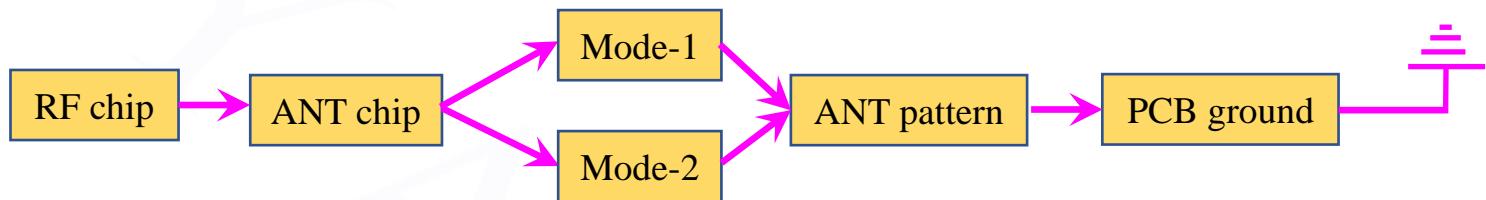




✓ Features:

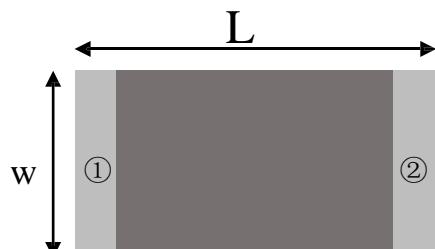
1. Surface mounted element with a small dimension of $1.6 \times 0.8 \times 0.8$ mm meet future miniaturization trend.
2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beautifying the housing of final product.
3. Miniaturization, wideband, high stability, low ESR, and low tolerance.
4. Dual-band resonances in the dominant and harmonic modes enables multiband operations.
5. Novel ground-radiation technique enables radiation from both the antenna and the ground plane.



✓ Applications:

1. Bluetooth
2. Dual-band WLAN
3. ISM and UWB

✓ Dimensions (Unit: mm)



Number	Terminal Name
①	INPUT
②	NC

(Top View)



(Bottom View)



(Side View)

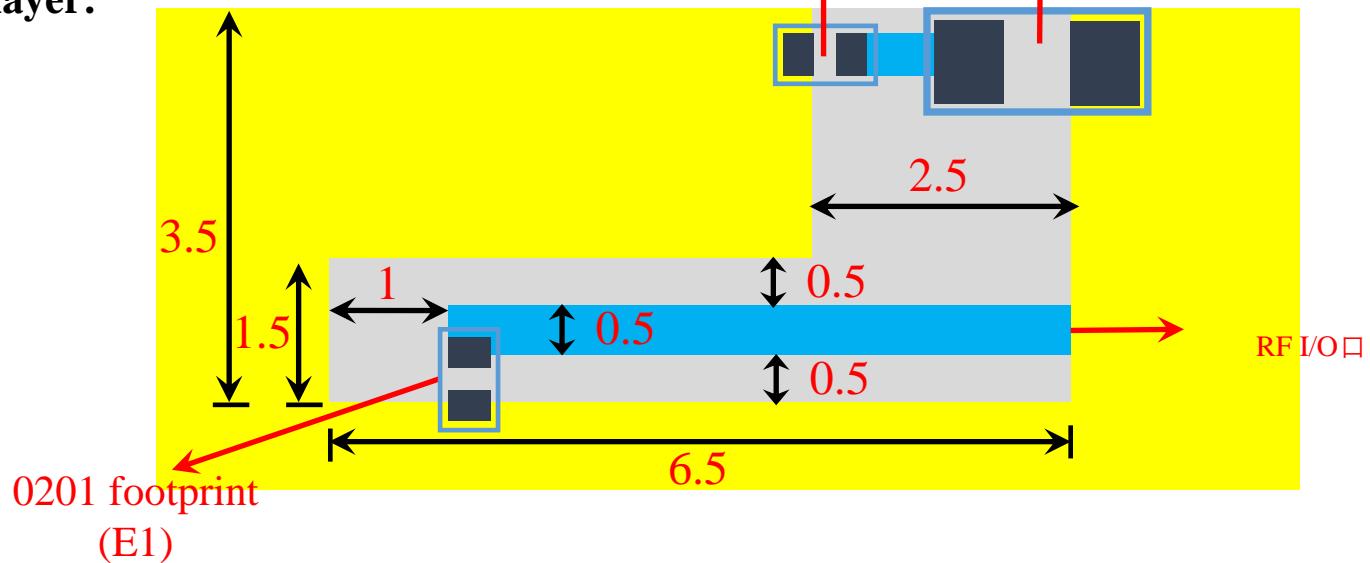
Symbols	L	W	T	A
Dimensions	1.60 ± 0.20	0.80 ± 0.20	0.80 ± 0.20	0.30 ± 0.10

Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.

