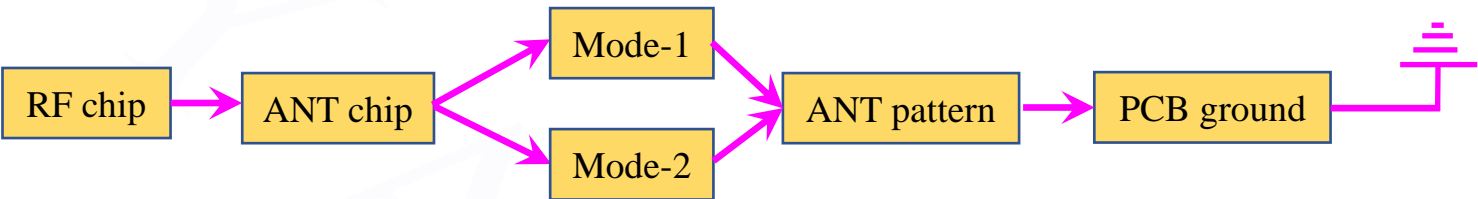




**P/N: HY160808 SRF09**

✓ **Features:**

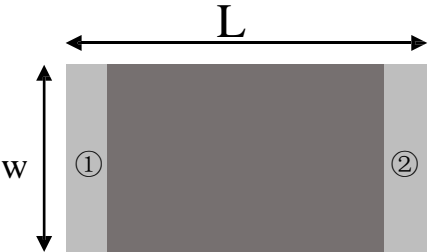
- 1. Surface mounted element with a small dimension of  $1.6 \times 0.8 \times 0.8$  mm meet future miniaturization trend.
- 2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beatifying the housing of final product.
- 3. Miniaturization,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

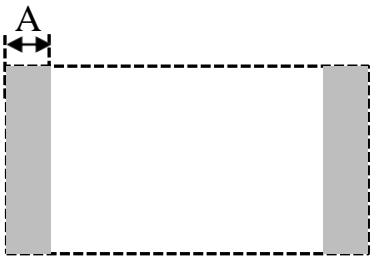
- 1. Bluetooth
- 2. Dual-band WLAN
- 3. ISM and UWB

✓ **Dimensions (Unit: mm)**

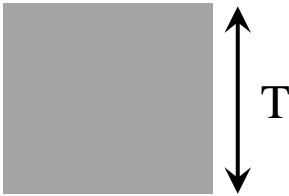


( Top View )

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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- **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  
Qianin 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

0201 footprint      0603 footprint  
(E2)                      (ANT)

ayer:

0201 footprint (E1)

RF I/O

Diagram illustrating the dimensions of a 0201 footprint (E3) on a PCB. The footprint is L-shaped, with a total width of 6.5 and a total height of 3.5. The top horizontal section is 2.5 wide and 0.5 high. The bottom horizontal section is 6.5 wide and 1.5 high. The vertical section is 0.5 wide and 3.0 high. A blue rectangle highlights the top horizontal section, and a red arrow points to it with the label '0201 footprint (E3)'.

