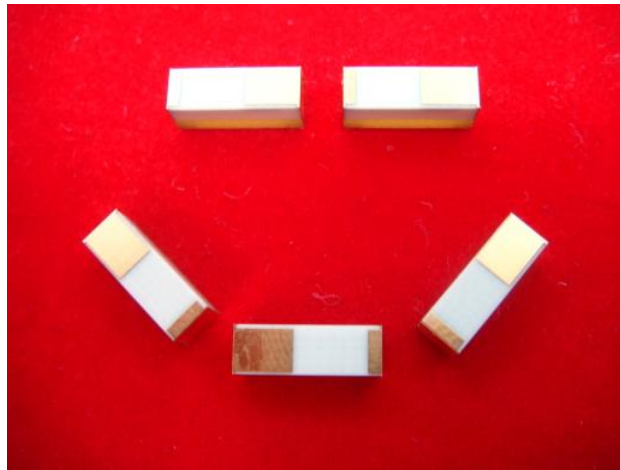


10 x 3.2 x 3.9 GPS Chip Antenna (AA064B)

1. Explanation of Product Number

<u>H</u>	<u>2</u>	<u>U</u>	<u>1</u>	<u>6</u>	<u>3</u>	<u>1</u>	<u>S</u>	<u>1</u>	<u>A</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>0</u>
				(1)	(2)	(3)	(4)	(5)					



Product Code:

- (1) Product Categories:
6: polymer substrate antenna
- (2) Dimensions:
31: 10 x 3.2 x 3.9 (mm)
- (3) Material:
S: RGF
- (4) Working Frequency:
1A: 1575.42MHz
- (5) Antenna Series:
02: serial number



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TITLE : 10x3.2x3.9 GPS Chip Antenna (AA064B)		DOCUMENT NO.	H2U1631S1A0200	REV. C

2. Features

- *Stable and reliable in performances
- *Low temperature coefficient of frequency
- *Compact size
- *RoHS compliance

3. Applications

- *Navigation systems or position tracking systems
- *Hand-held devices when GPS function is needed, e.g., PDA, Smart phone, PND.

4. Description

Unictron's chip antenna series are specially designed for GPS application. Based on Unictron's proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications (80x40(mm) ground plane)

5-1. Electrical Table:

Characteristics		Specifications	Unit
Outline Dimensions		10 x 3.2 x 3.9	mm
Ground Plane Dimensions		80 x 40	mm
Working Frequency		1575.42	MHz
VSWR (@ center frequency)*		2 Max.	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@1575 MHz)	3 (typical)	dBi
Efficiency		83 (typical)	%
Temperature Coefficient of Frequency		0±20 max (@ -40°C ~85°C)	ppm/°C

*Center frequency means the frequency with the lowest value in return loss of the chip antenna on the evaluation board.

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TITLE : **10x3.2x3.9 GPS Chip Antenna (AA064B)**

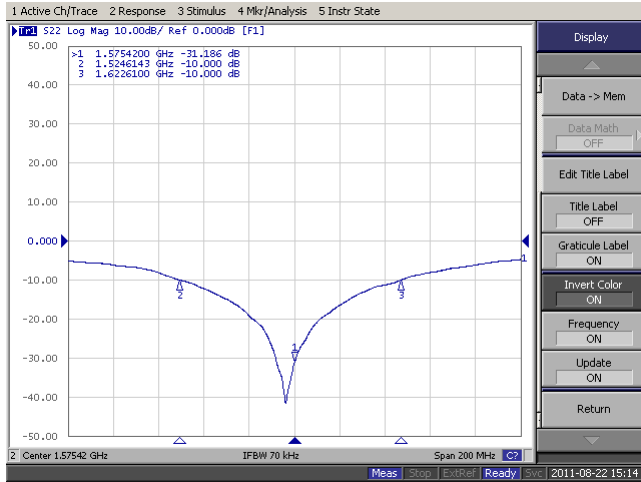
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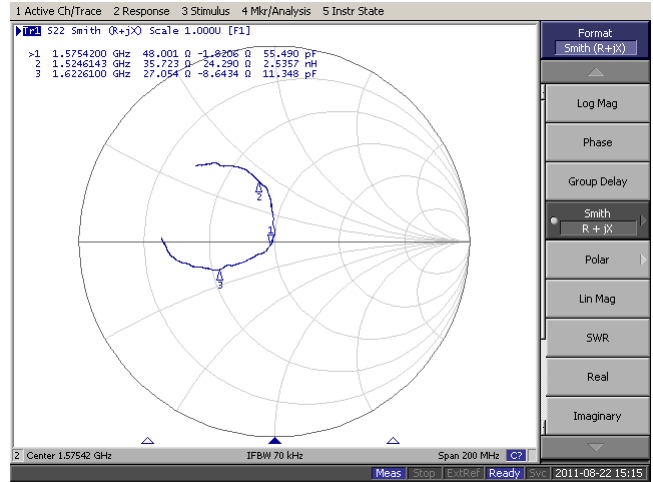
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5-2. Return Loss & Smith Chart

