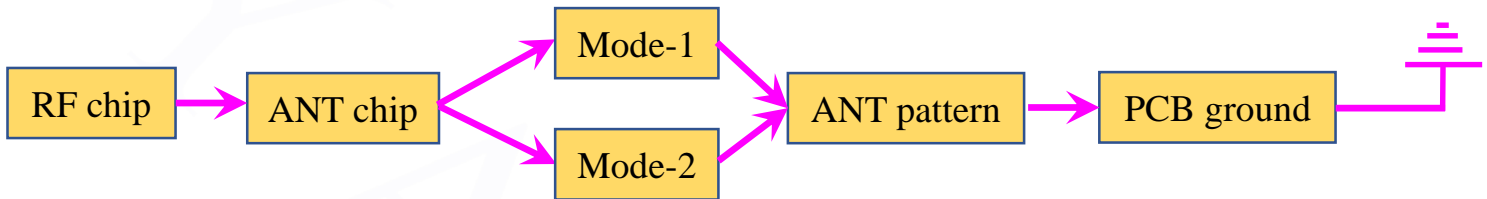




P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Features:**

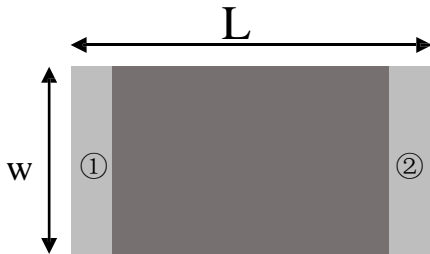
1. Surface mounted element with a small dimension of $1.6 \times 0.8 \times 0.8$ mm meet future miniaturization trend.
2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beautifying the housing of final product.
3. Miniaturization, wideband, 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:**

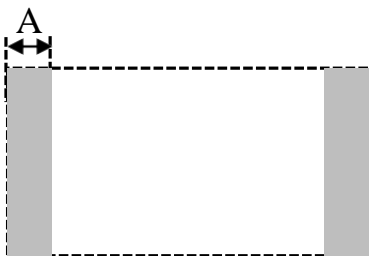
1. Bluetooth
2. Dual-band WLAN
3. ISM and UWB

✓ **Dimensions (Unit: mm)**

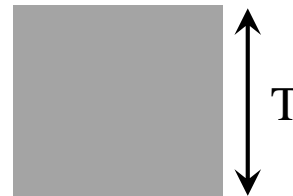


(Top View)

Number	Terminal Name
①	INPUT
②	NC



(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

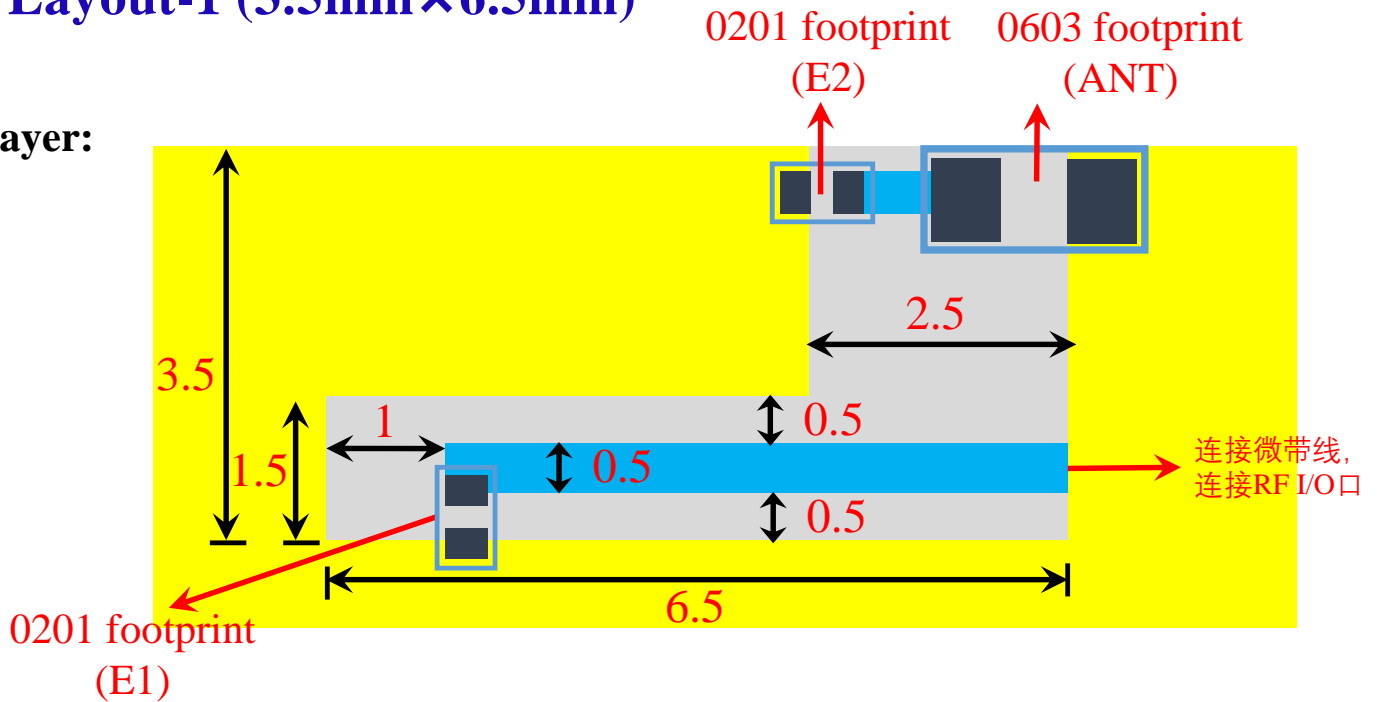
Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.