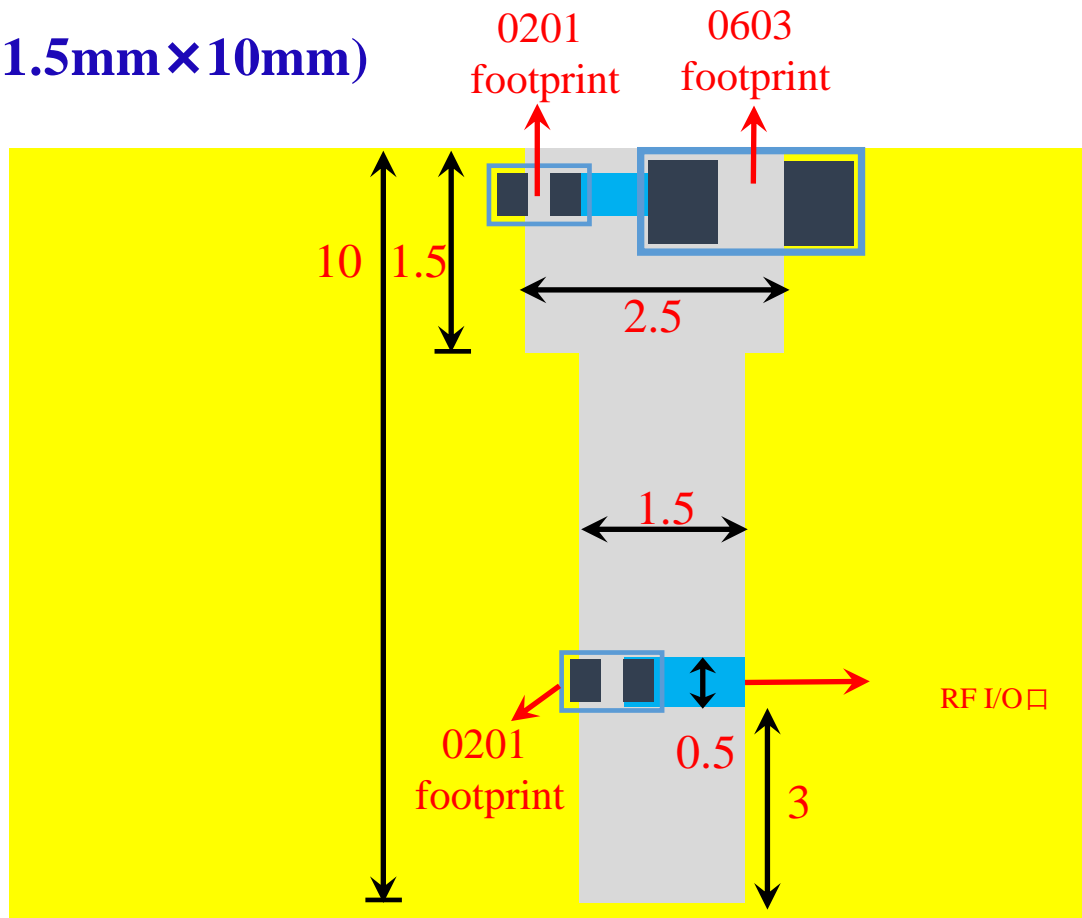
The diagram shows a bridge rectifier circuit. The input is connected to a 50 Ohm source. The bridge consists of four diodes: E2 (top-left), ANT (top-right), E1 (bottom-right), and E3 (bottom-left). The output of the bridge is connected to the RF chip. The ground symbol is shown at the input and output of the bridge.