Return Loss(S₁₁)

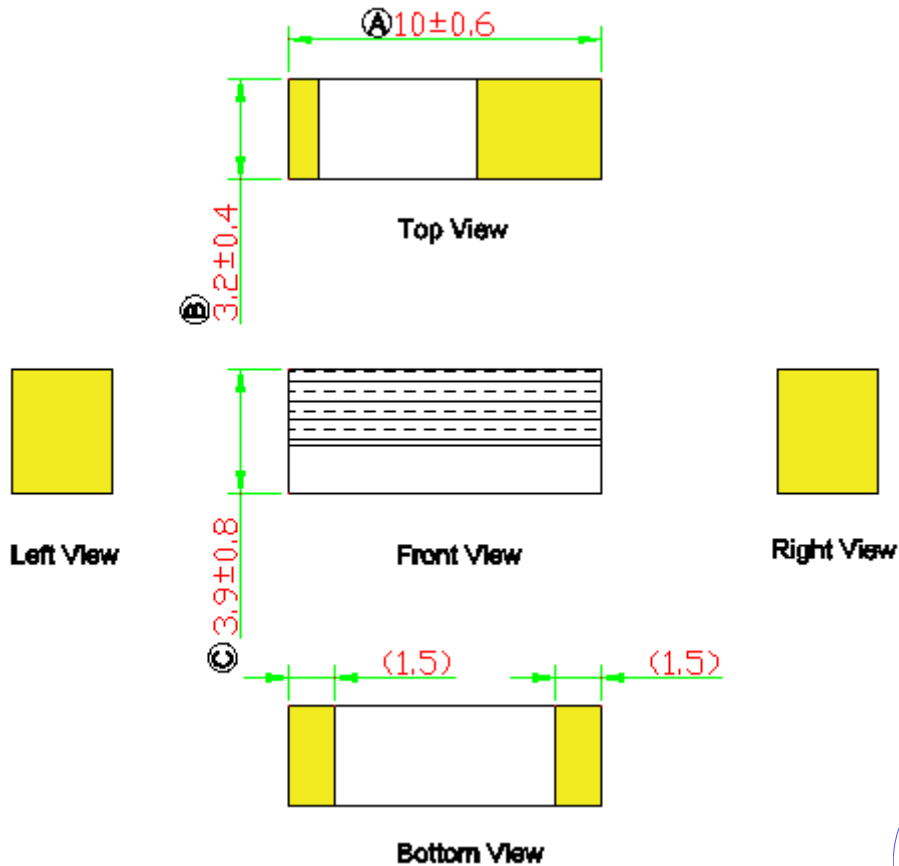


Smith Chart(S₁₁)