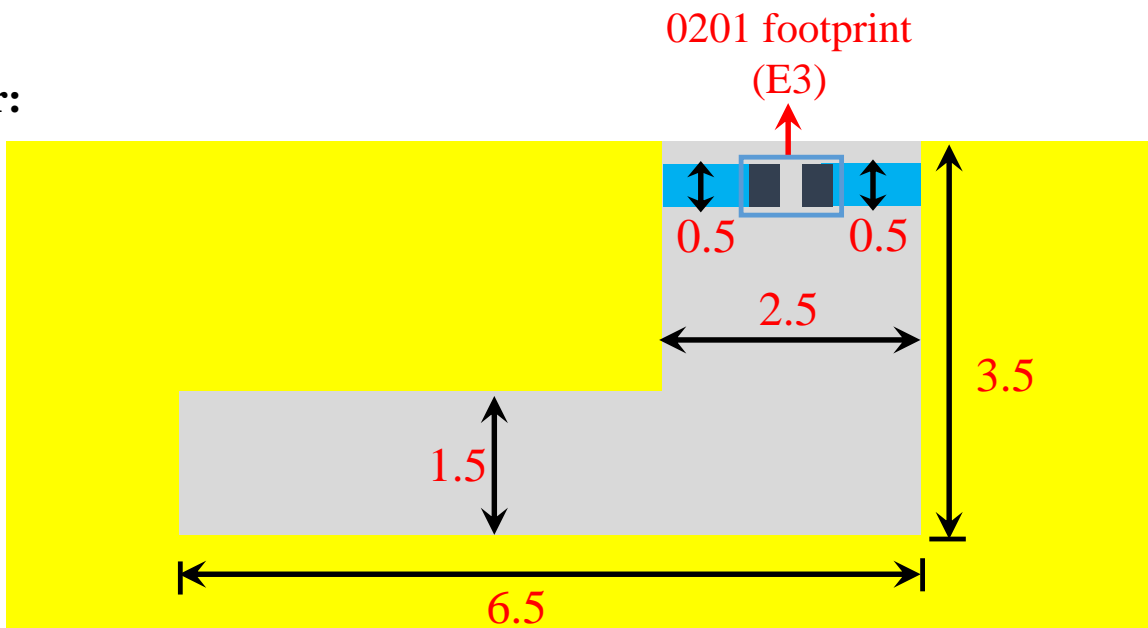
P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Layout-1 (3.5mm×6.5mm)**

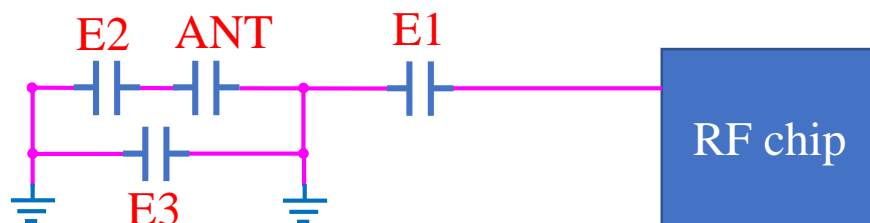
Top layer:



Bottom layer:



Equivalent circuit:

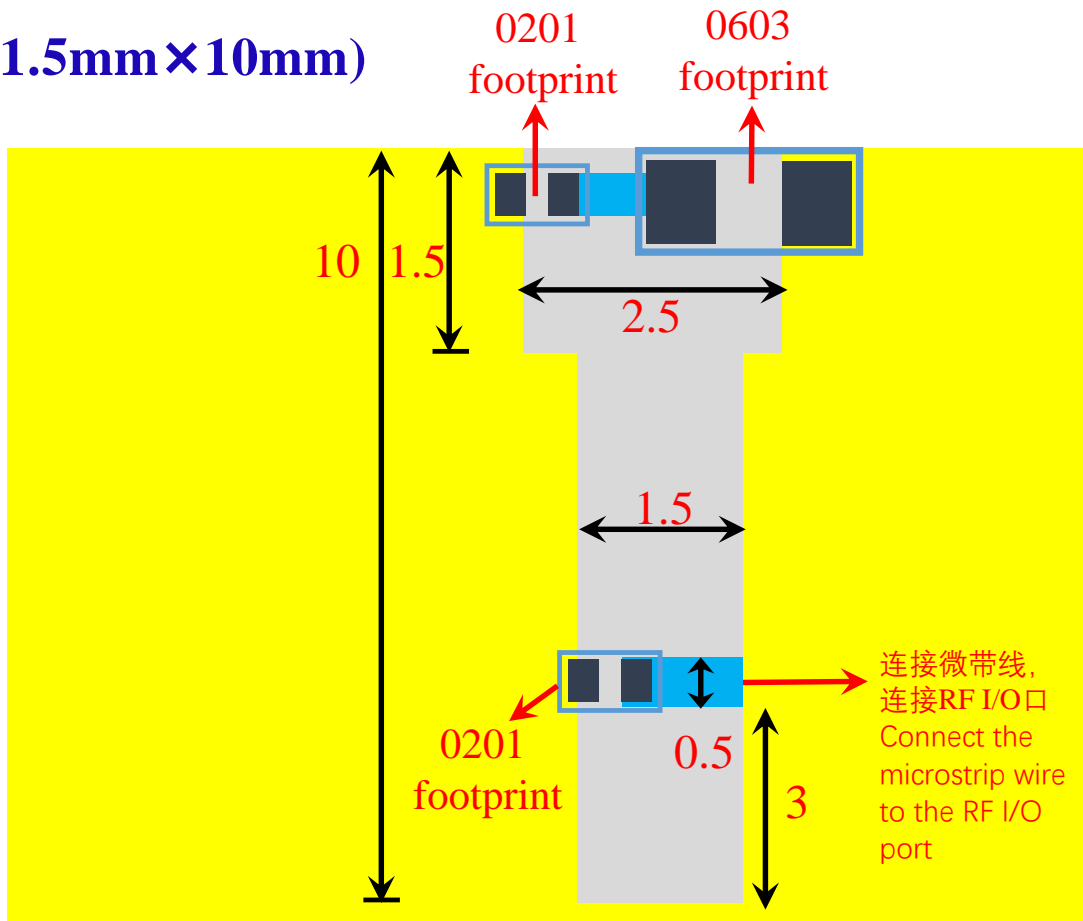




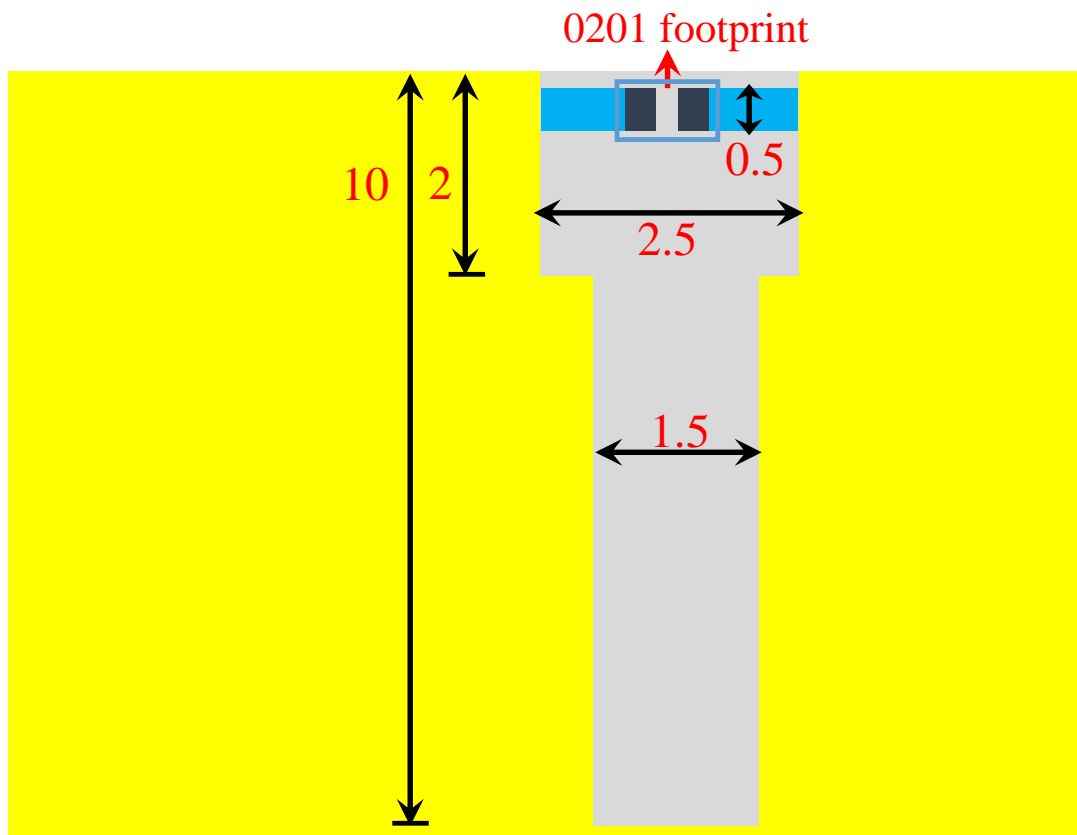
P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Layout-2 (1.5mm × 10mm)**

Top layer:



Bottom layer:

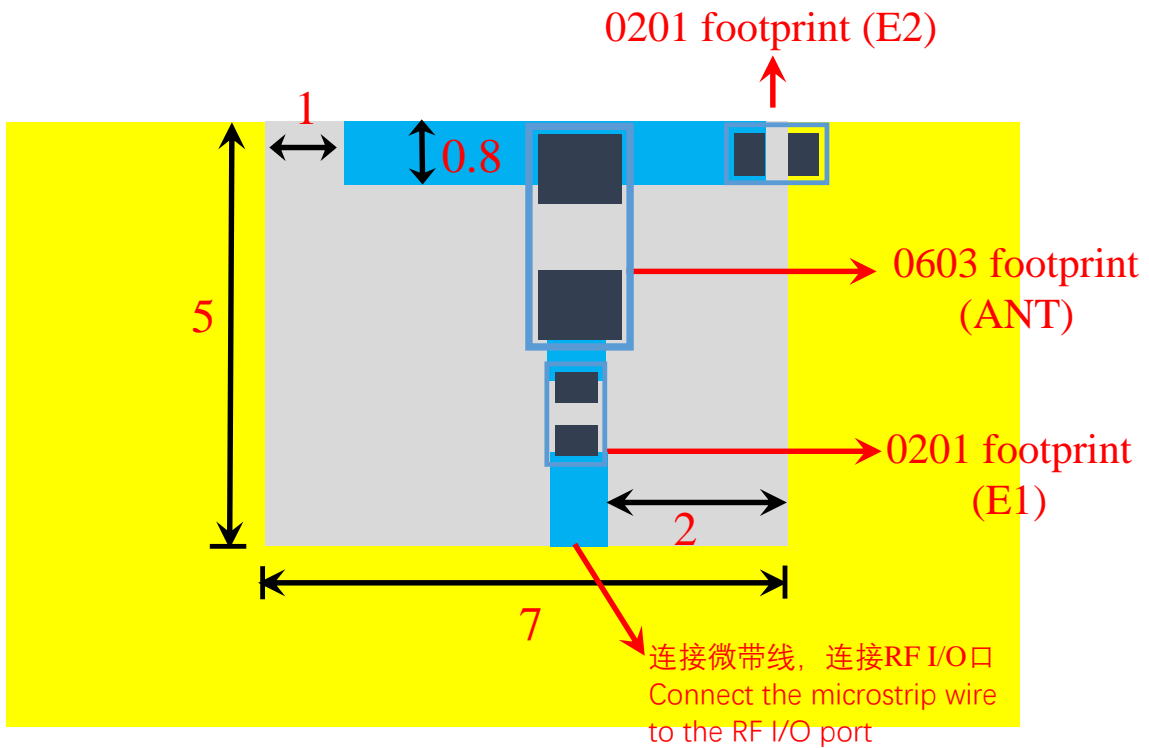


Hanyang Antenna Design Co. Ltd. has possession of proprietary information provided in this report and this proprietary information shall be kept in strict confidence and not disclosed to any person or firm without the prior written consent of Hanyang Antenna Design Co. Ltd.

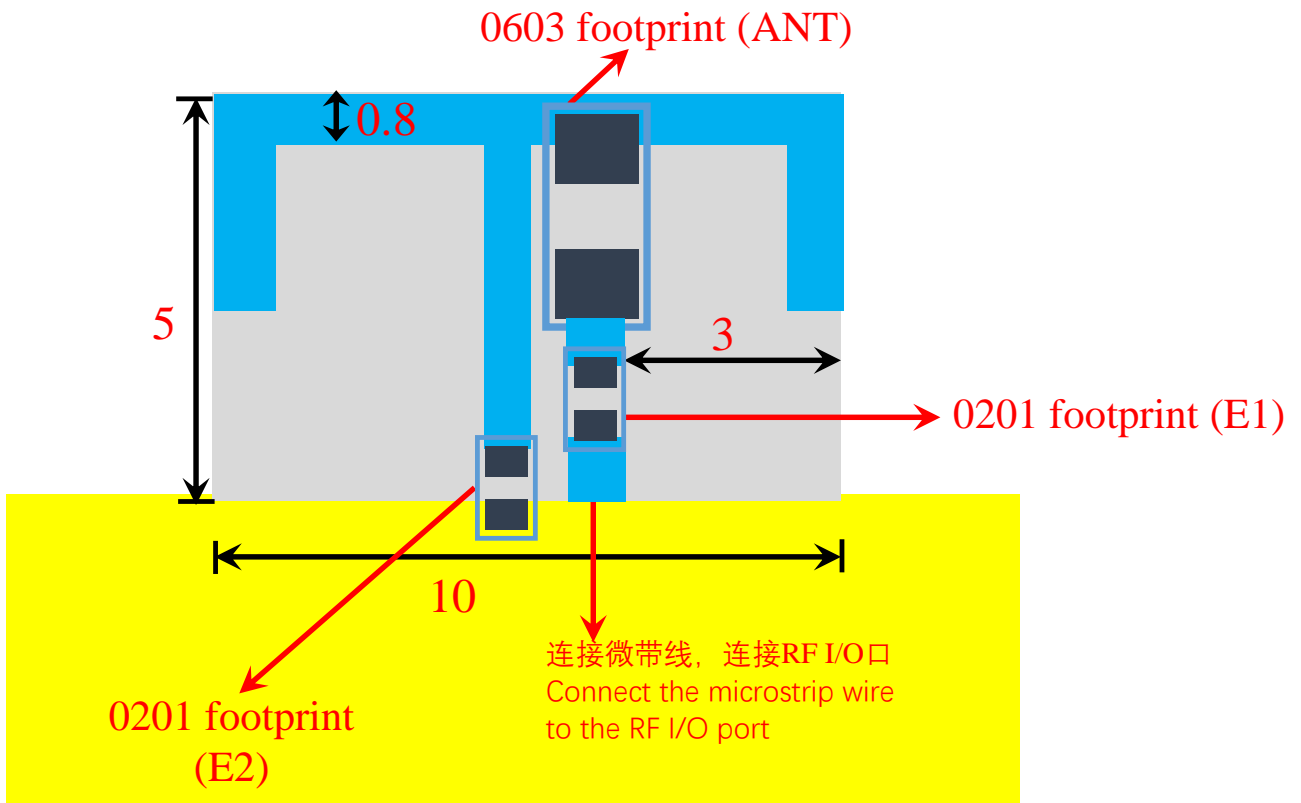


P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Layout-3 (5mm×7mm)**



✓ **Layout-4 (5mm×10mm)**



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.

