : mm

DRAWN BY : 吳為盛 *Wu Wei Sheng* CHECKED BY : 楊奇峯 *Yang Qi Feng*

DESIGNED BY : 謝立庭 *Xie Li Ting* APPROVED BY : 蘇志銘 *Su Zhi Ming*

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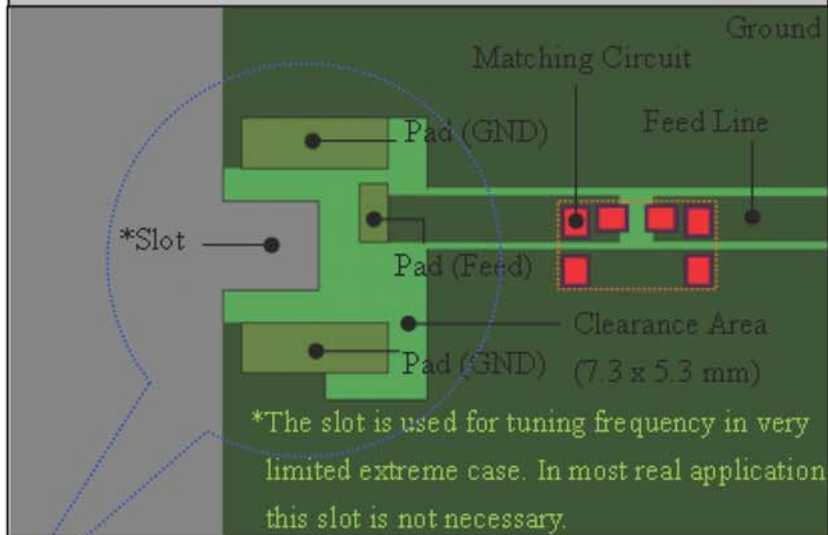
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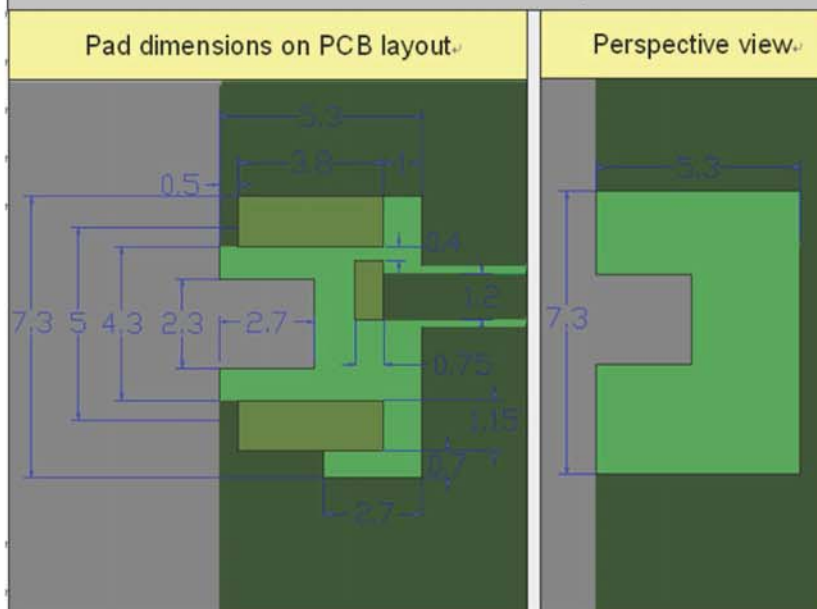
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Layout B



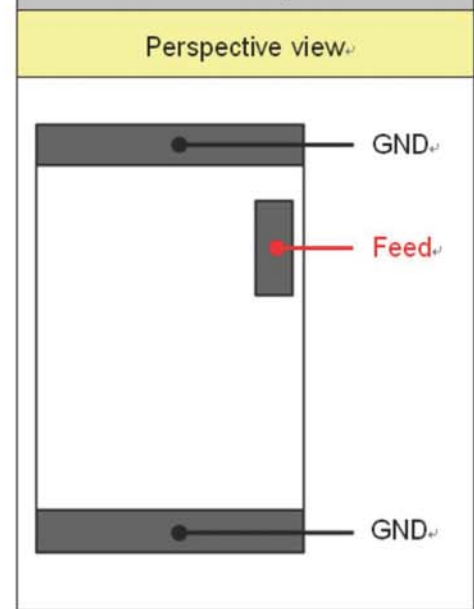
Pad dimensions on PCB layout



PCB pad dimensions

Terminal name	Terminal Dimensions
Pad (Feed)	1.65 X 0.75
Pad (GND)	3.8 X 1.15
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Antenna pad