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

a. Antenna Dimensions



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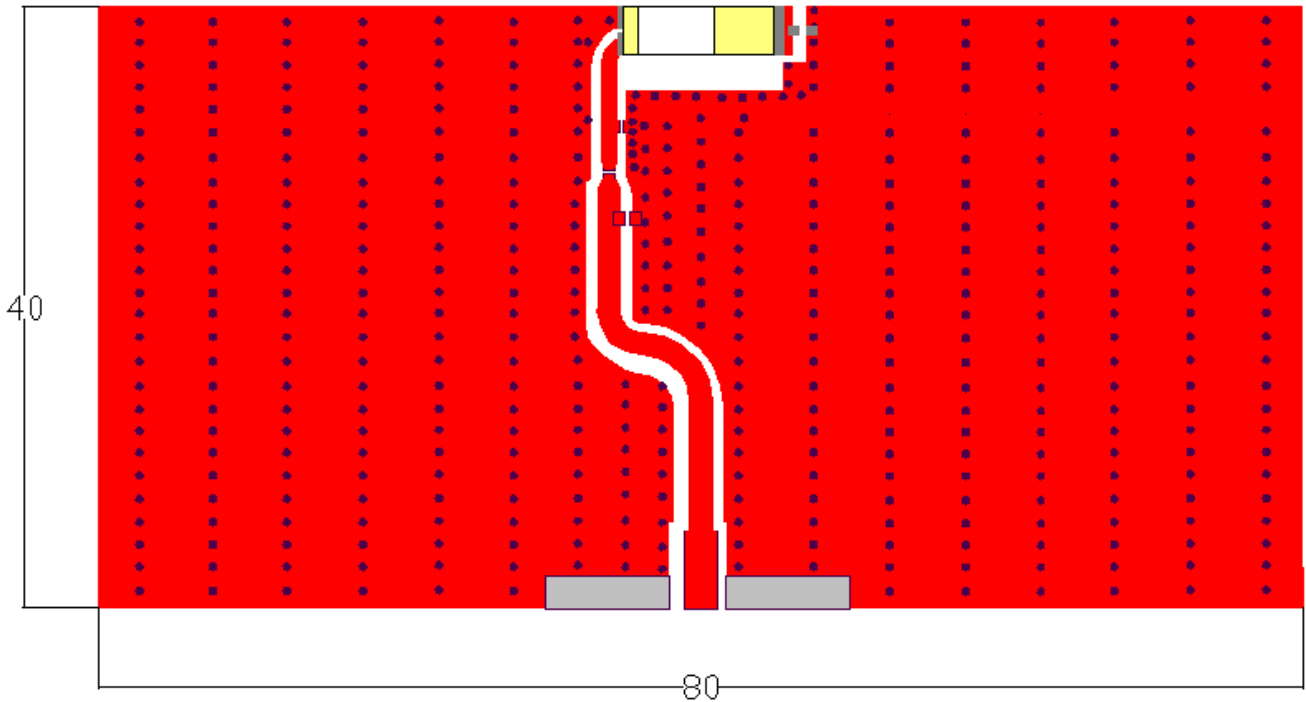
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b. Test Board Dimensions



Unit : mm



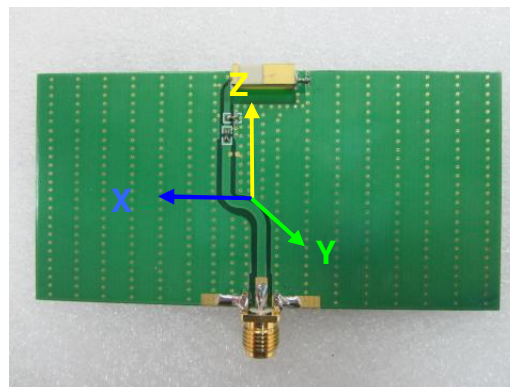
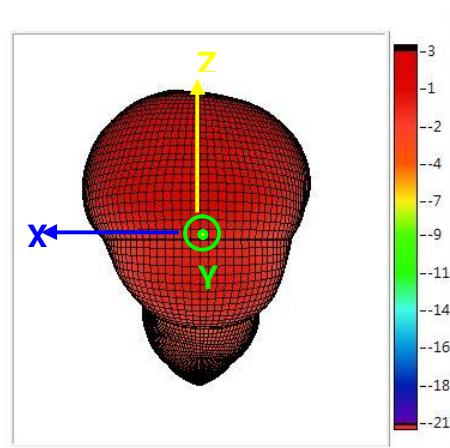
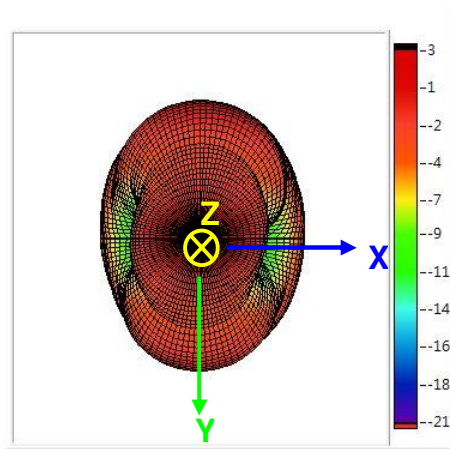
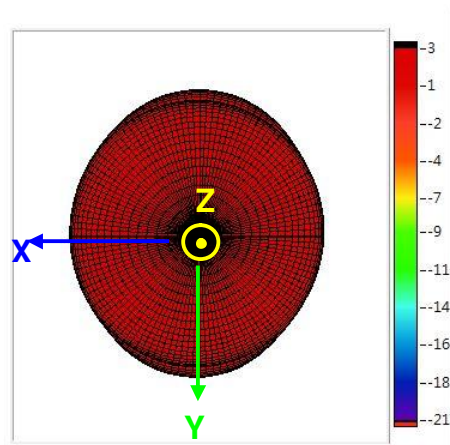
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7. Radiation Pattern (80x40(mm) ground plane)