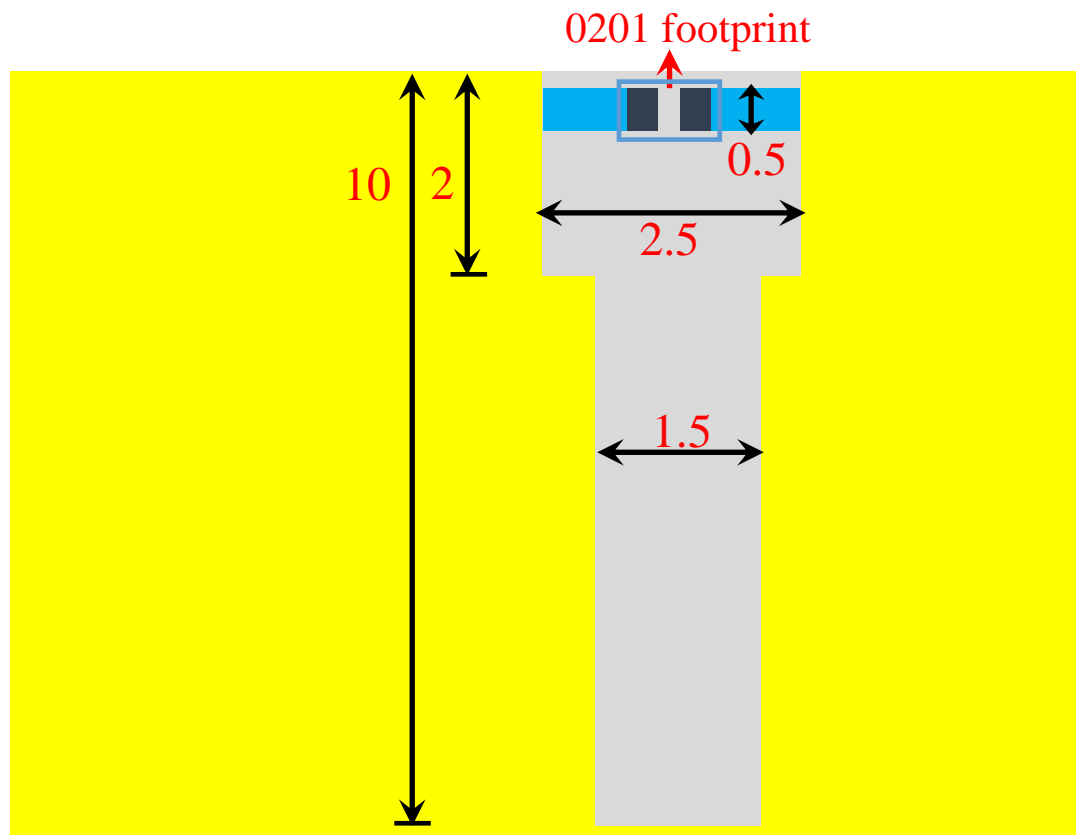
**P/N: HY160808 SRF09**

✓ **Layout-2 (1.5mm×10mm)**

**Top layer:**



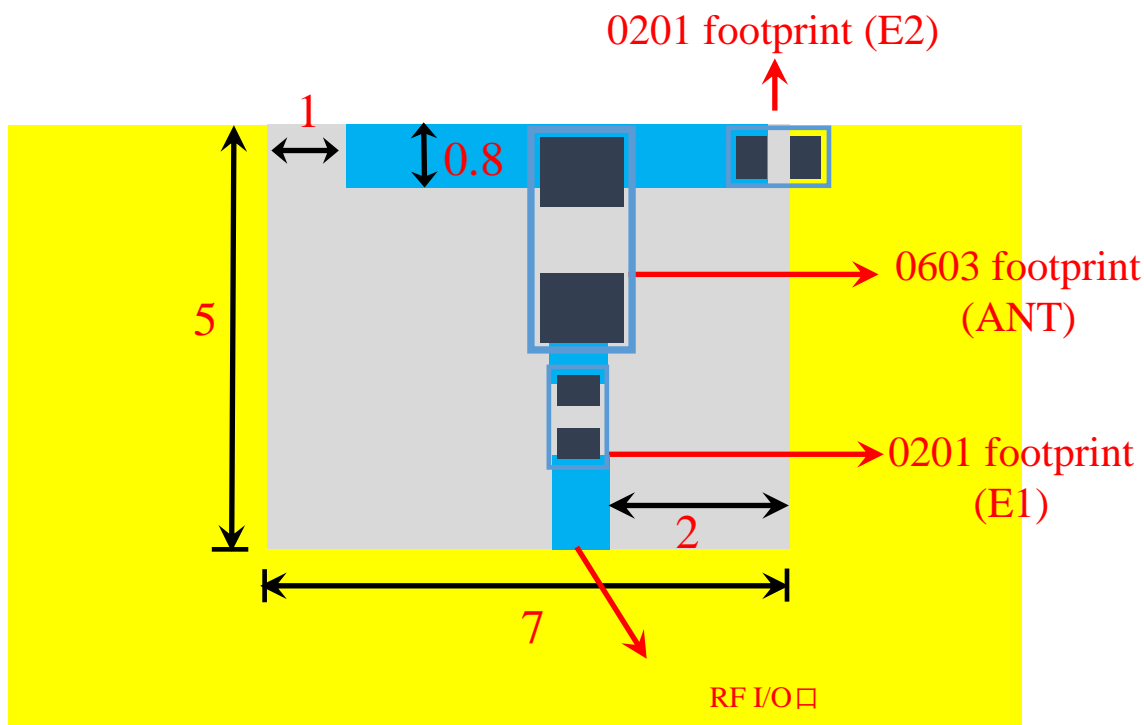