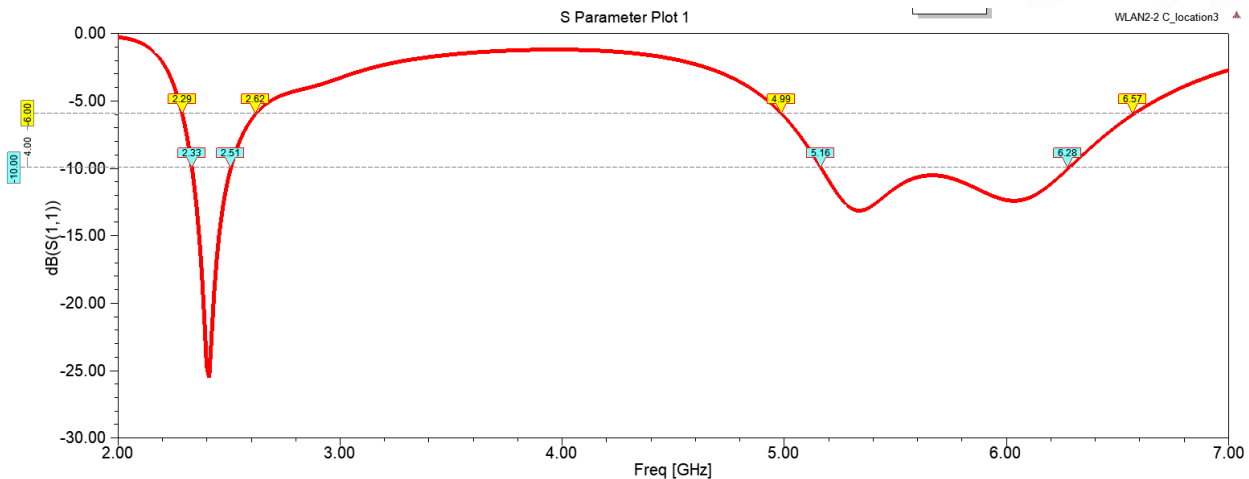
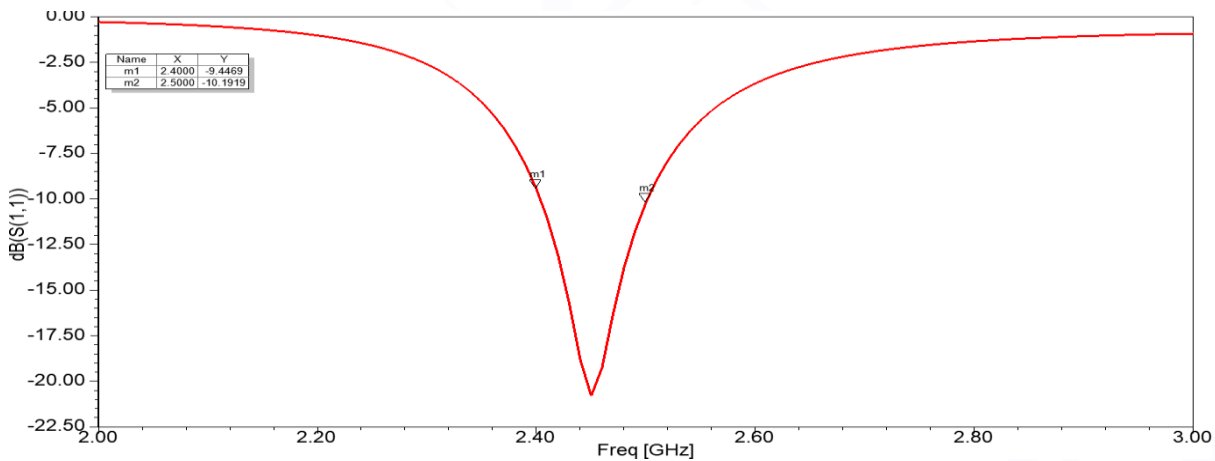


P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Electrical Characteristics:**

	Feature	Specification
1	Central frequency	2.4GHz&5.5GHz
2	Bandwidth	>150MHz
3	Peak gain	>3dBi
4	VSWR	<2
5	Antenna type	SMD
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