7-1. 3D Gain Pattern at 1575 MHz



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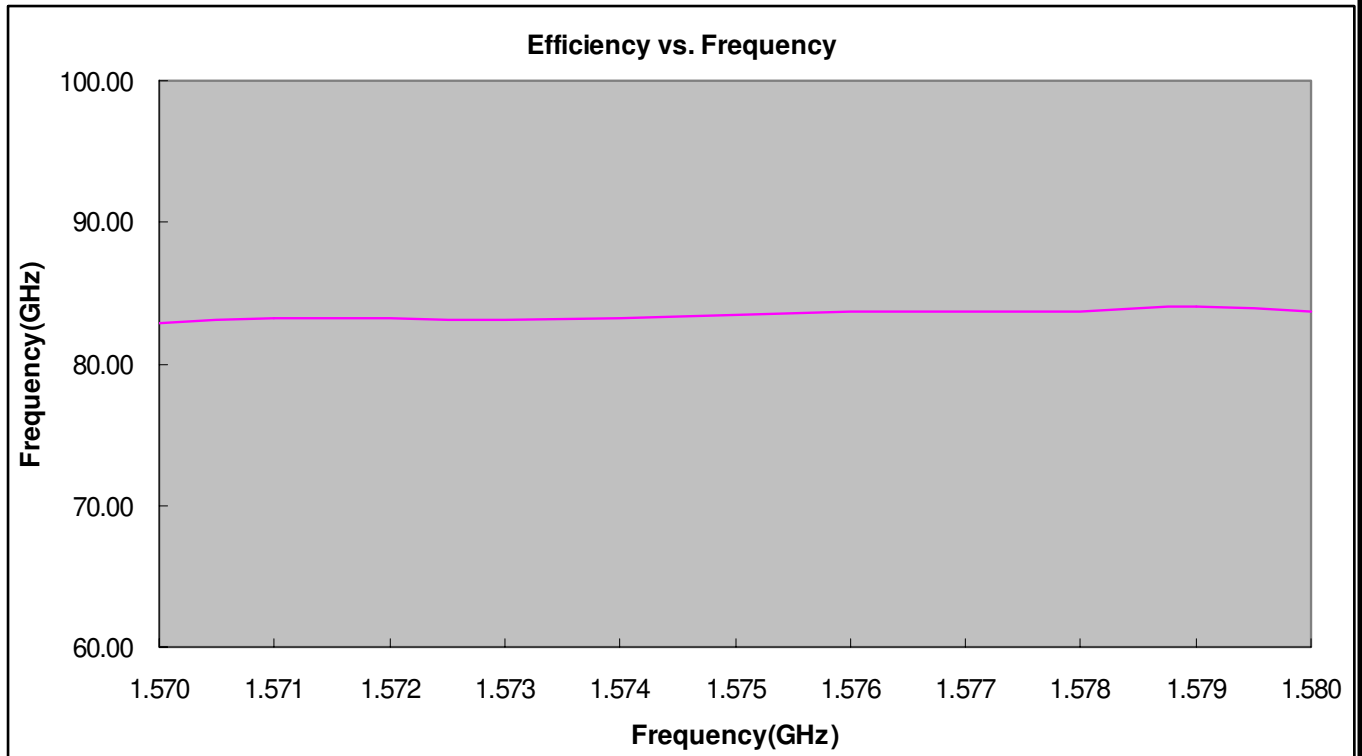
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7-2. Efficiency Table