**Bottom layer:**



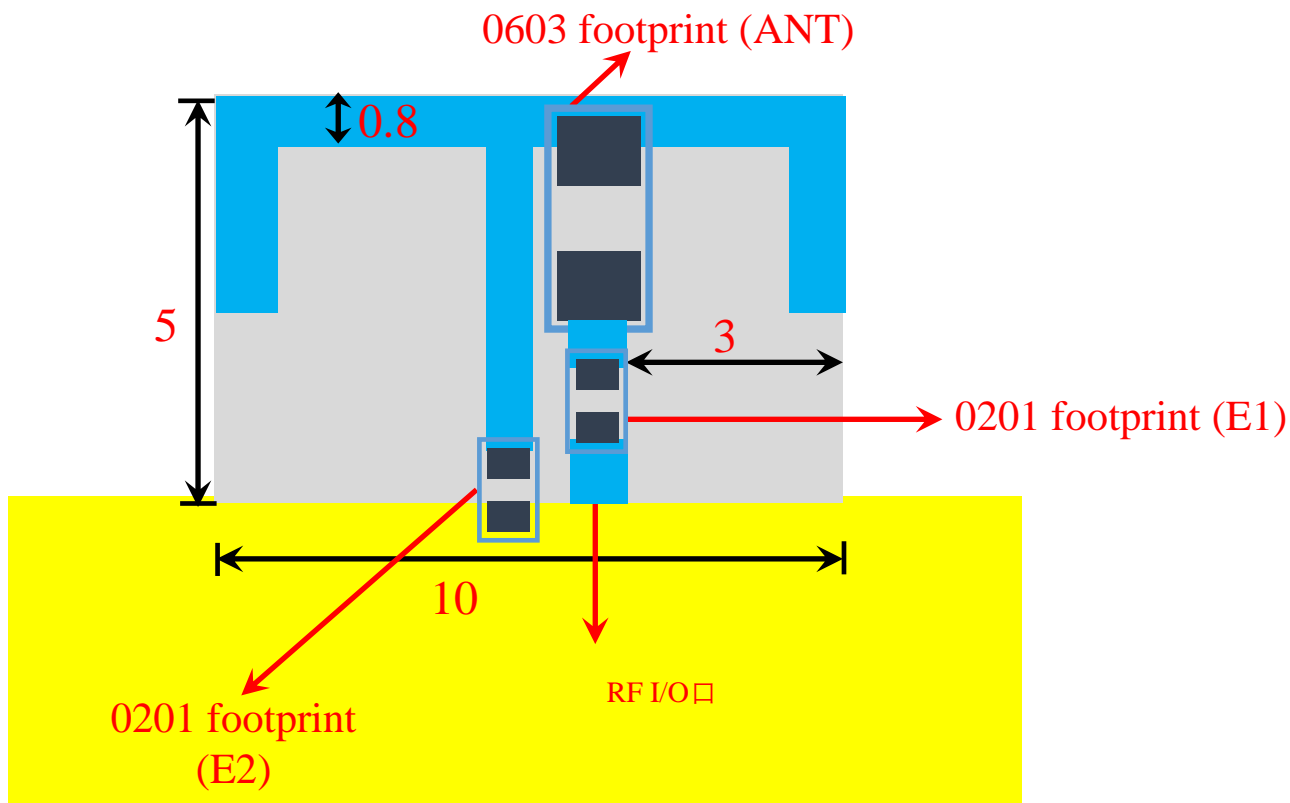


**P/N: HY160808 SRF09**

### ✓ Layout-3 (5mm×7mm)



### ✓ Layout-4 (5mm×10mm)