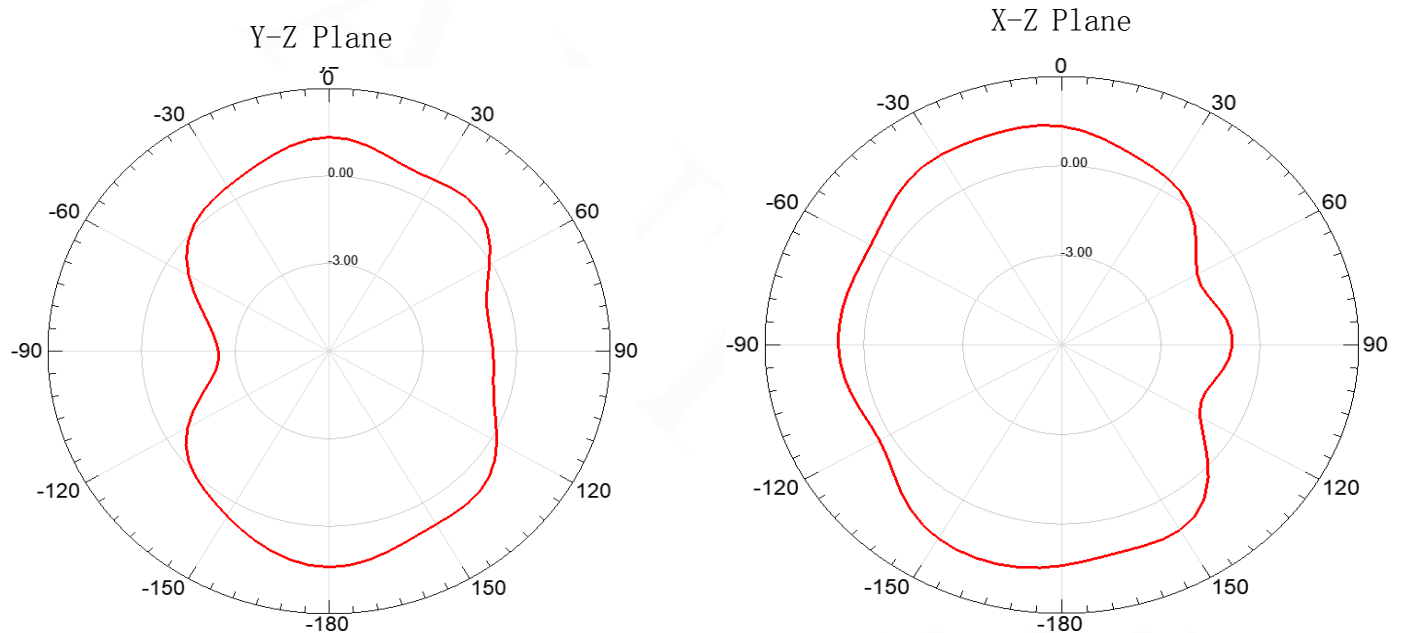
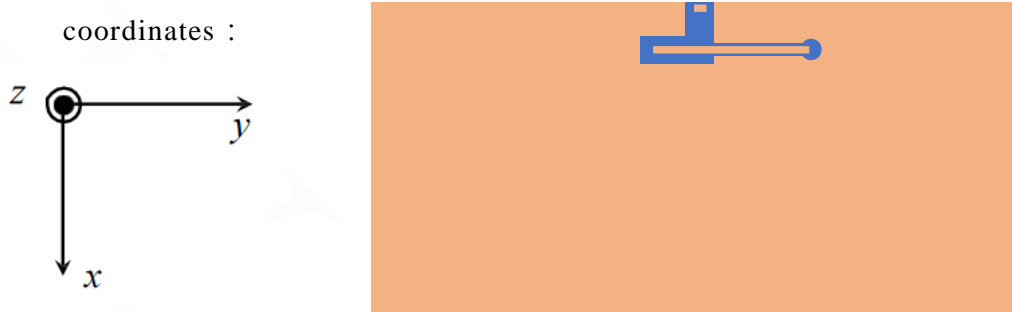
✓ **Characteristic Curves:**



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.



✓ **Radiation Pattern:**



✓ **Radiation Performance:**

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



P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Dependability Test**

Test Temperature	25°C ± 5°C
Operating Temperature	-25°C~+125°C
Temperature	5~40°C
Relative Humidity	20~70%