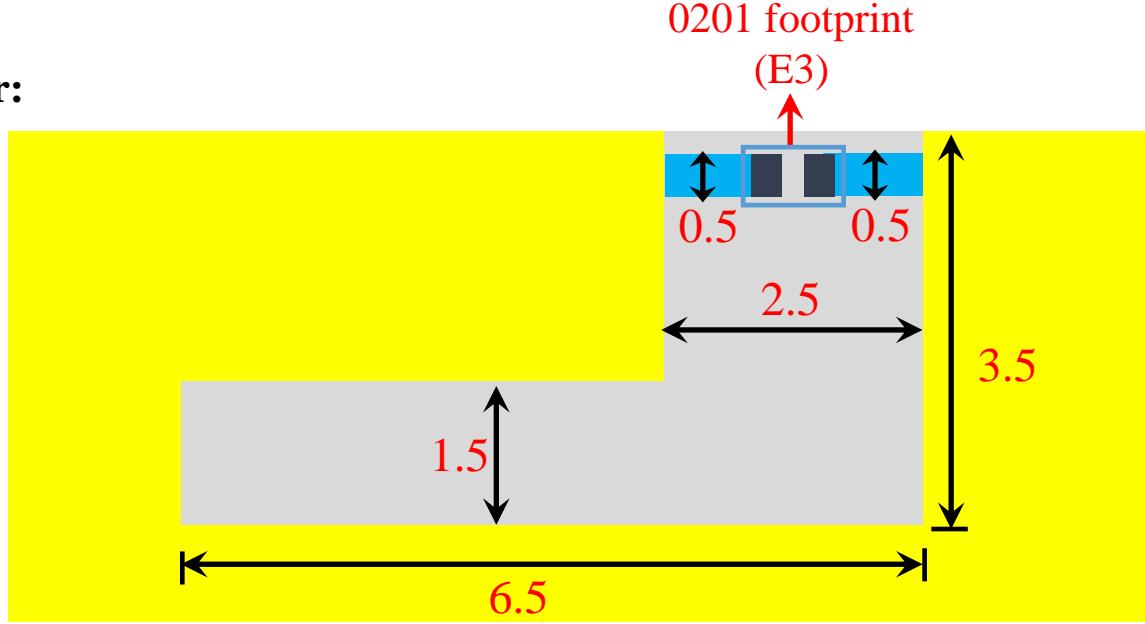


✓ Layout-1 (3.5mm×6.5mm)

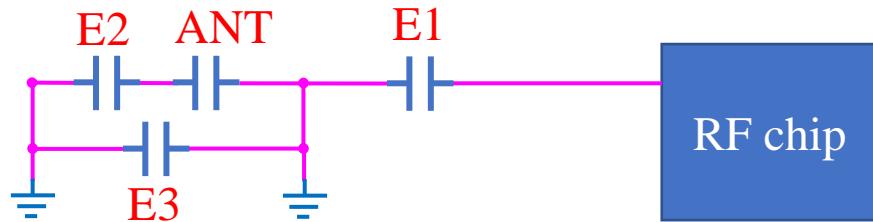
Top layer:



Bottom layer:



Equivalent circuit:





汉阳天线设计有限公司

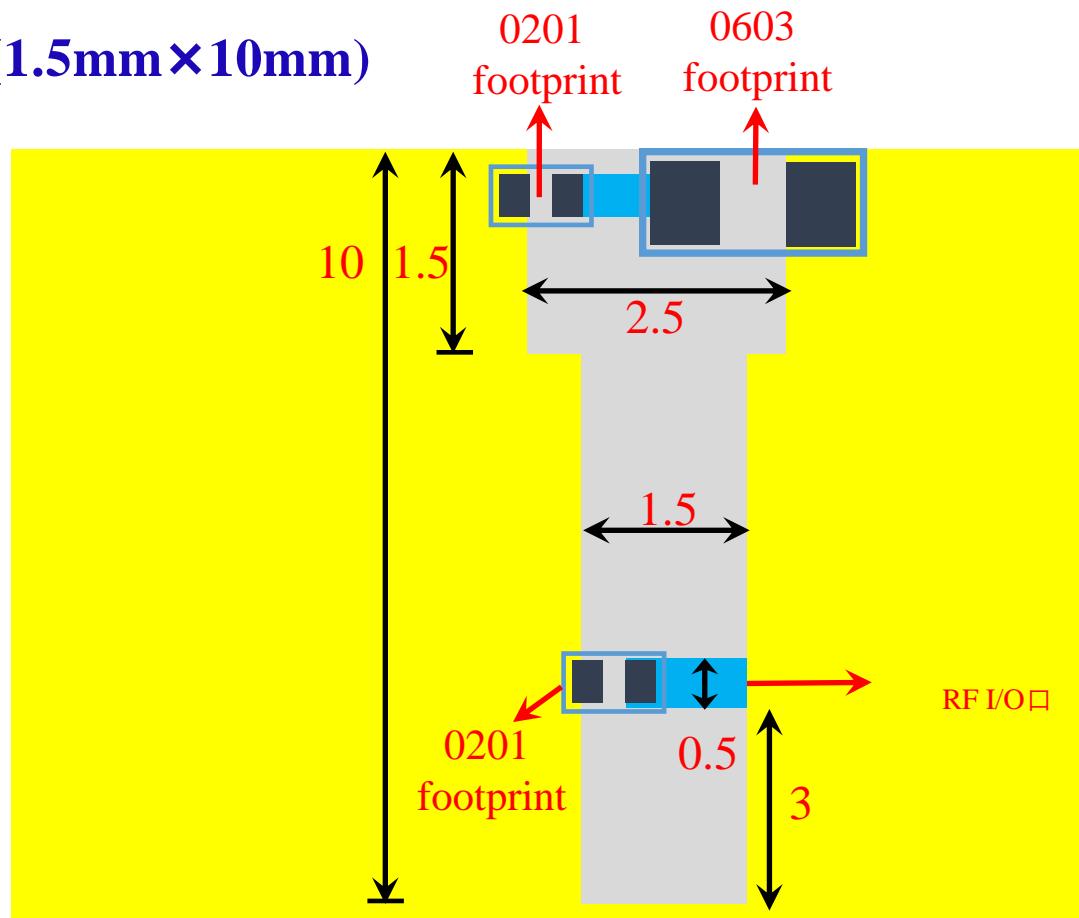
Hanyang Antenna Design Co. Ltd.

