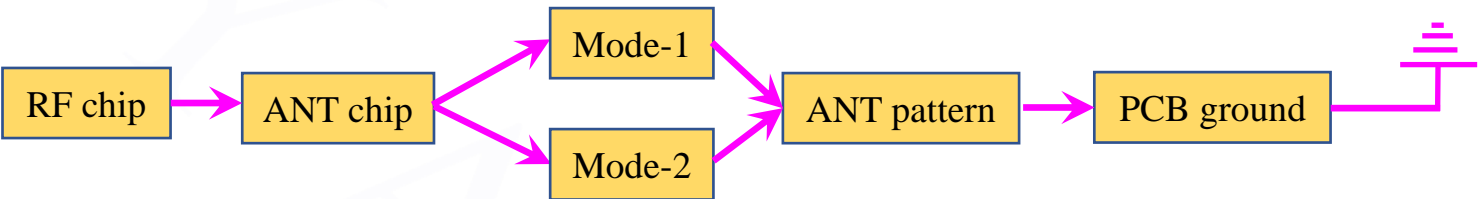




**P/N: HY160808 SRF09**

✓ **Features:**

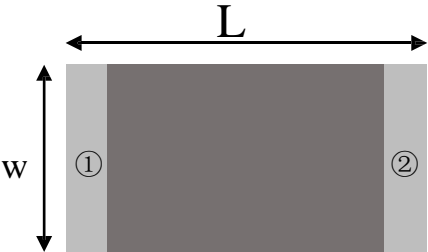
- 1. Surface mounted element with a small dimension of  $1.6 \times 0.8 \times 0.8$  mm meet future miniaturization trend.
- 2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beatifying the housing of final product.
- 3. Miniaturization,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

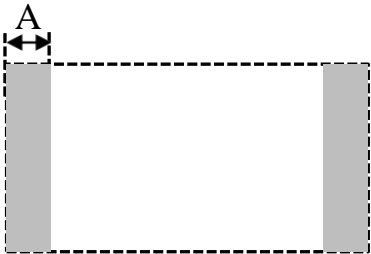
- 1. Bluetooth
- 2. Dual-band WLAN
- 3. ISM and UWB

✓ **Dimensions (Unit: mm)**

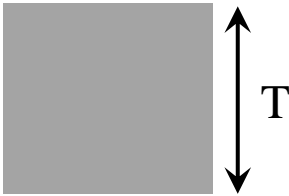


( Top View )

Number	Terminal Name
①	INPUT
②	NC



( Bottom View )



( Side View )

Symbols	L	W	T	A
Dimensions	$1.60 \pm 0.20$	$0.80 \pm 0.20$	$0.80 \pm 0.20$	$0.30 \pm 0.10$