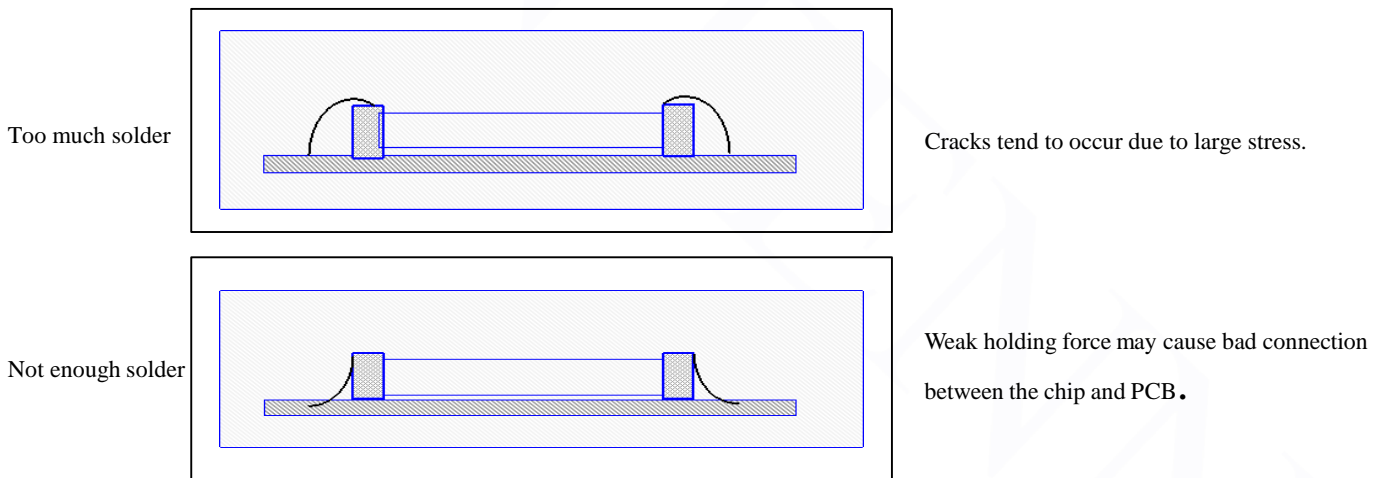
✓ **Moisture Proof**

Temperature: 40±2°C Humidity: 90~95%RH
Duration: 500h
Recovery conditions: Room temperature Recovery Time: 24h (Class1) or 48h (Class2)

✓ **Solderability**

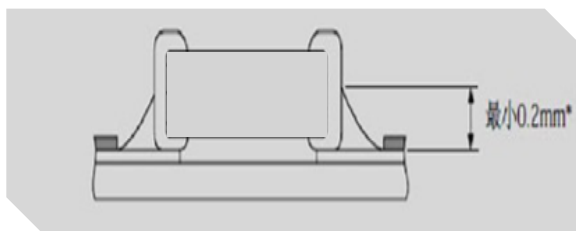
At least 95% of the terminal electrode is covered by new solder.
Preheating conditions:80 to 120°C; 10~30s.
Solder Temperature:235 ± 5°C Duration:2 ± 0.5s, Solder Temperature:245±5°C Duration:2±0.5s

✓ **Optimum Solder Amount for Reflow Soldering**

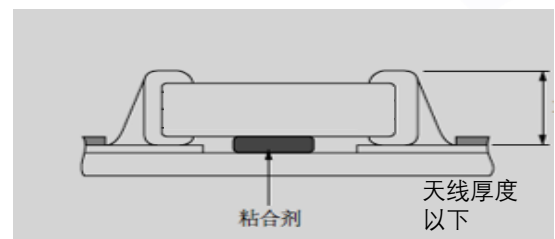


✓ **Recommended Soldering Amounts**

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



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.



P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

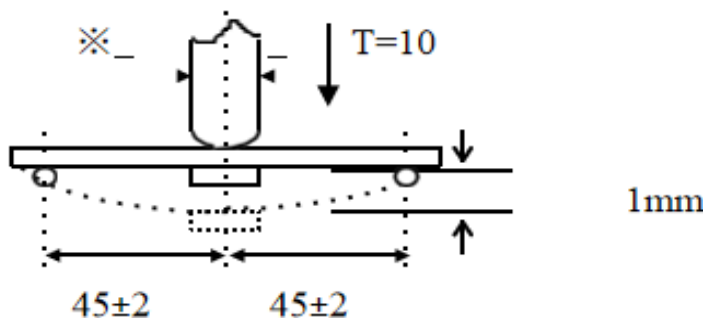
✓ **Temperature Cycle Test**

10 ± 1S Applied Force: 5N Duration: 10 ± 1S
Preheating conditions: up-category temperature, 1h
Recovery time: 24 ± 1h
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 ± 0.5s; Solder Temperature: 245 ± 5 °C
Duration: 2 ± 0.5s; Preheating 100 to 200 °C; 10 ± 2min.
Solder Temperature: 265 ± 5 °C; Duration: 10 ± 1s
Clean the capacitor with solvent and examine it with a 10X(min.) microscope.
Recovery Time: 24 ± 2h
Recovery condition: Room temperature

✓ **Resistance to Flexure of Substrate**



Test Board: Al₂O₃ or PCB Warp: 1mm Speed: 0.5mm/sec.
Unit: mm

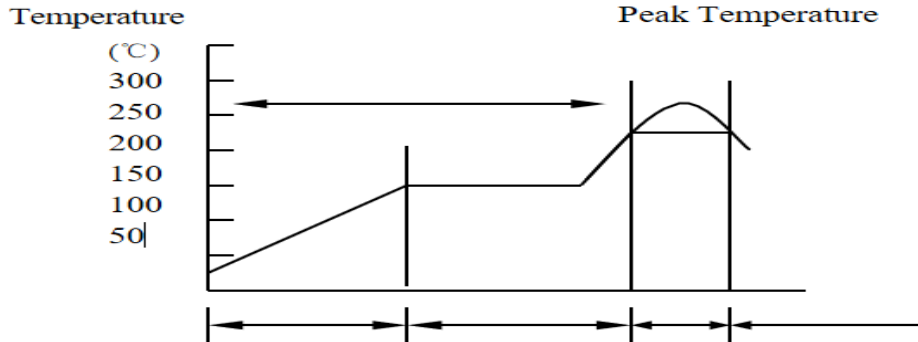
The measurement should be made with the board in the bending position.