Antenna pad dimensions

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 ANGLES=± HOLEDIA=±

SCALE : ----- UNIT : mm

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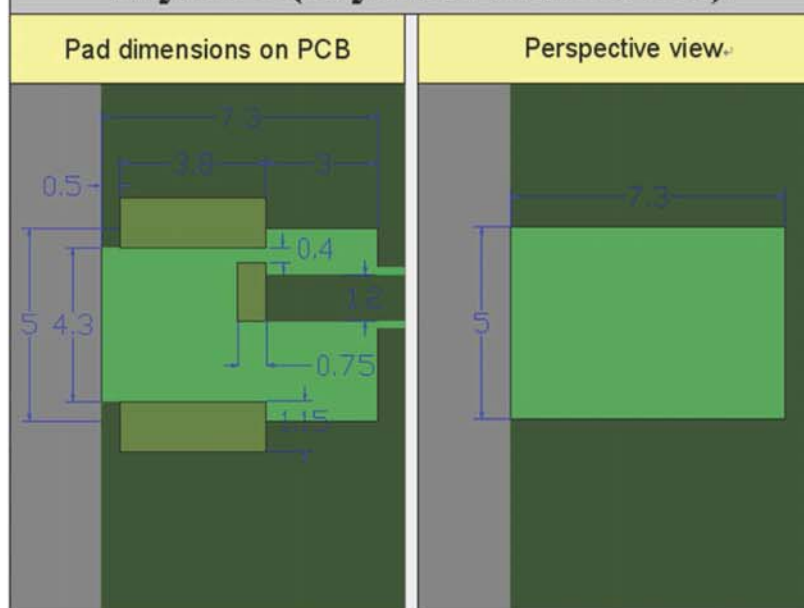
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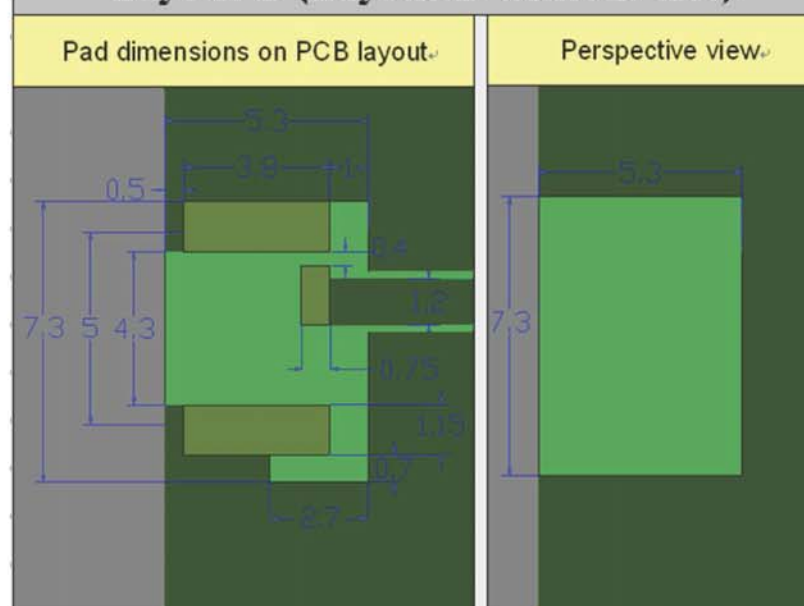
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Layout C (Layout A without slot)



Layout D (Layout B without slot)