Frequency(GHz)	1.570	1.571	1.572	1.573	1.574	1.575	1.576	1.577	1.578	1.579	1.580
Efficiency(dB)	-0.81	-0.79	-0.79	-0.80	-0.79	-0.78	-0.77	-0.77	-0.77	-0.76	-0.77
Efficiency(%)	82.91	83.28	83.28	83.10	83.28	83.47	83.66	83.66	83.66	84.04	83.66
Gain(dBi)	3.09	3.08	3.06	3.03	3.04	3.02	2.99	2.98	2.97	2.96	2.95

7-3. Efficiency vs. Frequency



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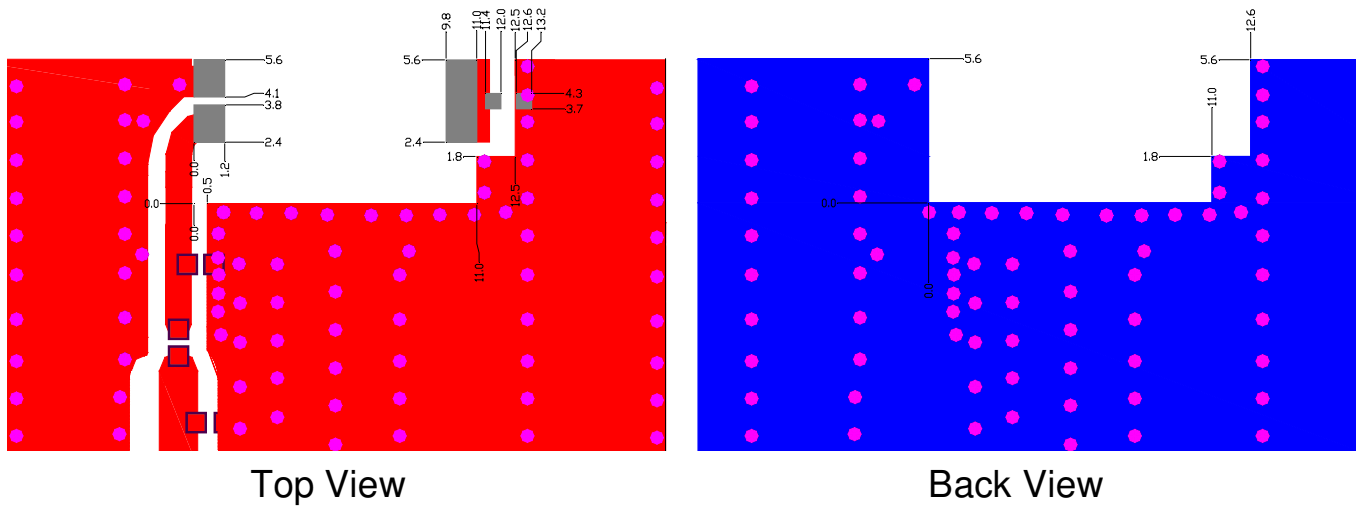
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8. Layout Guide:

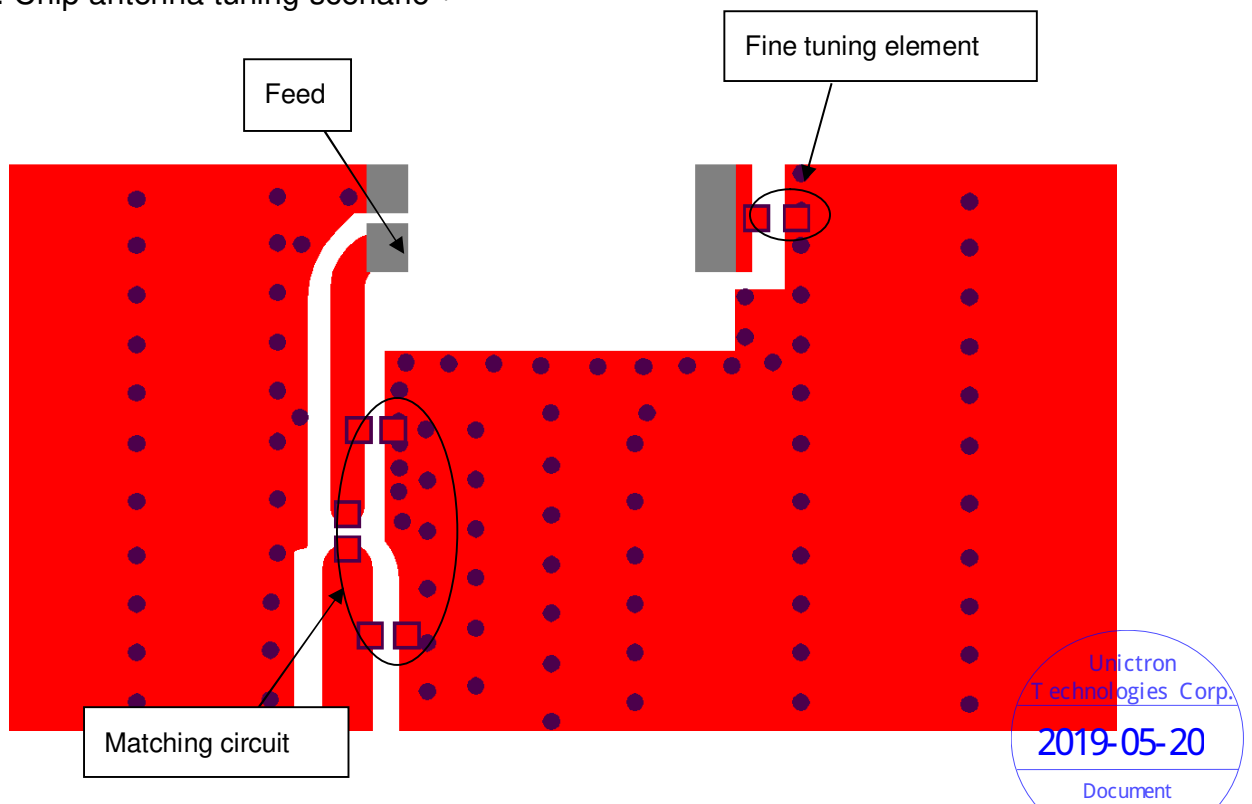
a. Solder Land Pattern:

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



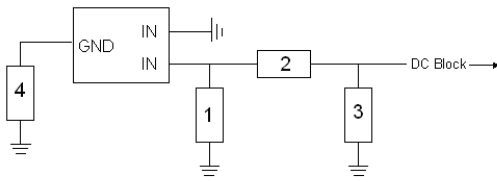
9. Frequency tuning:

a. Chip antenna tuning scenario :



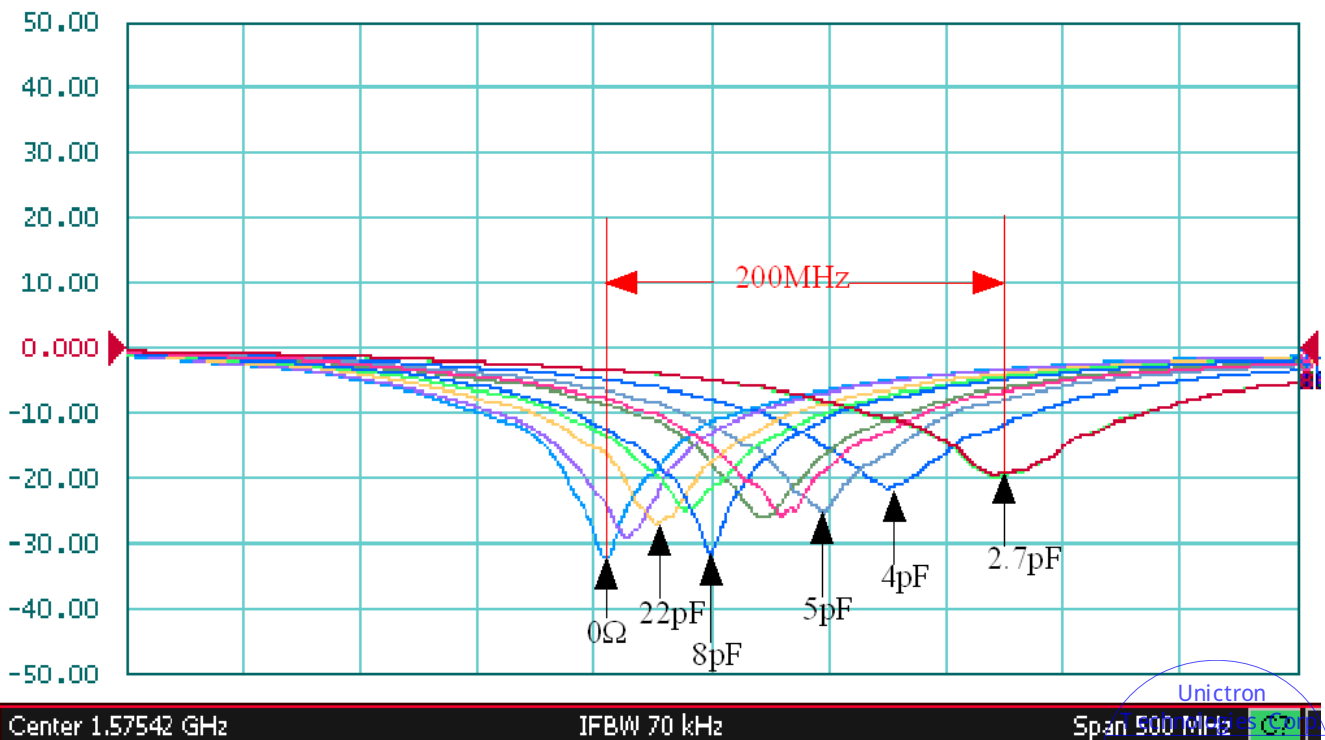
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b. Matching circuit :