P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

The temperature profile for soldering

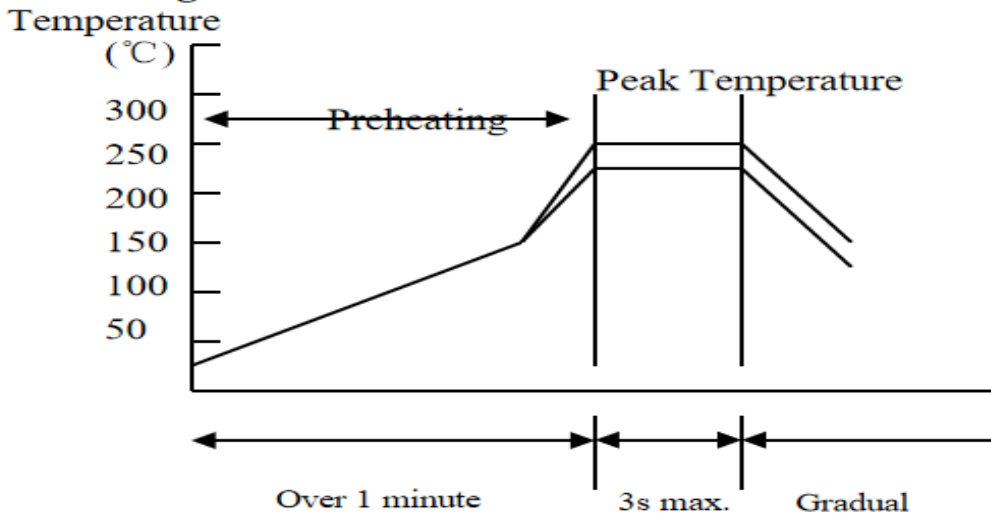
Re-flow soldering



	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 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



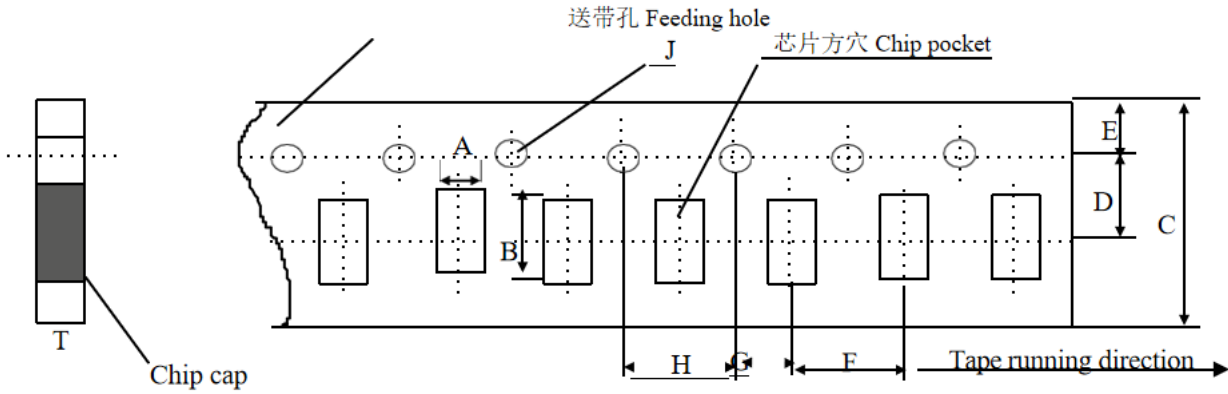
	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 Peak temperature	230°C ~ 260°C	240°C ~ 270°C

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.



P/N: HY160808 SRF07, HY160808 SRF08, HY160808 SRF09

✓ **Dimensions of paper taping**

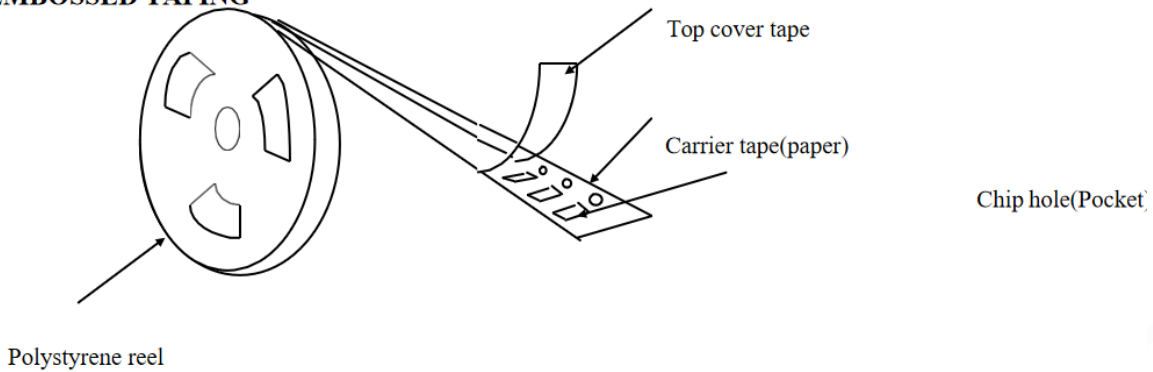


Unit: mm

代号 Code 纸带规格 papersize	A	B	C	D*	E	F	G*	H	J	T
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)

EMBOSED TAPING



✓ **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.