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



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SCALE : -----

UNIT : mm

DRAWN BY : 吳為盛 *Wu Wei Sheng*

CHECKED BY : 楊奇峯 *Yang Qi Feng*

DESIGNED BY : 謝立庭 *Xie Li Ting*

APPROVED BY : 蘇志銘 *Su Zhi Ming*

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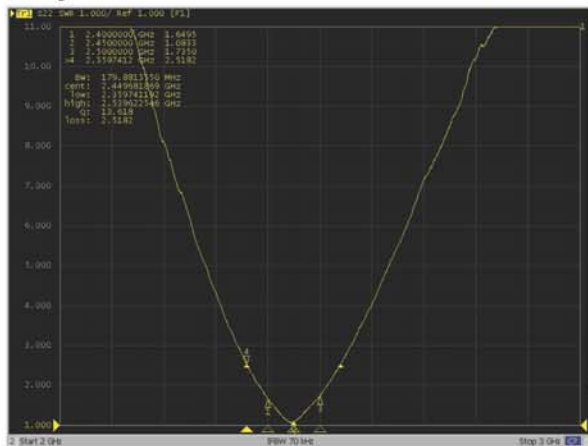
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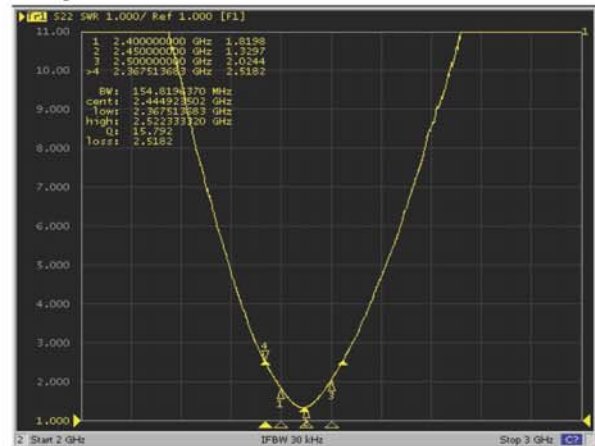
6. Electrical Characteristics :

Layout A : VSWR



Mark	Frequency	VSWR
1	2400 MHz	1.65
2	2450 MHz	1.08
3	2500 MHz	1.73

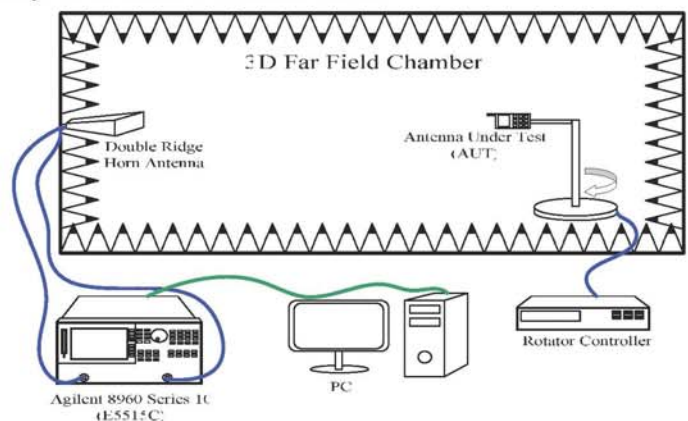
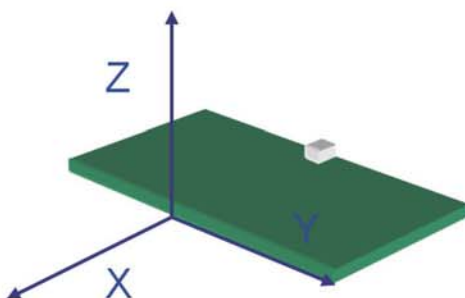
Layout B : VSWR



Mark	Frequency	VSWR
1	2400 MHz	1.82
2	2450 MHz	1.33
3	2500 MHz	2.02

Radiation Pattern

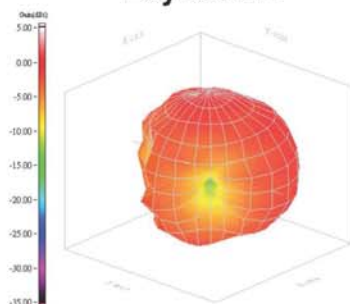
The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



