汉阳天线设计有限公司
Hanyang Antenna Design Co. Ltd.
深圳市宝安区前进二路宝运达物流信息大厦12A11
12A11, Baoyund a Logistics Infor mation Build ing, Qianjin 2nd Road , Baoan Distr ict, Shenzhen
青岛市崂山区松岭路399号海信产业园A1号楼606
Room 606, Building A1, Hisince Industrial Park, 399 Songling Road, Laoshan District, Qingdao City
电话：0755-23069700 传真：0755-23069700

P/N: HY160808 SRF09

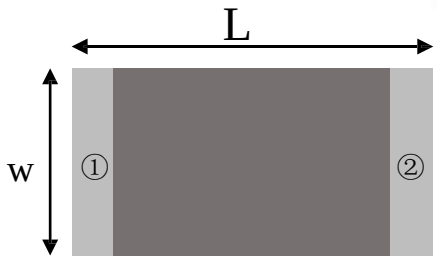
Features

1. Surface mounted devices with a small dimension of 1.6 × 0.8 × 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. High stability and low tolerance.

Applications

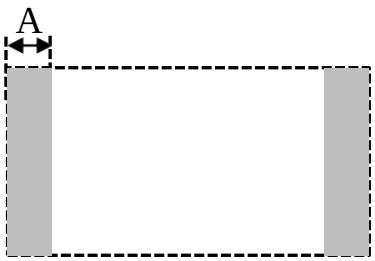
1. Bluetooth
2. Wireless LAN
3. ISM band 2.4GHz wireless applications

Dimensions (Unit: mm)

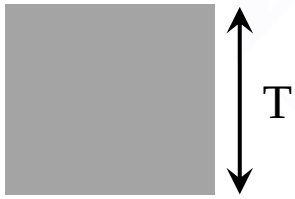


(Top View)

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

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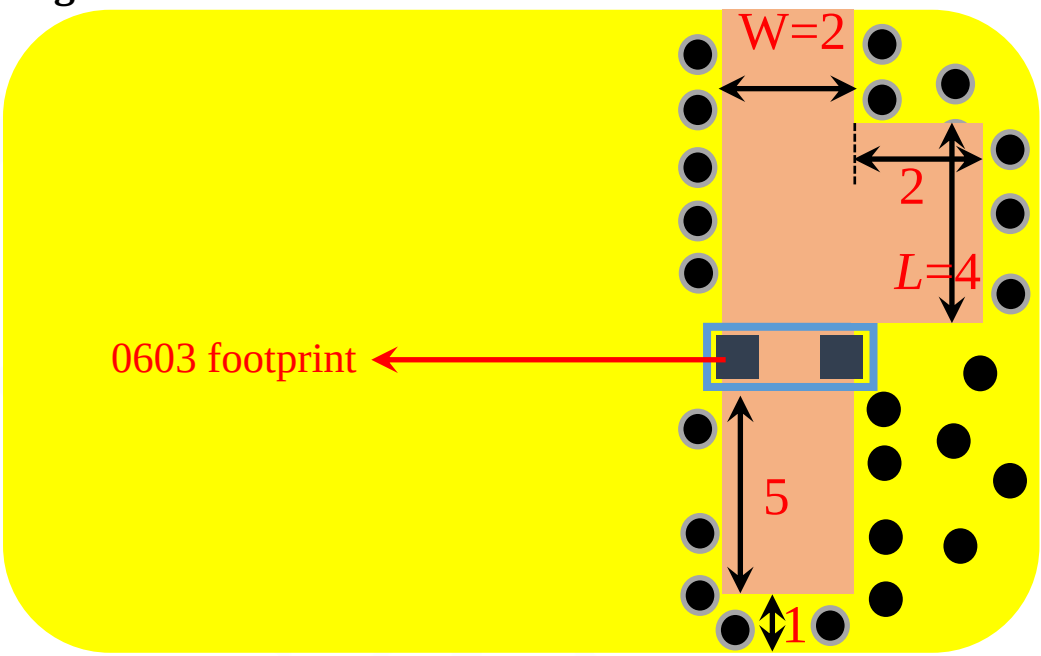
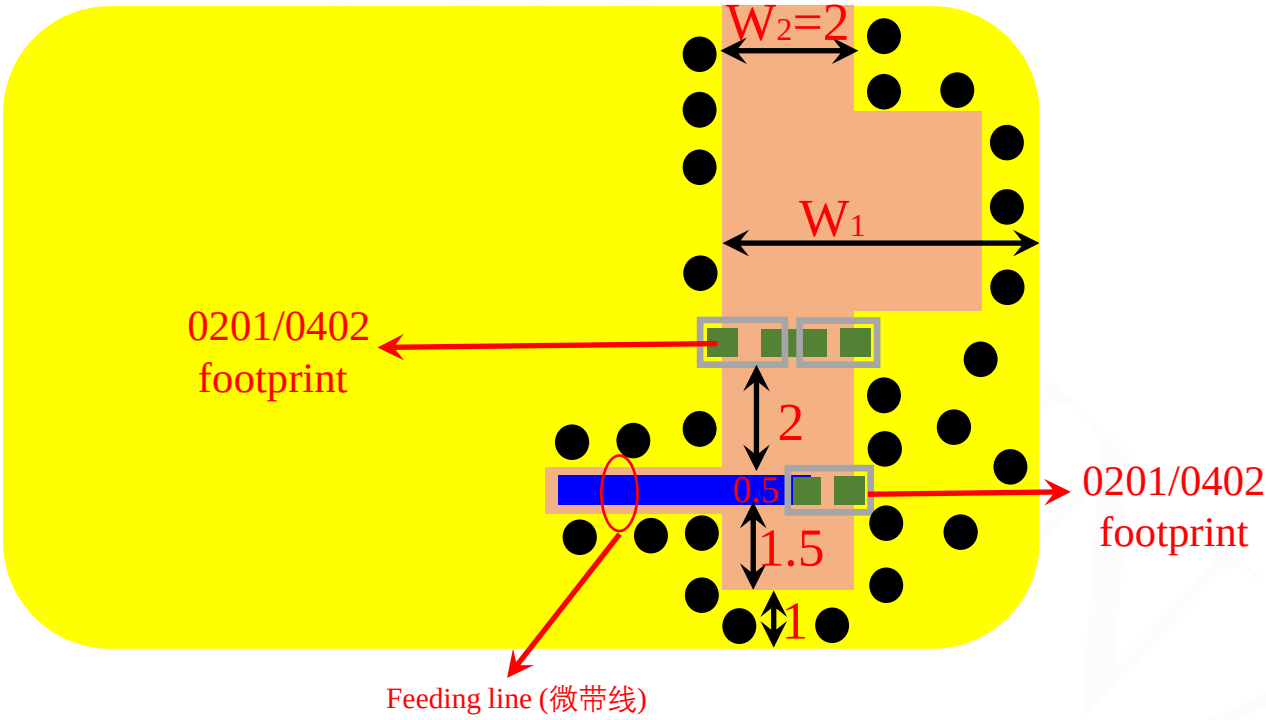
Matching Circuits