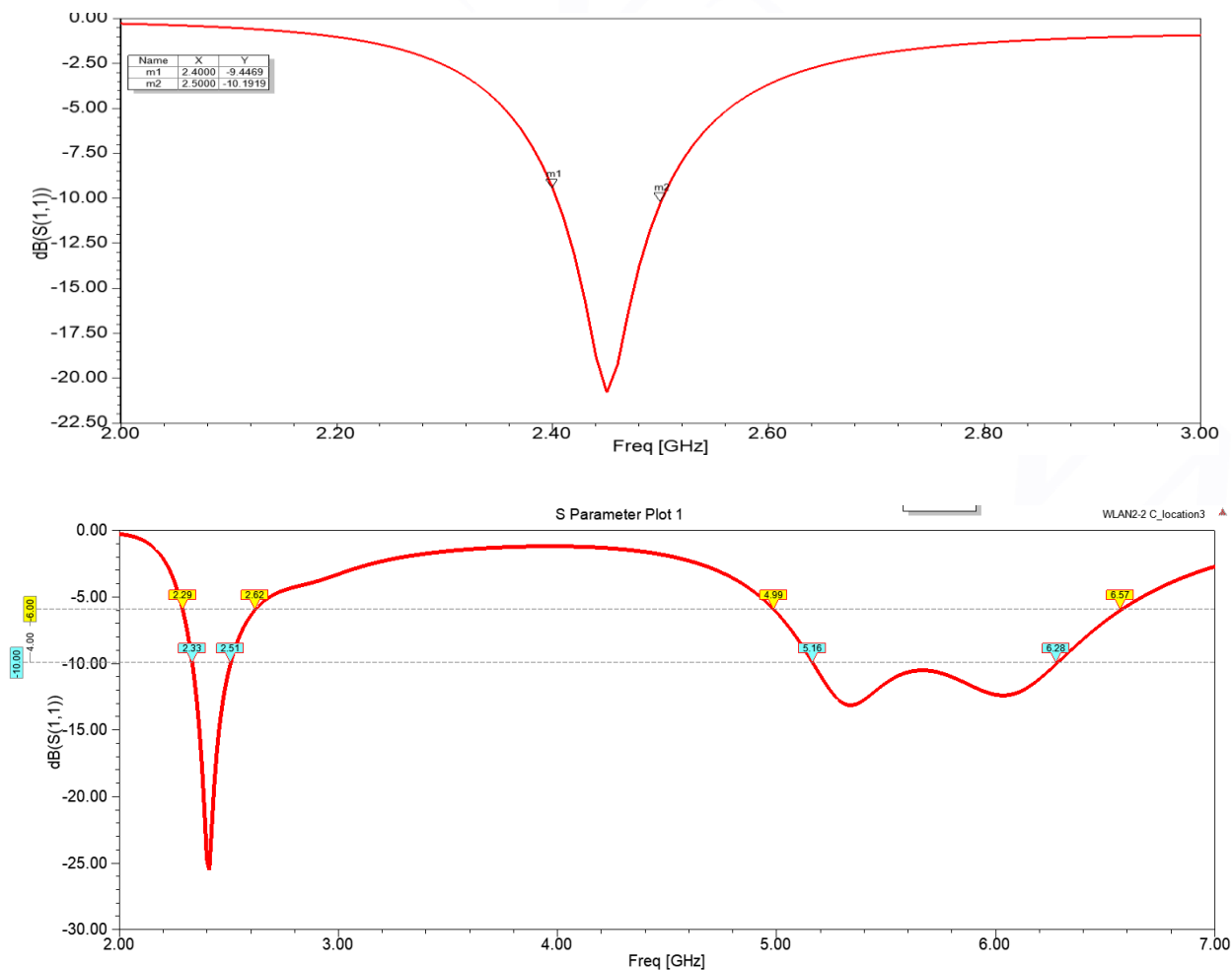


**P/N: HY160808 SRF09**

## ✓ 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:

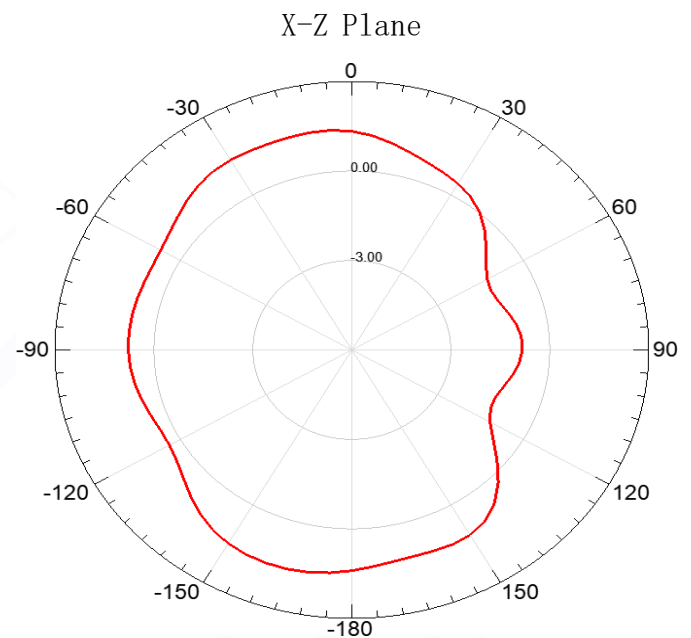
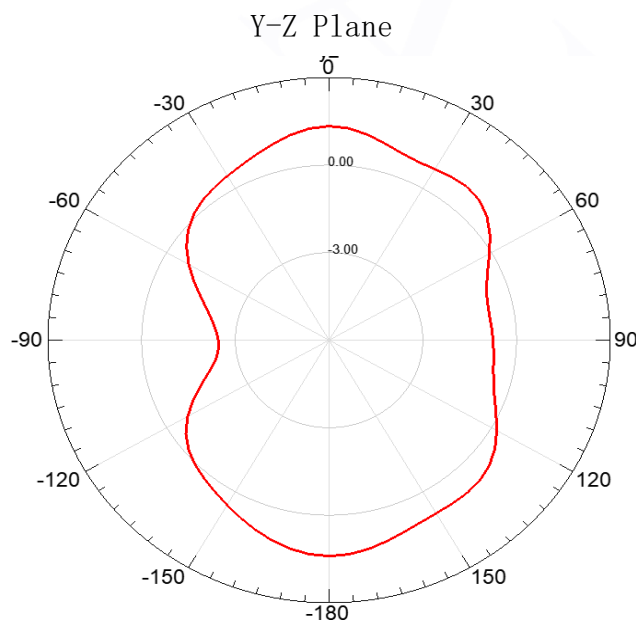
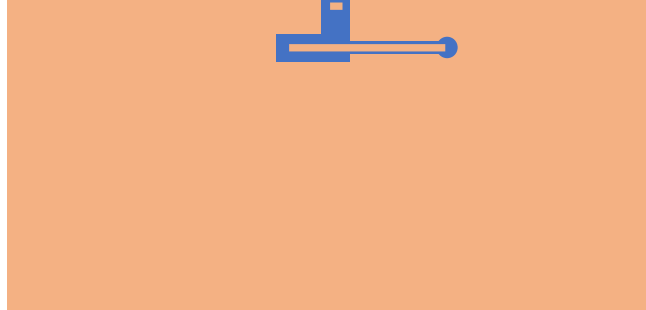
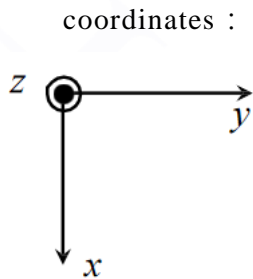