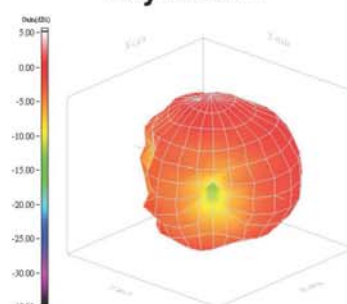
3D Chamber Definition

© 3D Gain Pattern (2450 MHz)

Layout A :



Layout B :



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±

SCALE : -----

UNIT : mm

DRAWN BY : 吳為盛

CHECKED BY : 楊奇峯

DESIGNED BY : 謝立庭

APPROVED BY : 蘇志銘

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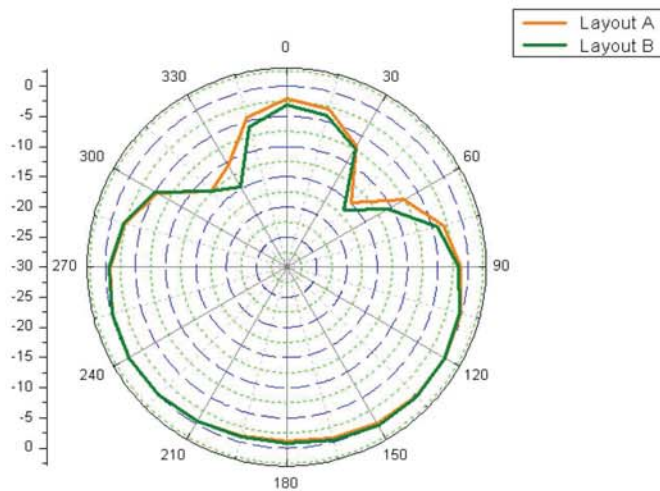
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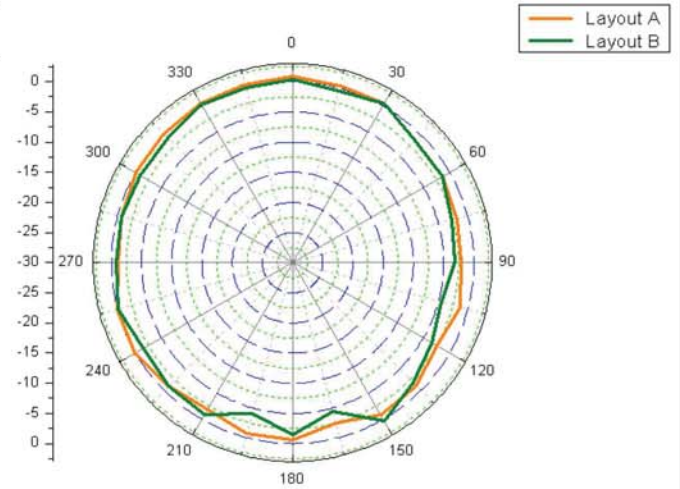
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◎ 2D Gain Pattern (2450 MHz)

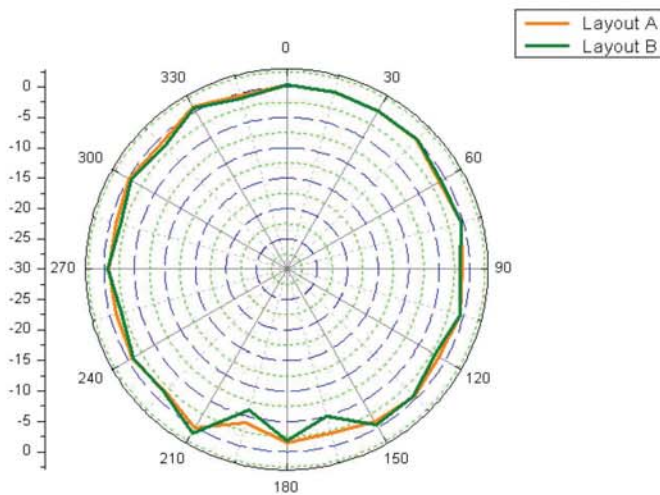
X-Y Plane



X-Z Plane



Y-Z Plane



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X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±