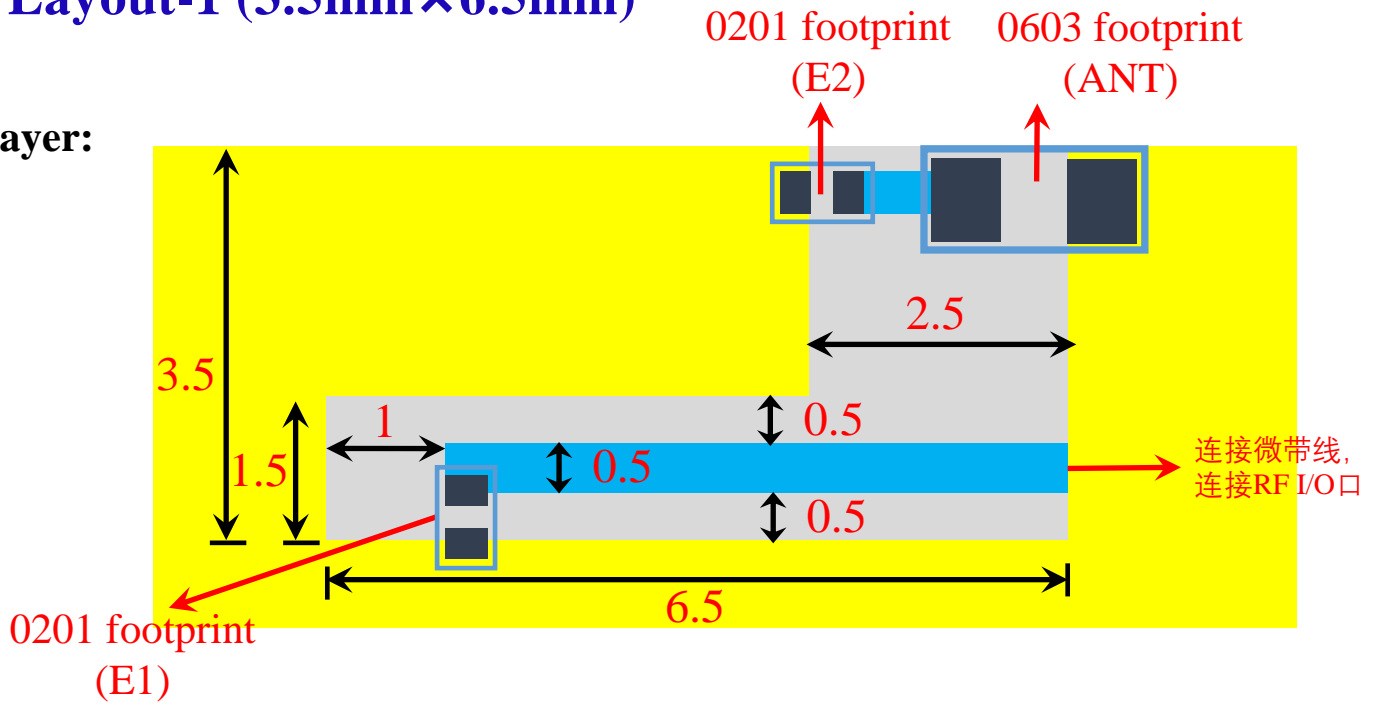
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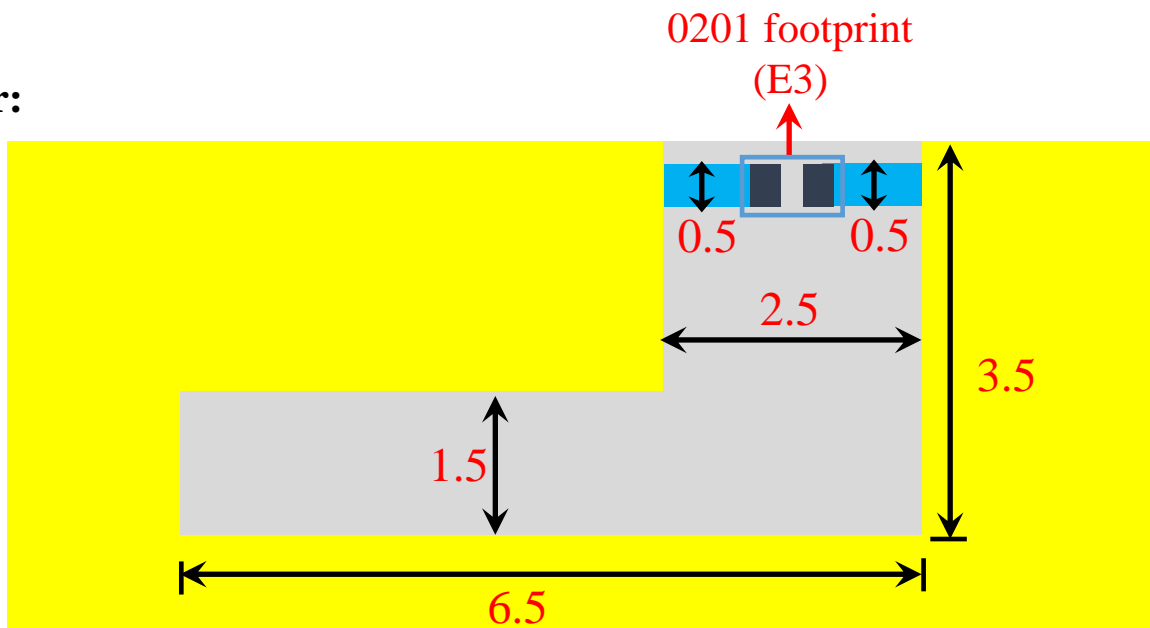
P/N: HY160808 SRF09

✓ Layout-1 (3.5mm×6.5mm)

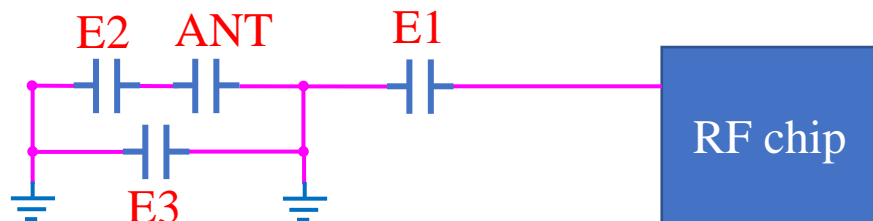
Top layer:



Bottom layer:



Equivalent circuit:

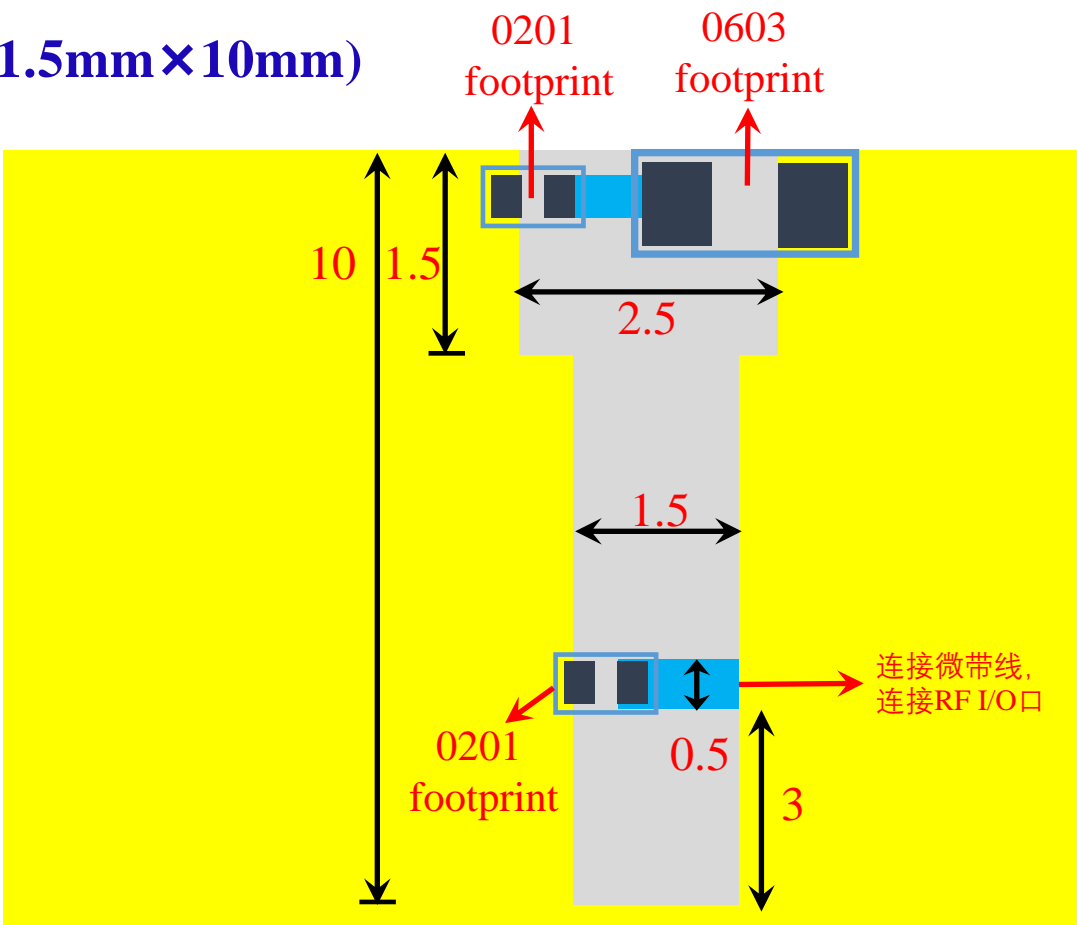




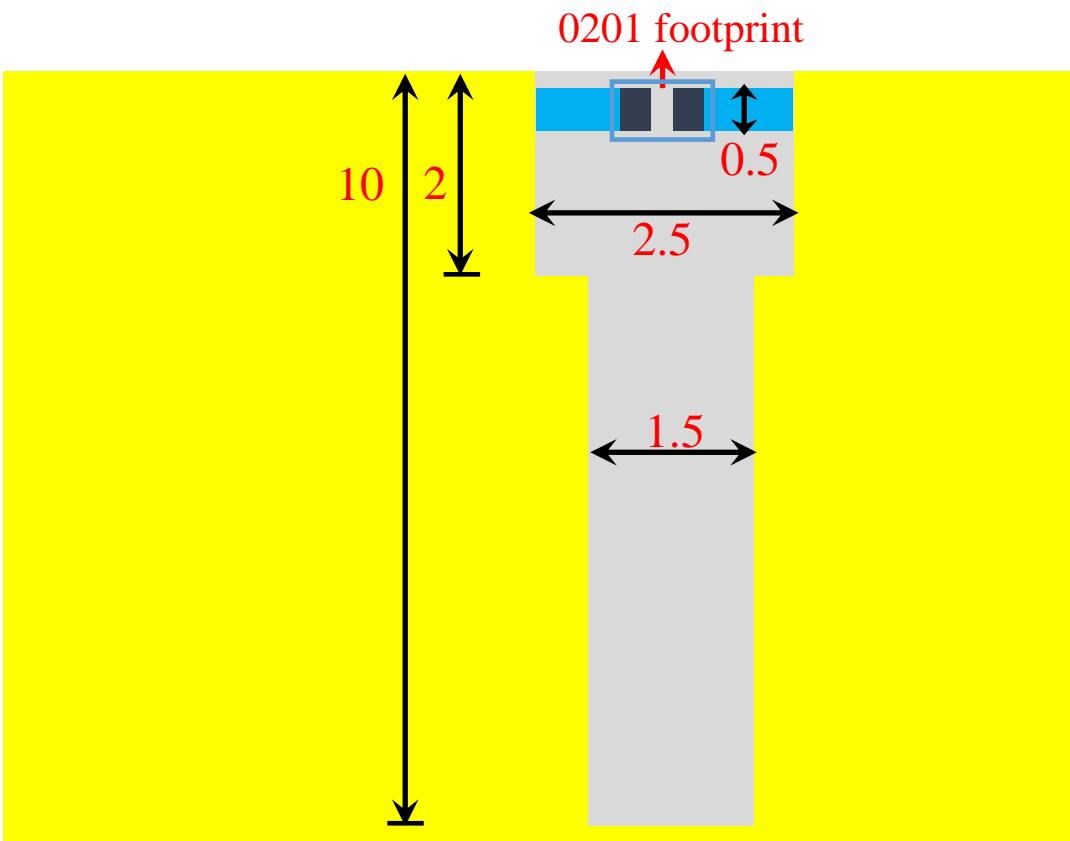
P/N: HY160808 SRF09

✓ Layout-2 (1.5mm×10mm)

Top layer:



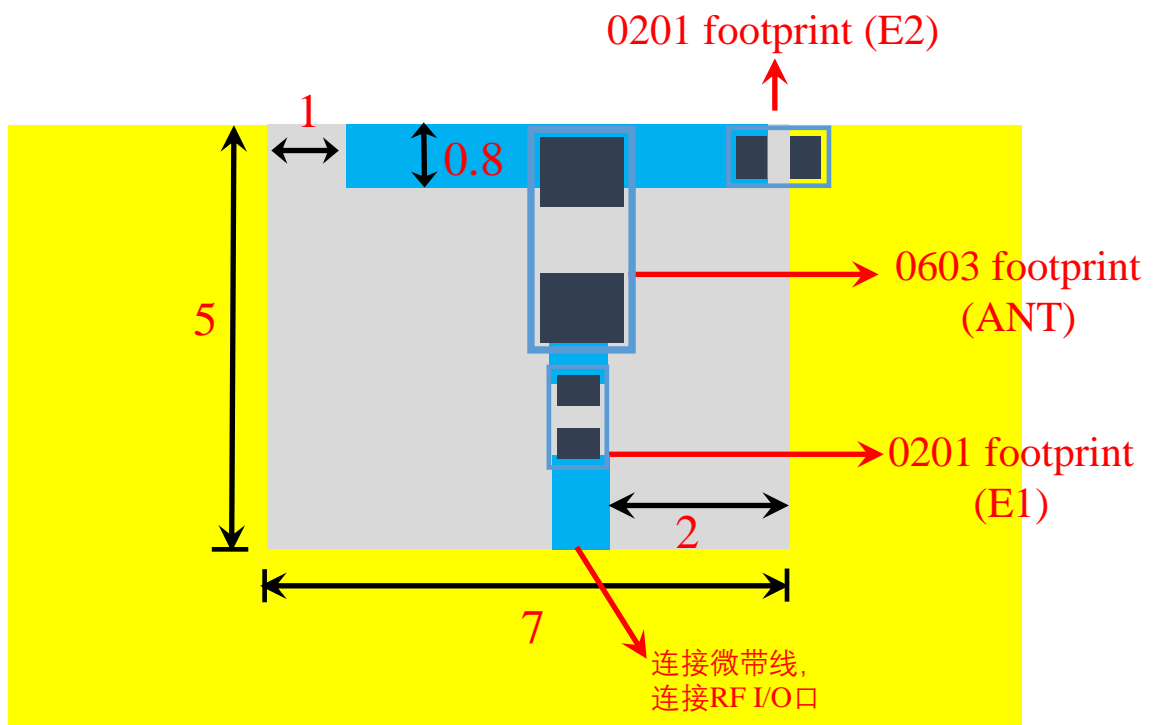
Bottom layer:



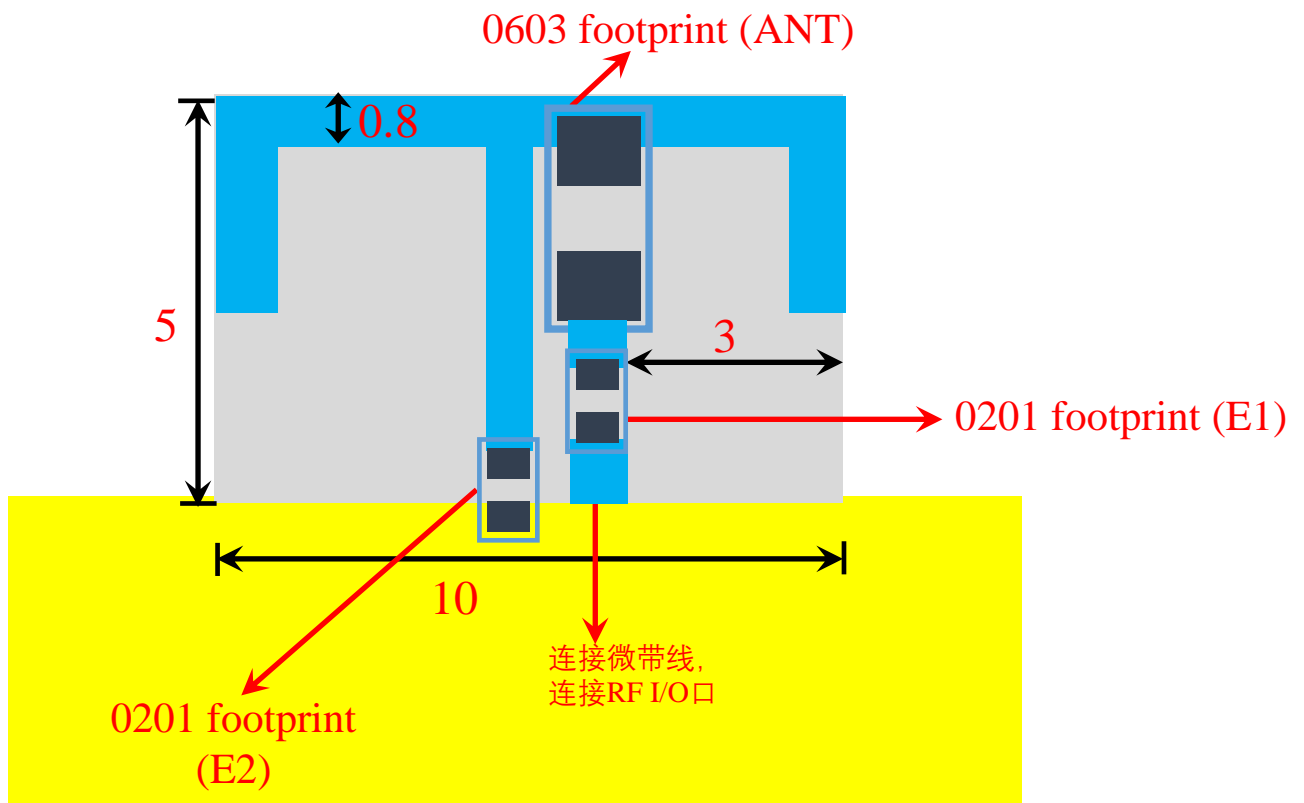


P/N: HY160808 SRF09

✓ **Layout-3 (5mm×7mm)**



✓ **Layout-4 (5mm×10mm)**



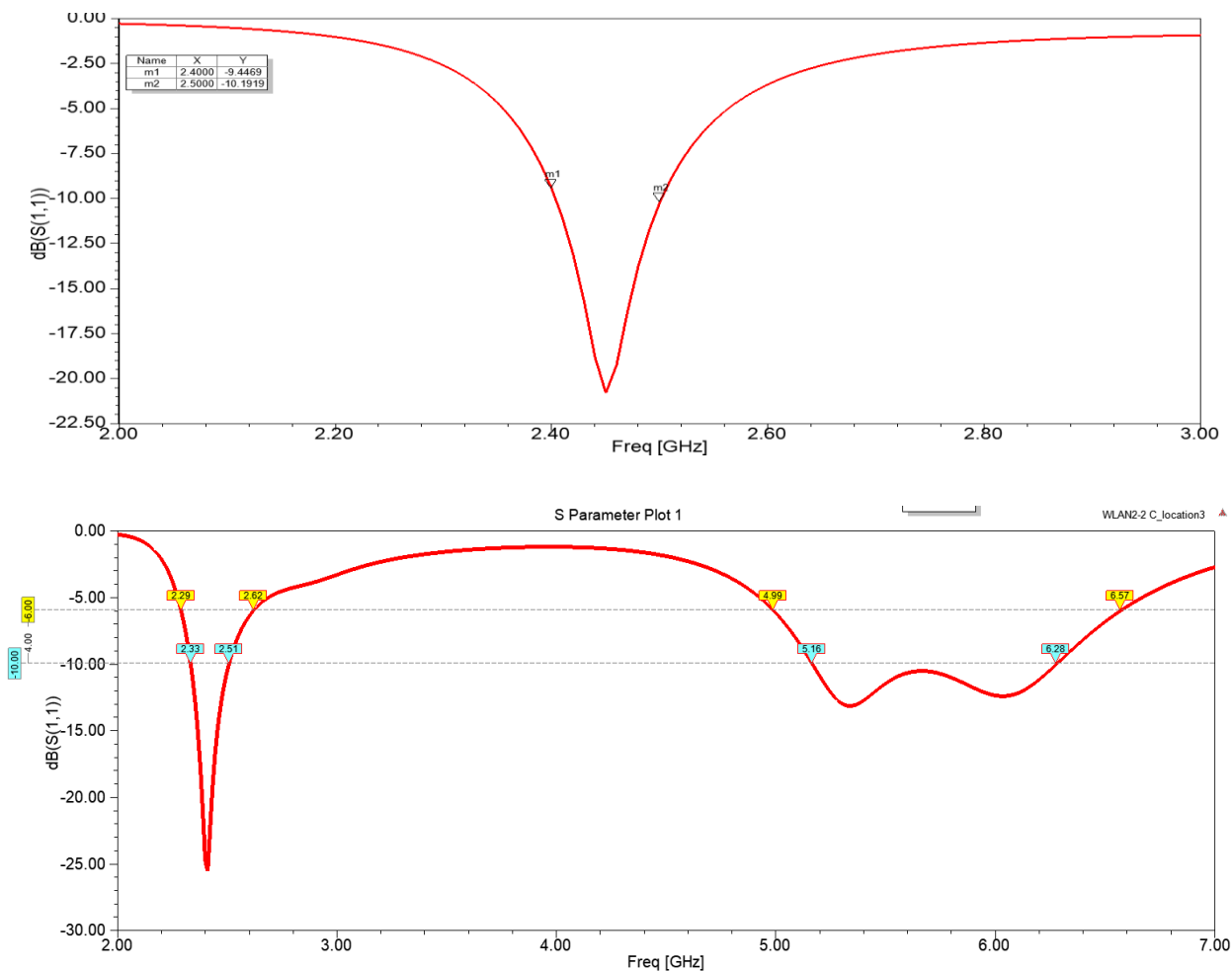


**P/N: HY160808 SRF09**

## ✓ 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 $\Omega$

## ✓ Characteristic Curves:

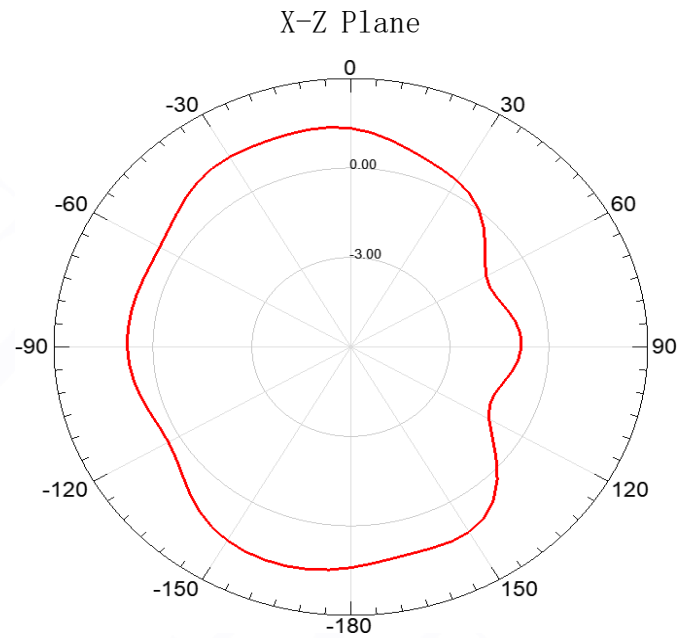
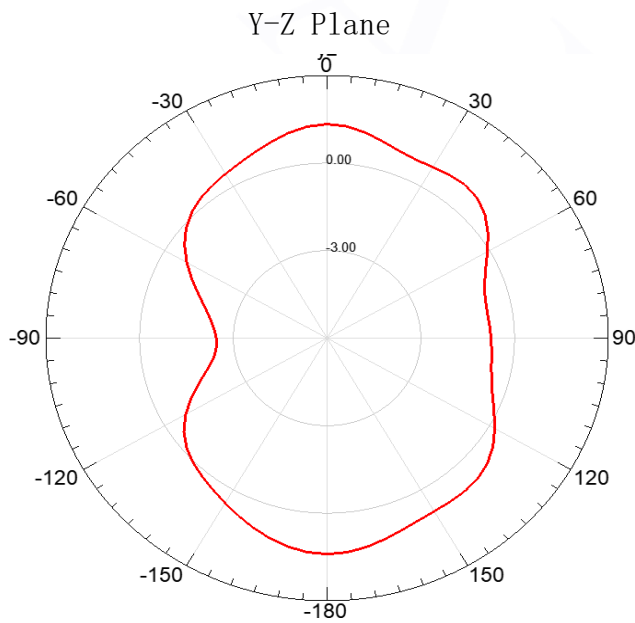
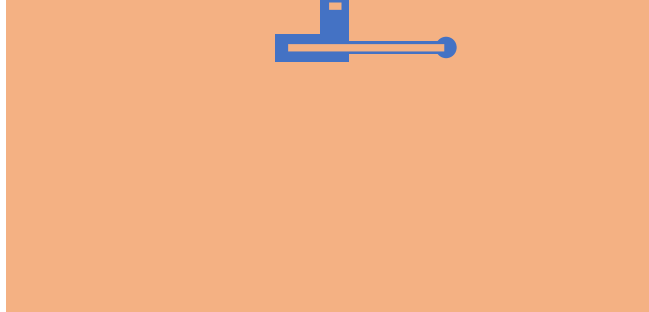
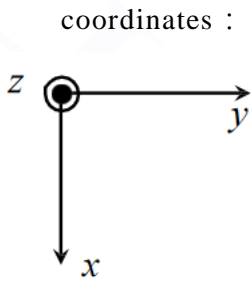