System Matching Circuit Component		
Location	Description	Vendor
1	1.8pF	TDK(0402)
2	4.7pF	TDK(0402)
3	N/A	-
4 (Fine tuning element)	8pF	TDK(0402)

c. Fine tuning element vs. Center frequency



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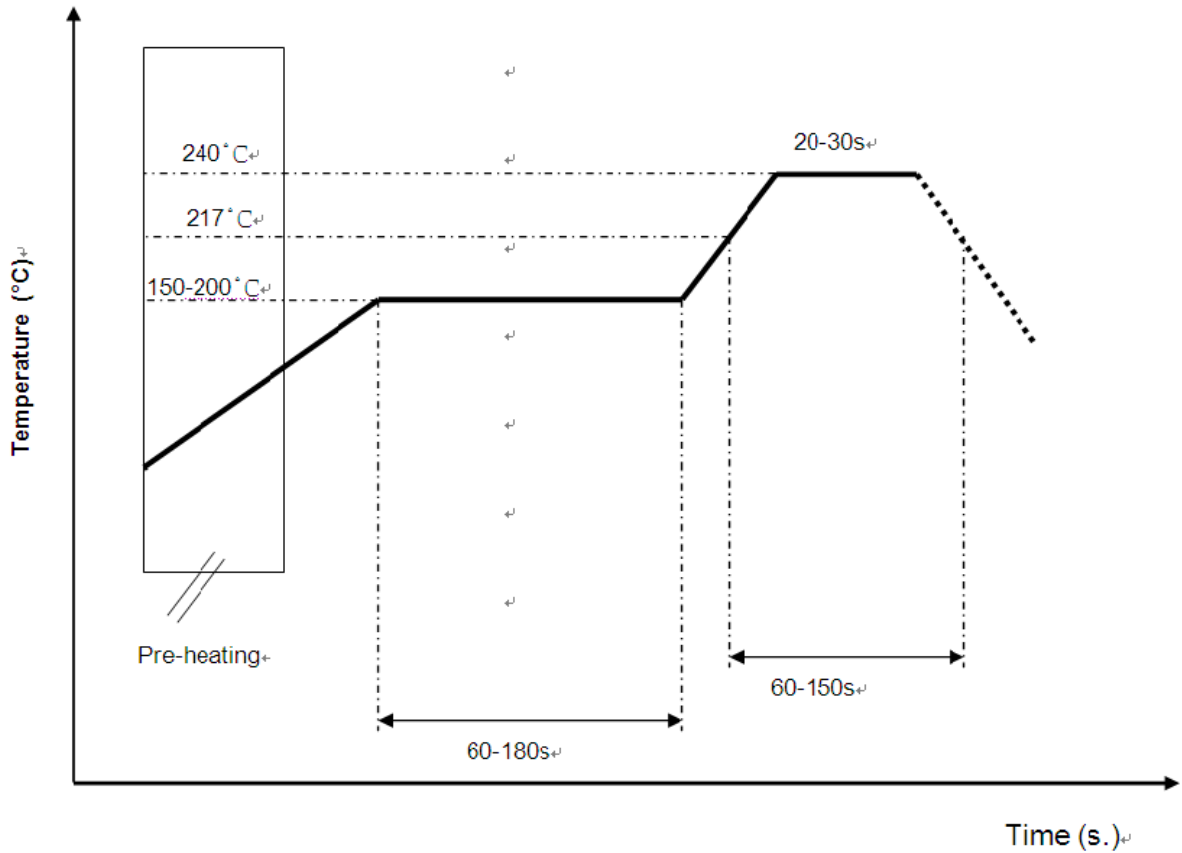
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10. Soldering Conditions:

a. Typical Soldering Profile for Lead-free Process



*Recommended solder paste alloy: SAC305 (Sn96.5 /Ag3 /Cu0.5) Lead Free solder paste



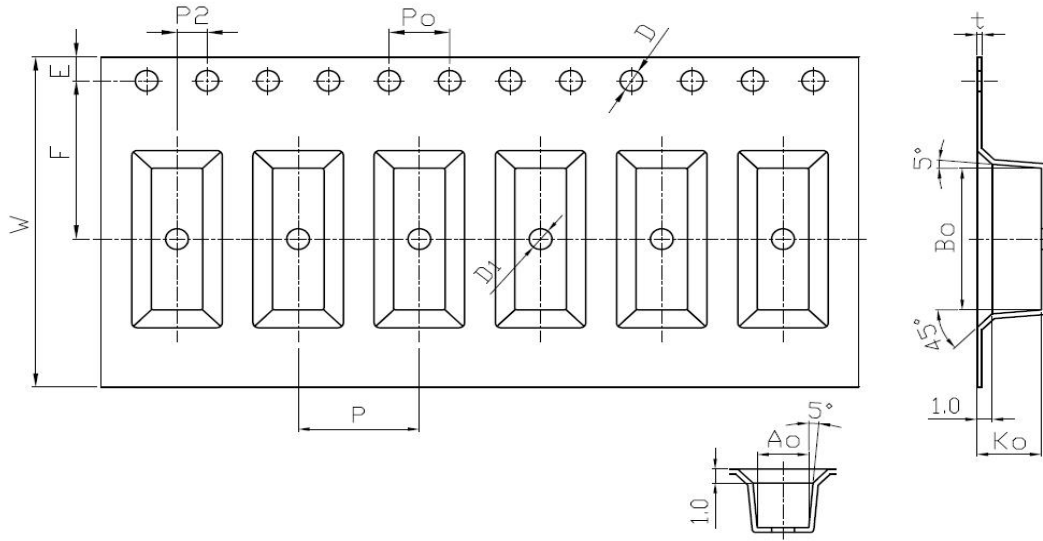
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11. Packing:

- (1) Quantity/Reel: 2000pcs/Reel
- (2) Plastic tape:



2.1 Tape Dimensions(unit: mm)

Feature	Specifications	Tolerances
W	24.00	±0.30
P	8.00	±0.10
E	1.75	±0.10
F	11.50	±0.10
P2	2.00	±0.10
D	1.50	+0.10 -0.00
D1	1.50	±0.10
Po	4.00	±0.10
10Po	40.00	±0.20

- 1. Cumulative tolerance of 10 sprocket hole pitch: ±0.20mm
- 2. Carrier camber not to exceed 1mm in 250mm
- 3. Ao and Bo measured on a plane above the inside bottom of the pocket.
- 4. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
- 5. All dimensions meet EIA-481-B requirements.
- 6. Material: □ Clear Non Anti-Static Polystyrene.
■ Black Conductive Polystyrene.

2.2 Pocket Dimensions(unit: mm)

Feature	Specifications	Tolerances
Ao	3.40	+0.20
Bo	10.30	-0.10
Ko	4.25	+0.20 -0.10
t	0.35	+0.05 -0.05

12. Storage Conditions:

- (1) Temperature: -25°C to 85°C
- (2) Relative Humidity: 20% to 70%



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