SCALE : -----

UNIT : mm

DRAWN BY : 吳為盛 *wid*

CHECKED BY : 楊奇峯 *Kenny*

DESIGNED BY : 謝立庭 *LT*

APPROVED BY : 蘇志銘 *Jim*

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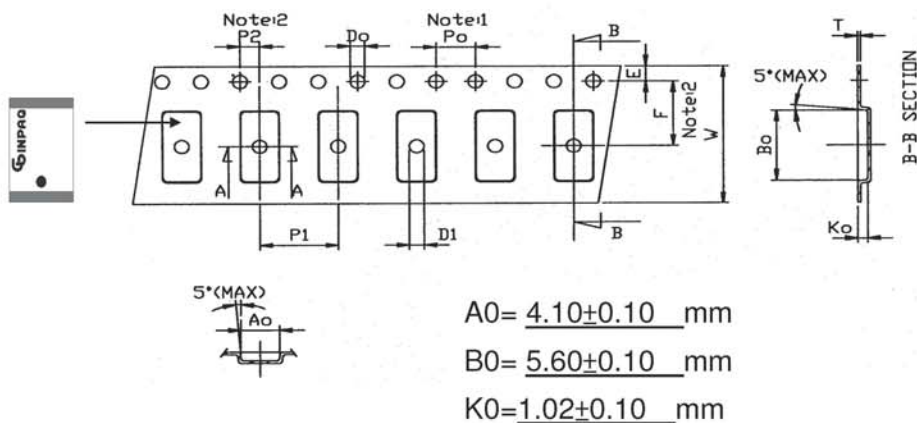
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7.Taping Package and Label Marking: (unit: mm)

(1) Quantity/Reel: 2000pcs/Reel

(2) Carrier tape dimensions

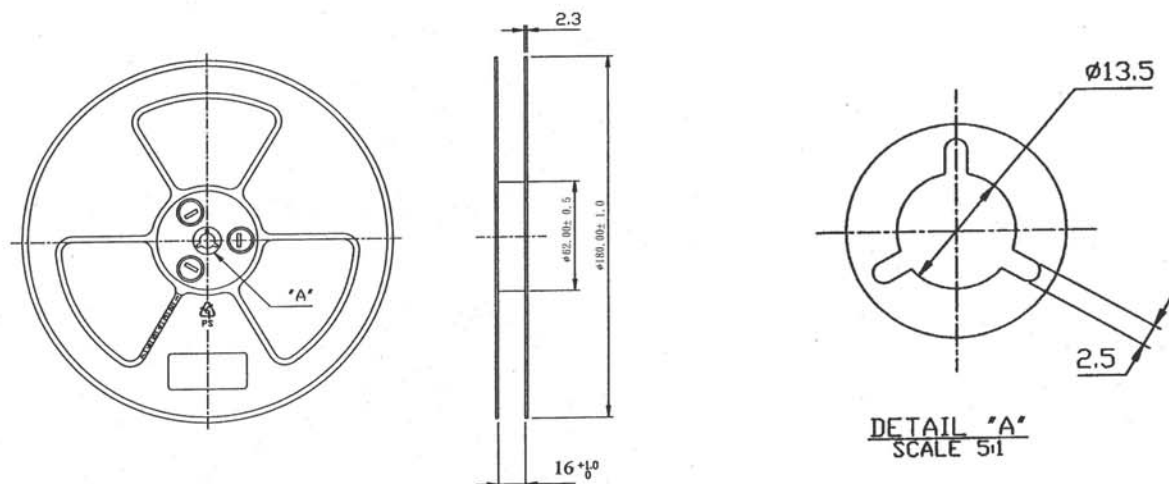


Symbol	Spec.
Po	4.00 ± 0.1
P1	8.00 ± 0.1
P2	2.00 ± 0.05
Do	1.55 ± 0.05
D1	1.50(MIN)
E	1.75 ± 0.1
F	5.50 ± 0.05
10Po	40.00 ± 0.2
W	12.00 ± 0.1
T	0.25 ± 0.05

Notice:

1. 10 Sprocket hole pitch cumulative tolerance is ± 0.1 mm
2. Pocket position relative to sprocket hole measured as true position of pocket not pocket hole.
3. Ao & Bo measured on a place 0.3mm above the bottom of the pocket to top surface of the carrier.
4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
5. Carrier camber shall be not than 1mm per 100mm through a length of 250mm.