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**P/N: HY160808 SRF09**

## ✓ 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 SRF09

## ✓ 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	$5 \sim 40^{\circ}\text{C}$
Relative Humidity	20~70%

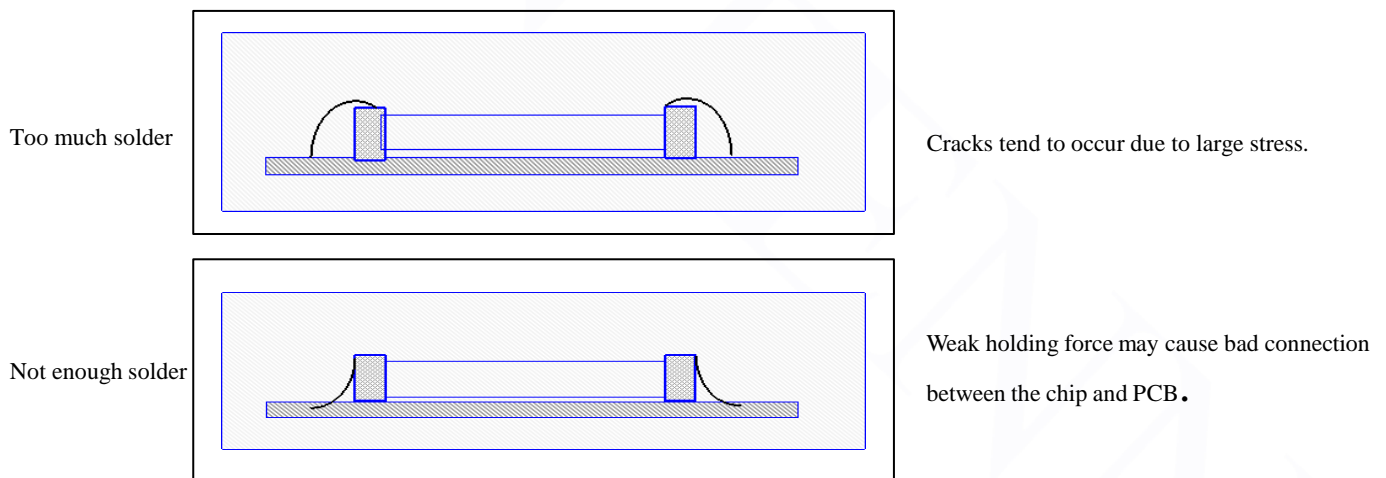
## ✓ Moisture Proof

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

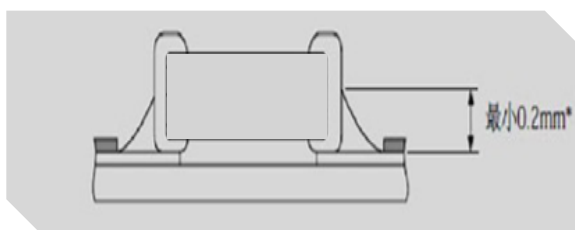
At least 95% of the terminal electrode is covered by new solder.  
Preheating conditions:  $80$  to  $120^{\circ}\text{C}$ ; 10~30s.  
Solder Temperature:  $235 \pm 5^{\circ}\text{C}$  Duration:  $2 \pm 0.5\text{s}$ , Solder Temperature:  $245 \pm 5^{\circ}\text{C}$  Duration:  $2 \pm 0.5\text{s}$

## ✓ Optimum Solder Amount for Reflow Soldering

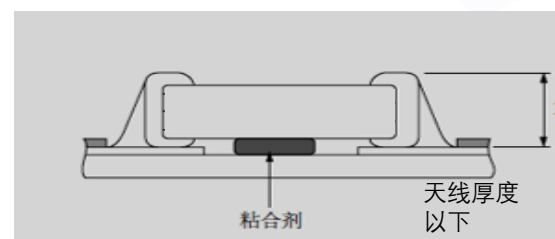


## ✓ Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



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**P/N: HY160808 SRF09**

✓ **Temperature Cycle Test**

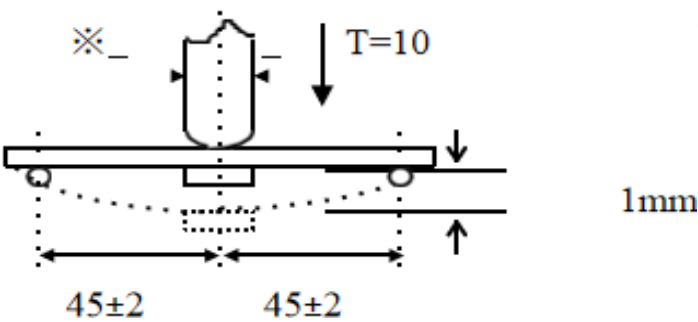
10±1S Applied Force: 5N Duration: 10±1S  
Preheating conditions: up-category temperature, 1h  
Recovery time: 24±1h  
Initial Measurement  
Cycling Times: 5 times, 1 cycle, 4 steps:

阶段	温度 (℃)	时间 (分钟)
第 1 步	下限温度( <small>NPO/X7R/X7S/X6S/X5R:-55 Y5V:-25 Z5U:+10</small> )	30
第 2 步	常温 (+20)	2~3
第 3 步	上限温度( <small>NPO/X7R/X7S: +125 Y5V/Z5U/X5R:-85 X6S:-105</small> )	30
第 4 步	常温 (+20)	2~3

✓ **Resistance to Soldering Heat**

Preheating 80 to 120℃; 10~30s.Solder Temperature: 235±5℃; Duration:2±0.5s; Solder Temperature: 245±5℃  
Duration: 2±0.5s; Preheating100 to 200℃; 10±2min.  
Solder Temperature: 265±5℃; 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: Al<sub>2</sub>O<sub>3</sub> or PCB Warp: 1mm Speed: 0.5mm/sec.  
Unit: mm

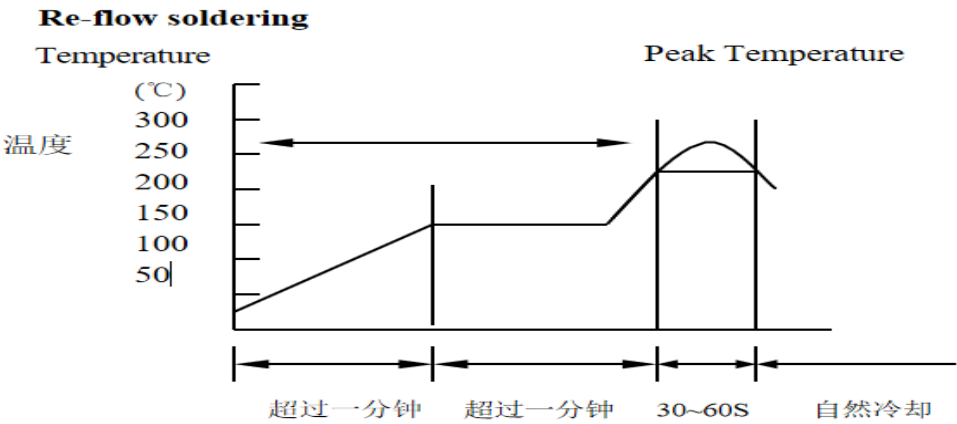
The measurement should be made with the board in the bending position.