P/N: HY160808 SRF09

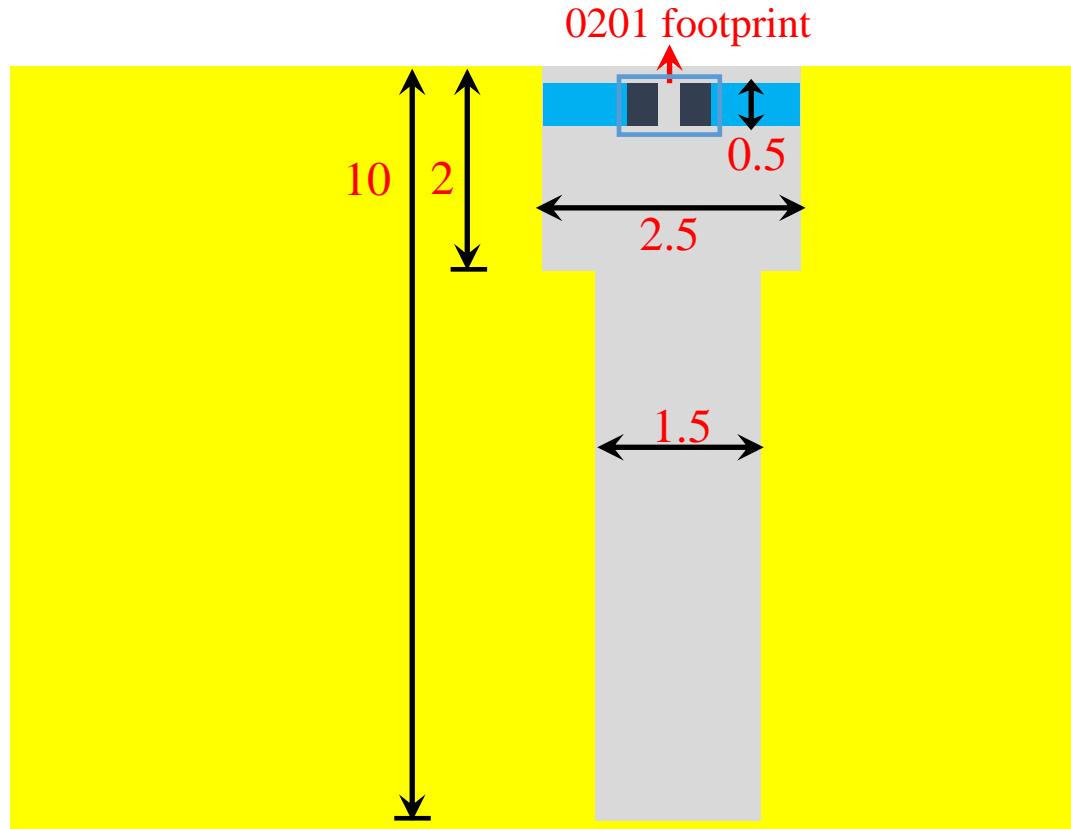
- 深圳市宝安区前进二路宝运达物流信息大厦12A10/12A11
12A10/12A11, Baoyunda Logistics Information Building
Qianjin Second Road, Baoan District, Shenzhen
- 青岛市崂山区松岭路399号海信产业园A1号楼606
606, Building A1, Hisense Industrial Park, 399 Songling
Road, Laoshan District, Qingdao

✓ **Layout-2 (1.5mm x 10mm)**

Top layer:



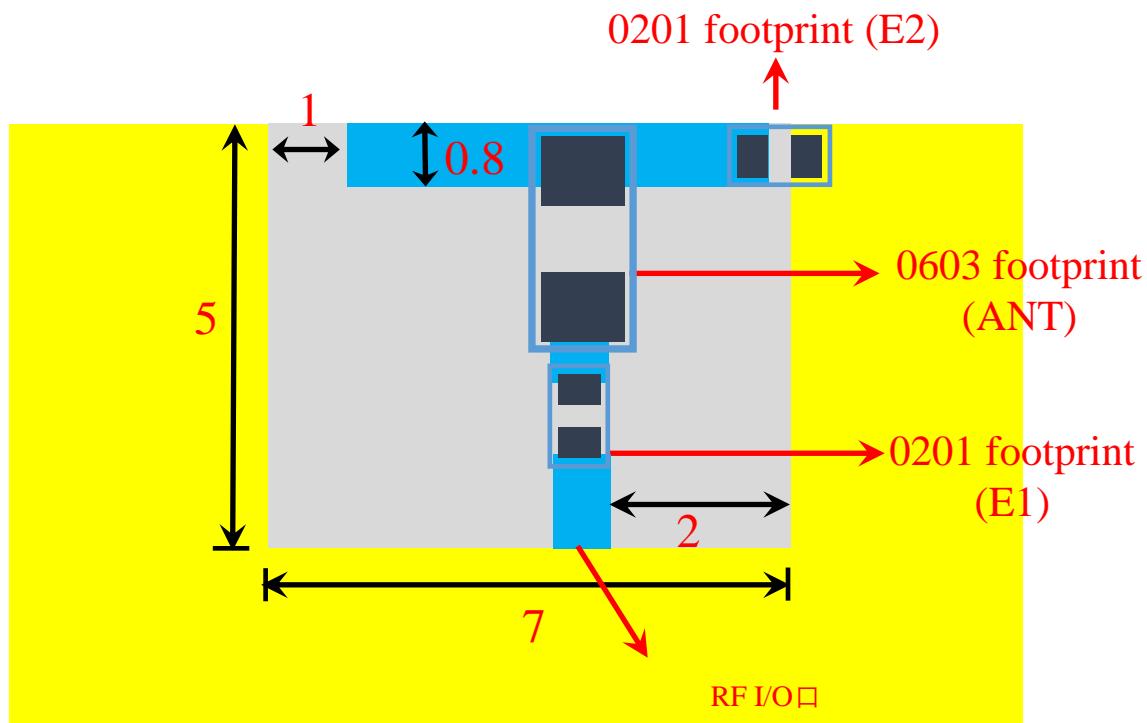
Bottom layer:



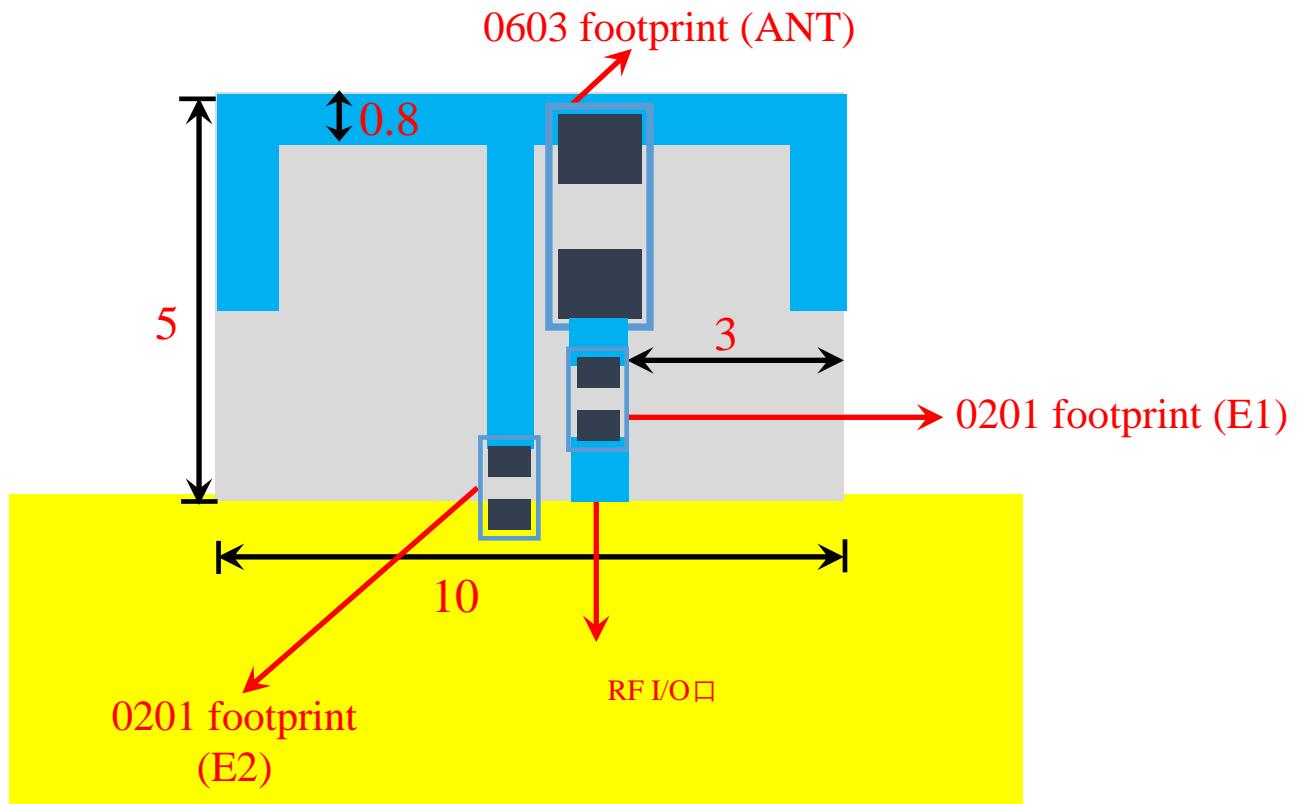
Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.