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**P/N: HY160808 SRF09**

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

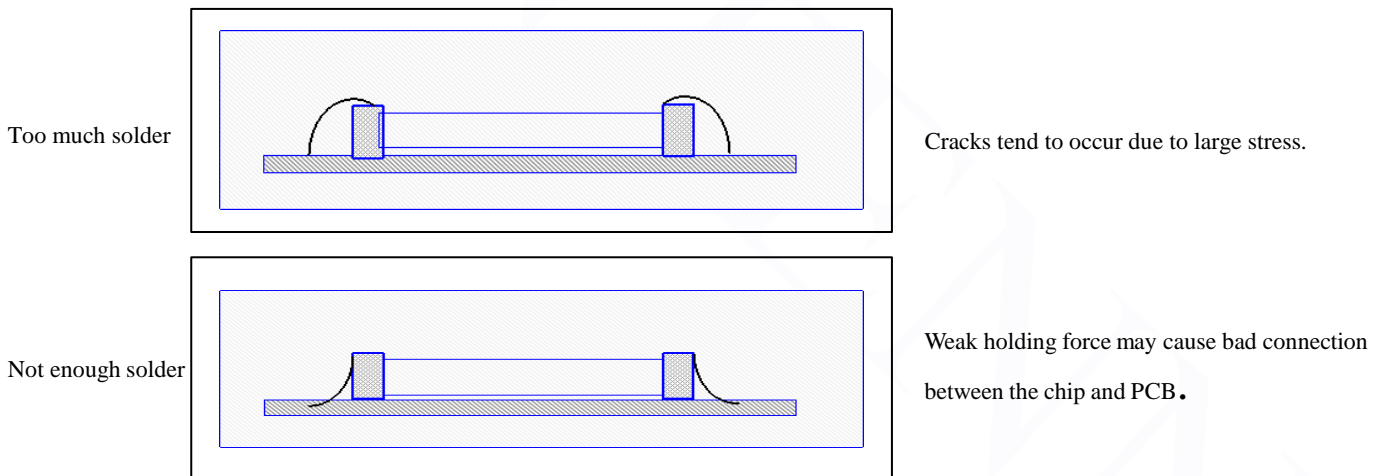
## ✓ Moisture Proof

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

## ✓ Solderability

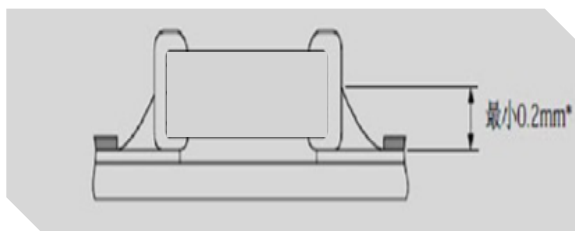
At least 95% of the terminal electrode is covered by new solder.  
Preheating conditions: 80 to 120°C; 10~30s.  
Solder Temperature: 235 ± 5°C Duration: 2 ± 0.5s, Solder Temperature: 245 ± 5°C Duration: 2 ± 0.5s

## ✓ Optimum Solder Amount for Reflow Soldering

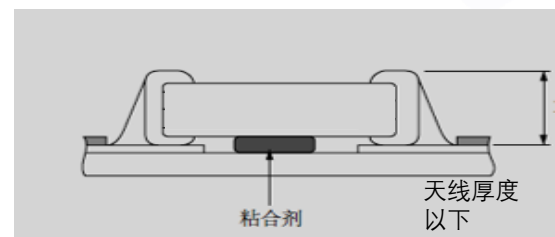


## ✓ Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering





**P/N: HY160808 SRF09**

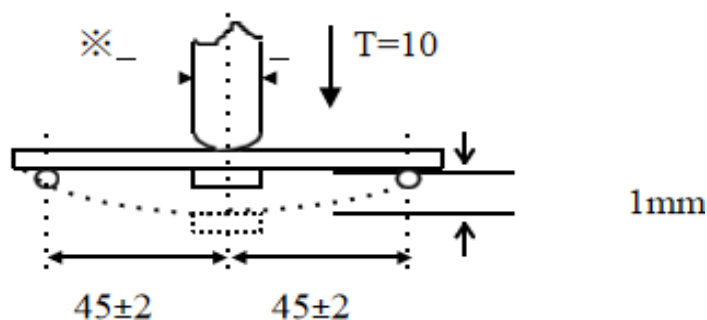
## ✓ Temperature Cycle Test

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:

## ✓ 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: 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.

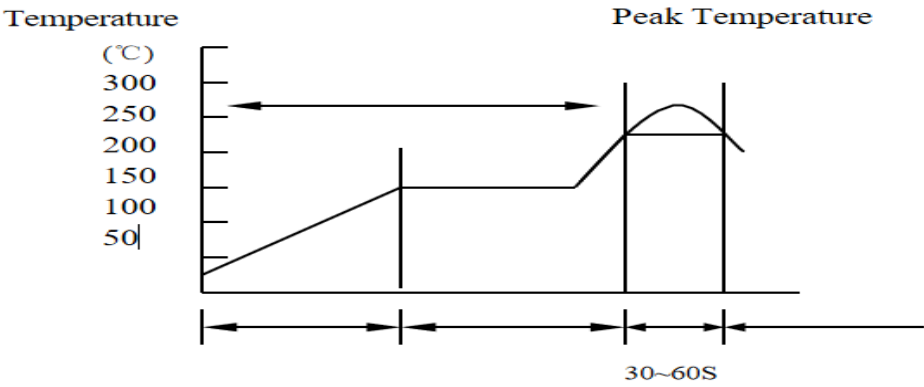




P/N: HY160808 SRF09

The temperature profile for soldering

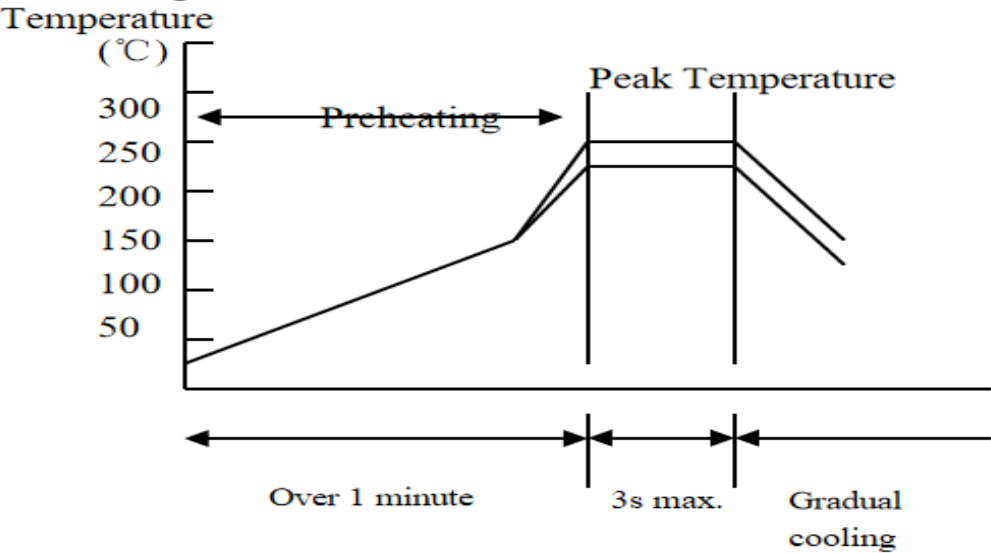
Re-flow soldering



	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

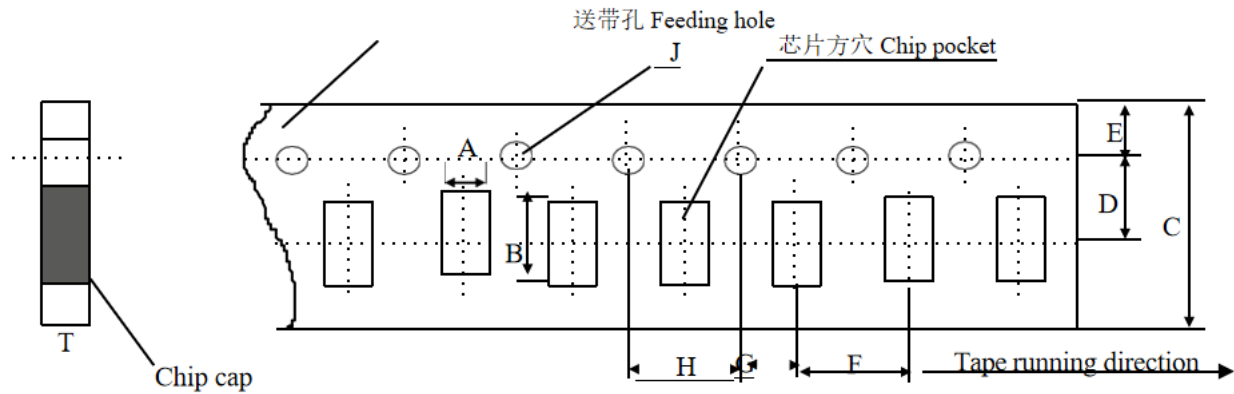


	Pb-Sn Pb-Sn soldering	Lead-free soldering
Peak temperature	230°C~260°C	240°C~270°C



P/N: HY160808 SRF09

✓ **Dimensions of paper taping**

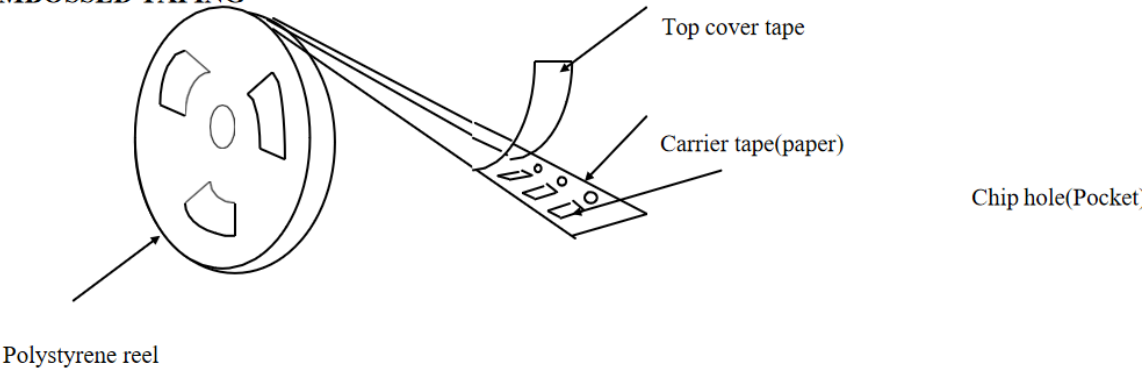


Unit: mm

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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