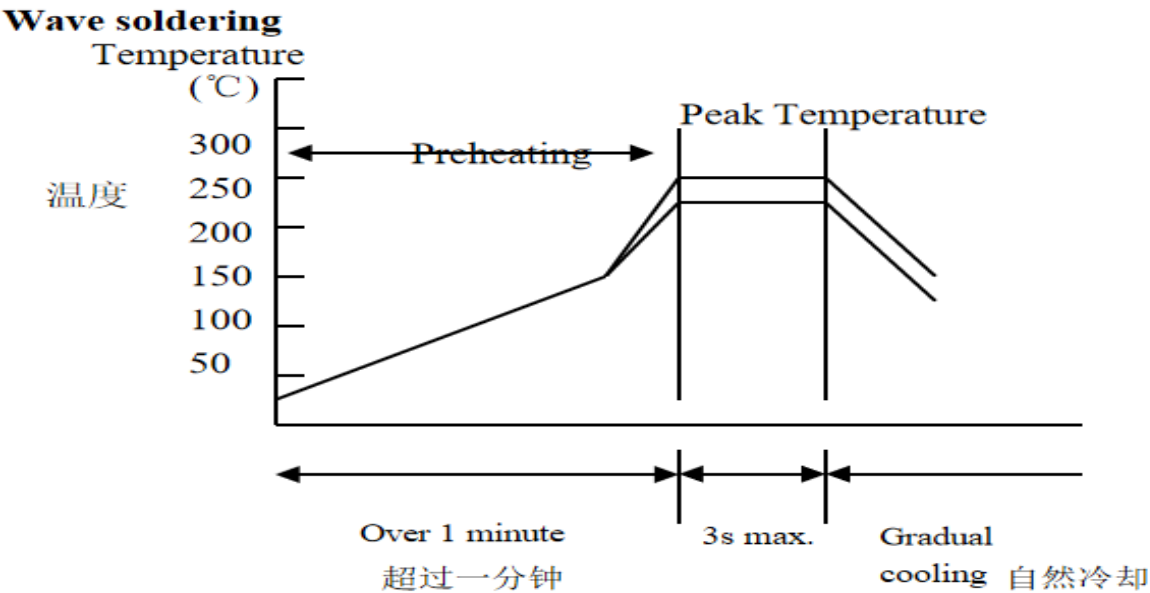
P/N: HY160808 SRF09

The temperature profile for soldering



	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 Peak temperature	230℃~250℃	240℃~260℃

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

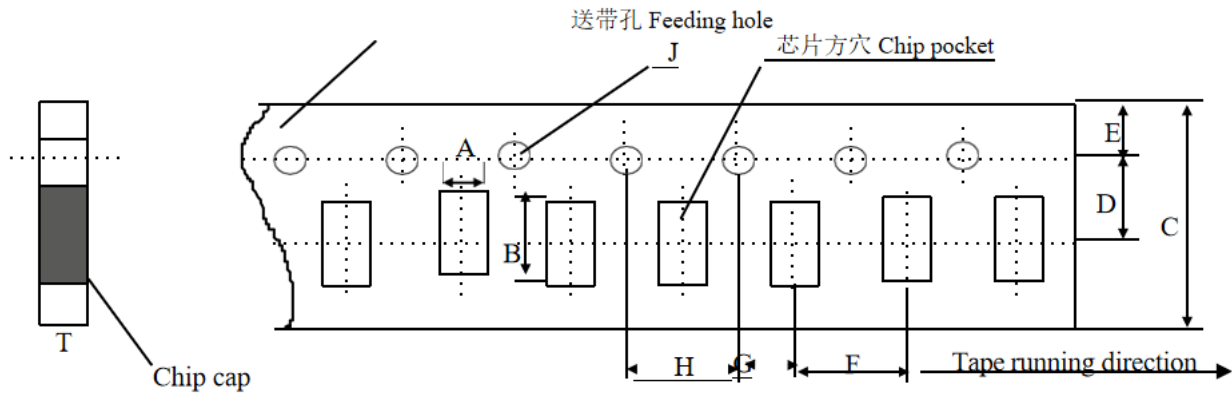


	Pb-Sn 焊接 Pb-Sn soldering	无铅焊接 Lead-free soldering
尖峰温度 Peak temperature	230℃~260℃	240℃~270℃



P/N: HY160808 SRF09

✓ **Dimensions of paper taping**

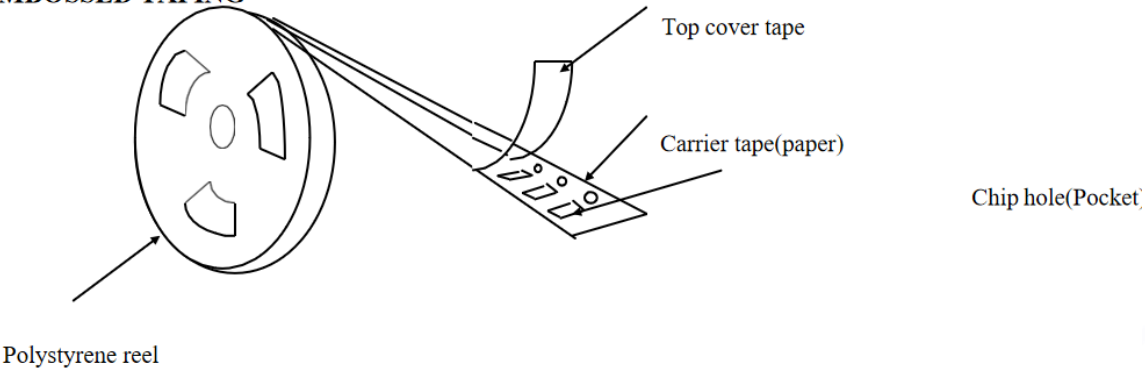


Unit: mm

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%

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