✓ Layout-3 (5mm×7mm)



✓ Layout-4 (5mm×10mm)

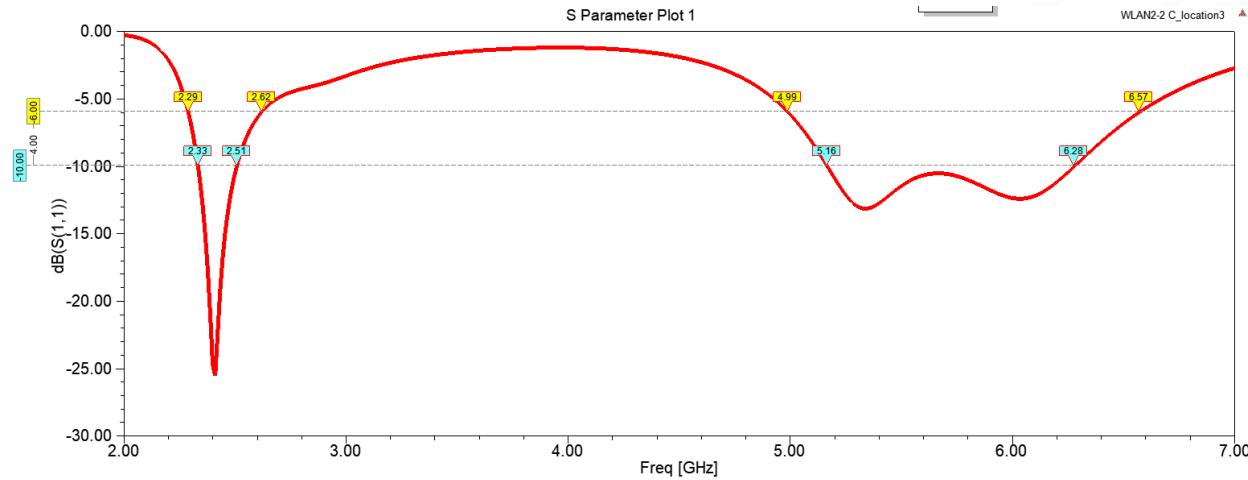
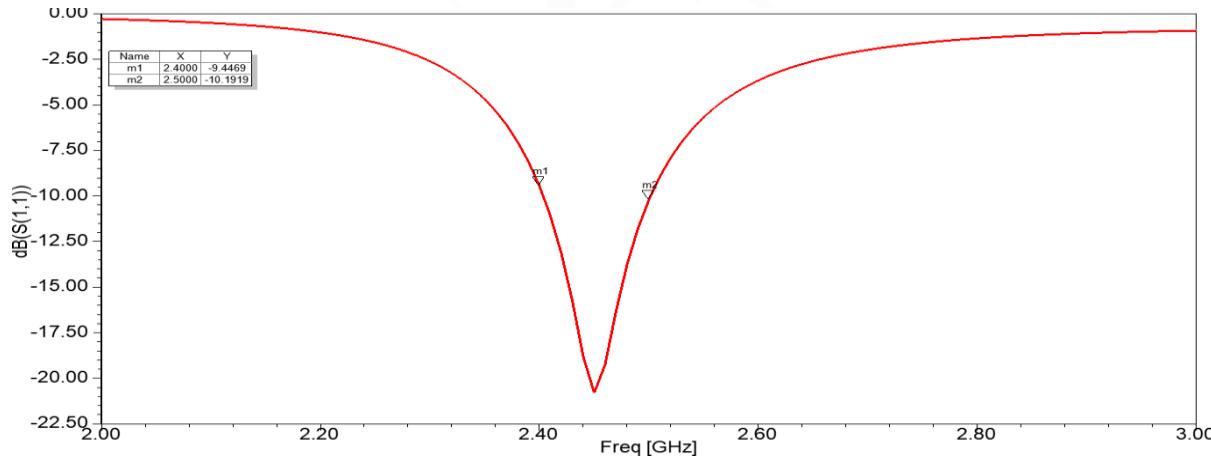




✓ Electrical Characteristics:

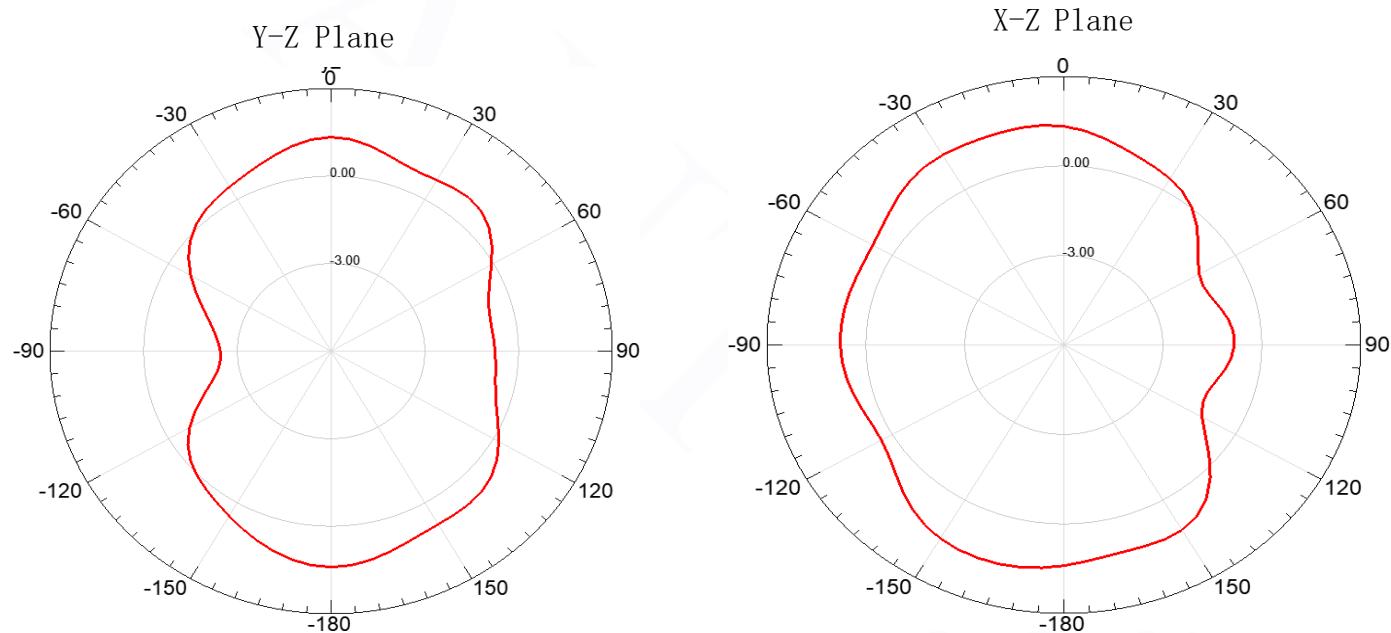
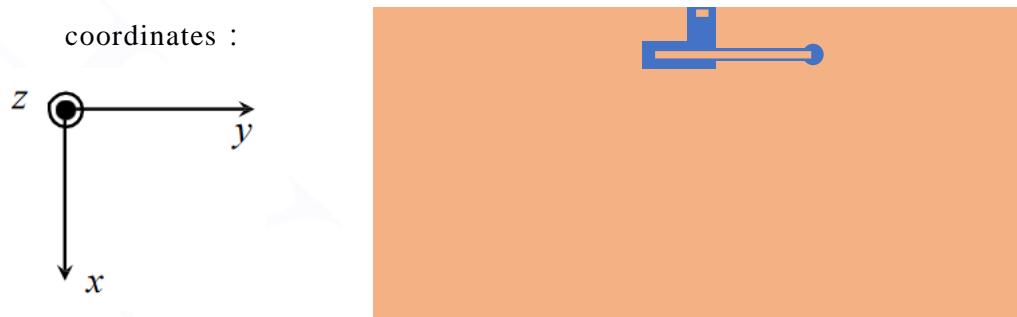
	Feature	Specification
1	Central frequency	2.45GHz&5.5GHz
2	Bandwidth	>150MHz
3	Peak gain	2~3dBi
4	VSWR	<2
5	Polarization	Linear
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

✓ Characteristic Curves:





✓ Radiation Pattern:



✓ Radiation Performance:

Frequency	2450MHz	5500MHz
Avg. gain	-0.85	-1.30
Peak gain	3.0	3.5
Efficiency	82%	78%



✓ Dependability Test

Test Temperature	$25^{\circ}\text{C} \pm 5^{\circ}\text{C}$
Operating Temperature	$-25^{\circ}\text{C} \sim +125^{\circ}\text{C}$
Temperature	$5\sim40^{\circ}\text{C}$
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)

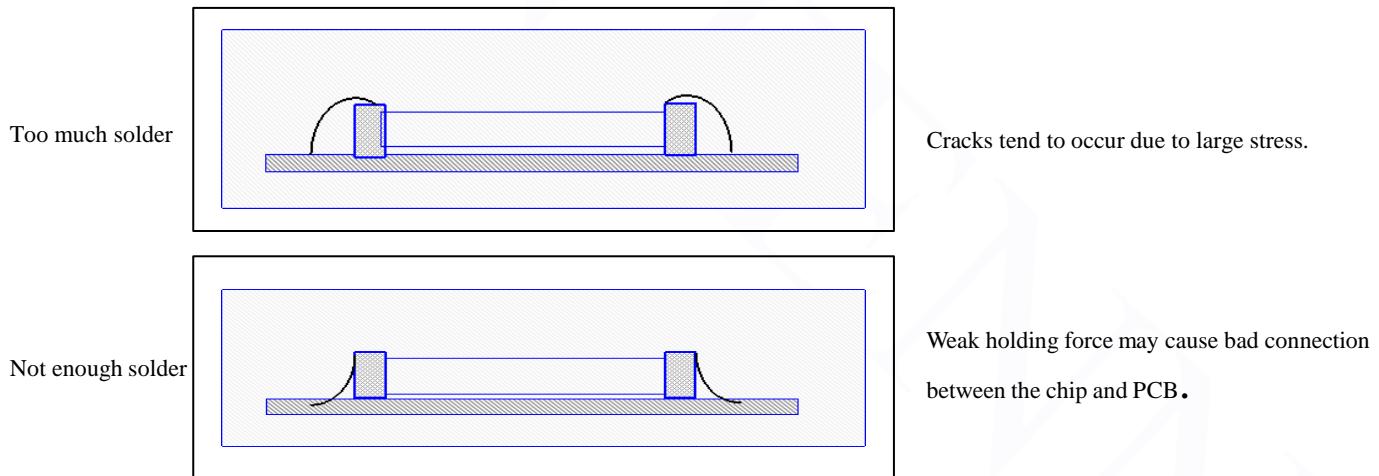
✓ Solderability

At least 95% of the terminal electrode is covered by new solder.