(3) Taping reel dimensions



UNLESS OTHER SPECIFIED TOLERANCES ON :

$X = \pm$ $X.X = \pm$ $X.XX =$
 ANGLES = \pm HOLEDIA = \pm

SCALE : -----

UNIT : mm

DRAWN BY : 吳為盛 *wdd*

CHECKED BY : 楊奇峯 *Kenng*

DESIGNED BY : 謝立庭 *LT*

APPROVED BY : 蘇志銘 *Ting*

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8. Environmental Characteristics

(1) Reliability Test

Item	Condition	Specification
Thermal shock	1. 30±3 minutes at -40°C±5°C, 2. Convert to +105°C (5 minutes) 3. 30±3 minutes at +105°C±5°C, 4. Convert to -40°C (5 minutes) 5. Total 100 continuous cycles	No apparent damage Fulfill the electrical spec. after test.
Humidity resistance	1. Humidity: 85% R.H. 2. Temperature: 85±5°C 3. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
High temperature resistance	1. Temperature: 150°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Low temperature resistance	1. Temperature: -40°C±5°C 2. Time: 1000 hours.	No apparent damage Fulfill the electrical spec. after test.
Soldering heat resistance	1. Solder bath temperature : 260±5°C 2. Bathing time: 10±1 seconds	No apparent damage
Solderability	The dipped surface of the terminal shall be at least 95% covered with solder after dipped in solder bath of 245±5°C for 3±1 seconds.	No apparent damage

(2) Storage condition

(a) At warehouse:

The temperature should be within 0 ~ 30°C and humidity should be less than 60% RH.

The product should be used within 1 year from the time of delivery.

(b) On board:

The temperature should be within -40~85°C and humidity should be less than 85% RH.

(3) Operating temperature range

Operating temperature range : -40°C to +105°C.

UNLESS OTHER SPECIFIED TOLERANCES ON :

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UNIT : mm

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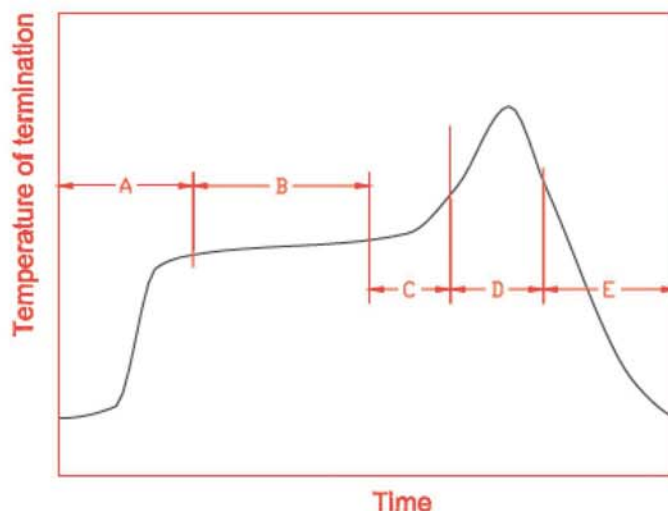
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9. Recommended reflow soldering



A	1 st rising temperature	The normal to Preheating temperature	30s to 60s
B	Preheating	140°C to 160°C	60s to 120s
C	2 nd rising temperature	Preheating to 200°C	20s to 40s
D	Main heating	if 220°C	50s~60s
		if 230°C	40s~50s
		if 240°C	30s~40s
		if 250°C	20s~40s
		if 260°C	20s~40s
E	Regular cooling	200°C to 100°C	1°C/s ~ 4°C/s

*reference: J-STD-020C

(1) Soldering gun procedure

Note the follows, in case of using solder gun for replacement.

- The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
- The soldering gun tip shall not touch this product directly.

(2) Soldering volume

Note that excess of soldering volume will easily get crack the body of this product.

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