Preheating conditions: 80 to 120°C ; 10~30s.

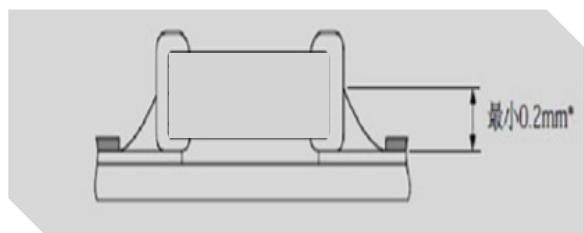
Solder Temperature: $235 \pm 5^{\circ}\text{C}$ Duration: $2 \pm 0.5\text{s}$, Solder Temperature: $245 \pm 5^{\circ}\text{C}$ Duration: $2 \pm 0.5\text{s}$

✓ Optimum Solder Amount for Reflow Soldering

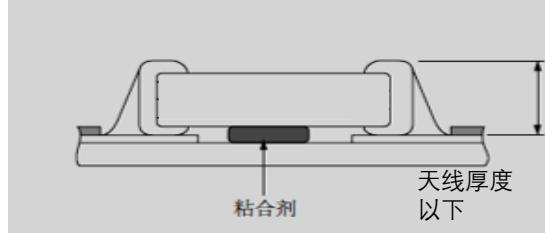


✓ Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering





✓ Temperature Cycle Test

10 ± 1 S Applied Force: 5N Duration: 10 ± 1 S

Preheating conditions: up-category temperature, 1h

Recovery time: 24 ± 1 h

Initial Measurement

Cycling Times: 5 times, 1 cycle, 4 steps:

✓ Resistance to Soldering Heat

Preheating 80 to 120°C; 10~30s. Solder Temperature: 235 ± 5 °C; Duration: 2 ± 0.5 s; Solder Temperature: 245 ± 5 °C Duration: 2 ± 0.5 s; Preheating 100 to 200°C; 10 ± 2 min.

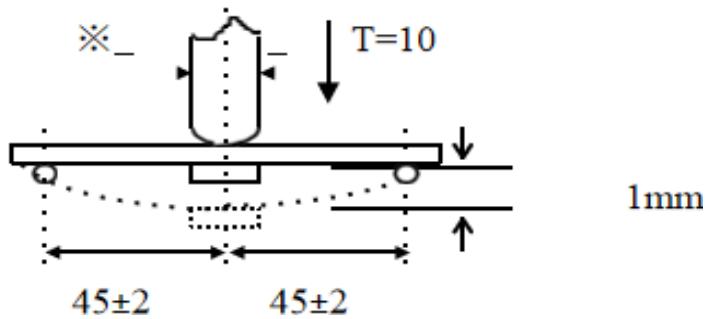
Solder Temperature: 265 ± 5 °C; Duration: 10 ± 1 s

Clean the capacitor with solvent and examine it with a 10X(min.) microscope.

Recovery Time: 24 ± 2 h

Recovery condition: Room temperature

✓ Resistance to Flexure of Substrate



Test Board: Al_2O_3 or PCB Warp: 1mm Speed: 0.5mm/sec.
Unit: mm

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



汉阳天线设计有限公司

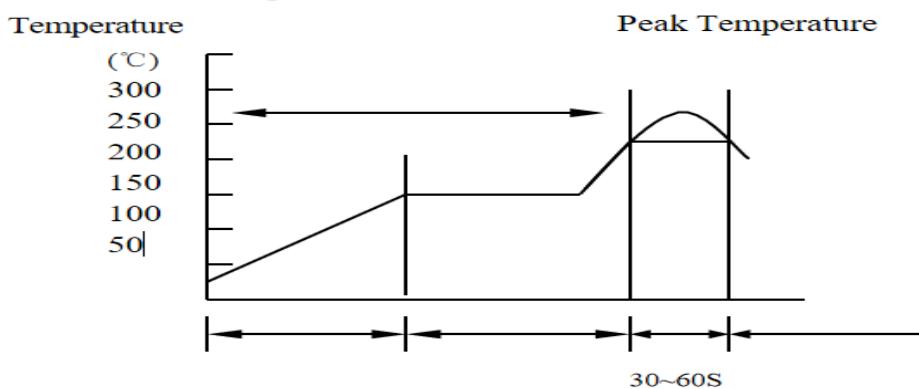
Hanyang Antenna Design Co. Ltd.

P/N: HY160808 SRF09

- 深圳市宝安区前进二路宝运达物流信息大厦12A10/12A11
12A10/12A11, Baoyunda Logistics Information Building
Qianjin Second Road, Baoan District, Shenzhen
- 青岛市崂山区松岭路399号海信产业园A1号楼606
606, Building A1, Hisense Industrial Park, 399 Songling
Road, Laoshan District, Qingdao

The temperature profile for soldering

Re-flow soldering

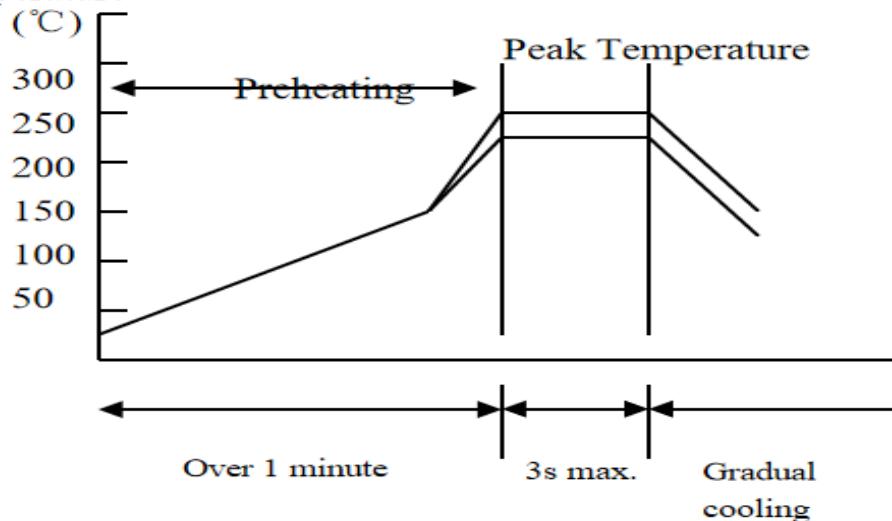


	Pb-Sn Pb-Sn soldering	Lead-free soldering
Peak temperature	230°C ~ 250°C	240°C ~ 260°C

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

Wave soldering

Temperature



	Pb-Sn Pb-Sn soldering	Lead-free soldering
Peak temperature	230°C ~ 260°C	240°C ~ 270°C

Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.



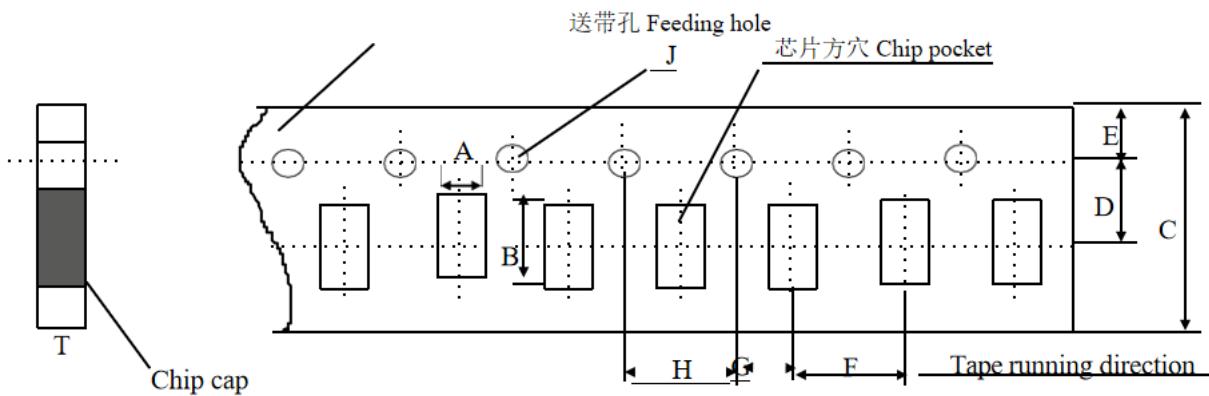
汉阳天线设计有限公司

Hanyang Antenna Design Co. Ltd.

P/N: HY160808 SRF09

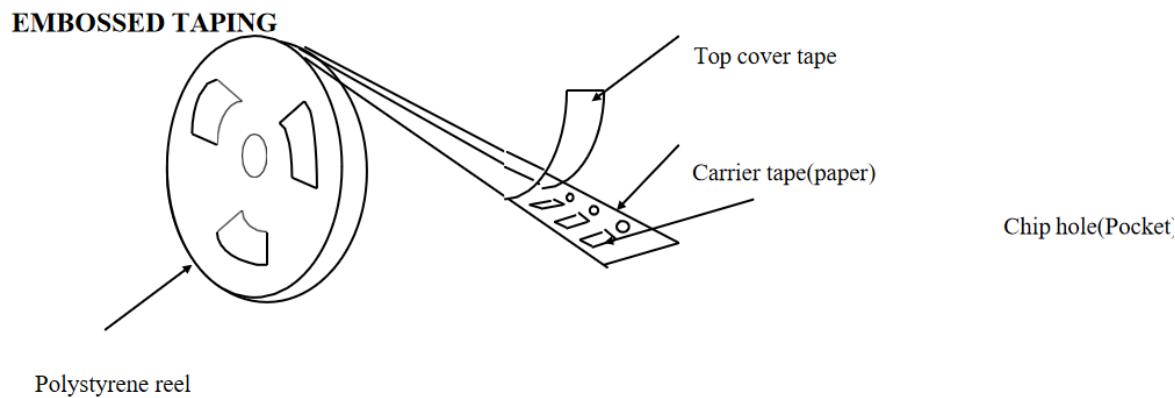
- 深圳市宝安区前进二路宝运达物流信息大厦12A10/12A11
12A10/12A11, Baoyunda Logistics Information Building
Qianjin Second Road, Baoan District, Shenzhen
- 青岛市崂山区松岭路399号海信产业园A1号楼606
606, Building A1, Hisense Industrial Park, 399 Songling
Road, Laoshan District, Qingdao

✓ Dimensions of paper taping



代号 Code	A	B	C	D*	E	F	G*	H	J	T
纸带规格 paper size										
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%

Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.