Unit:mm



设计指导：

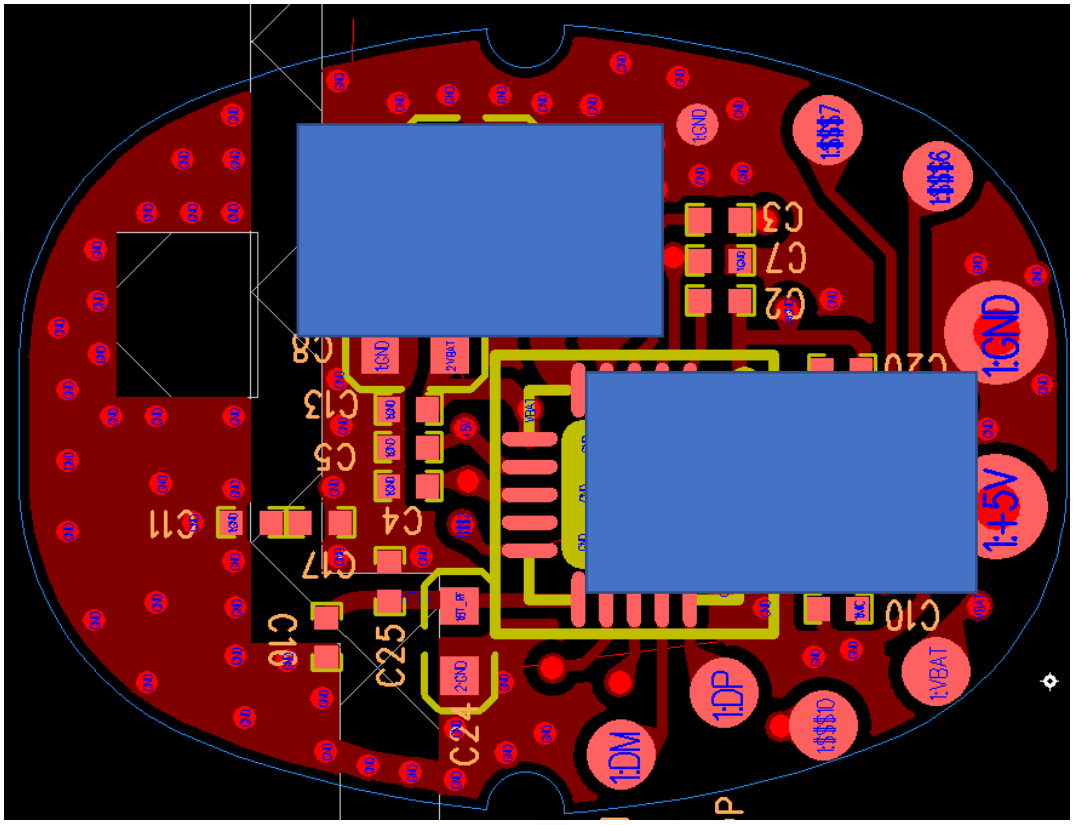
1、原则上，净空区左侧边缘距离板边的间距W_1应该尽量大，且注意与底部电池的间距。

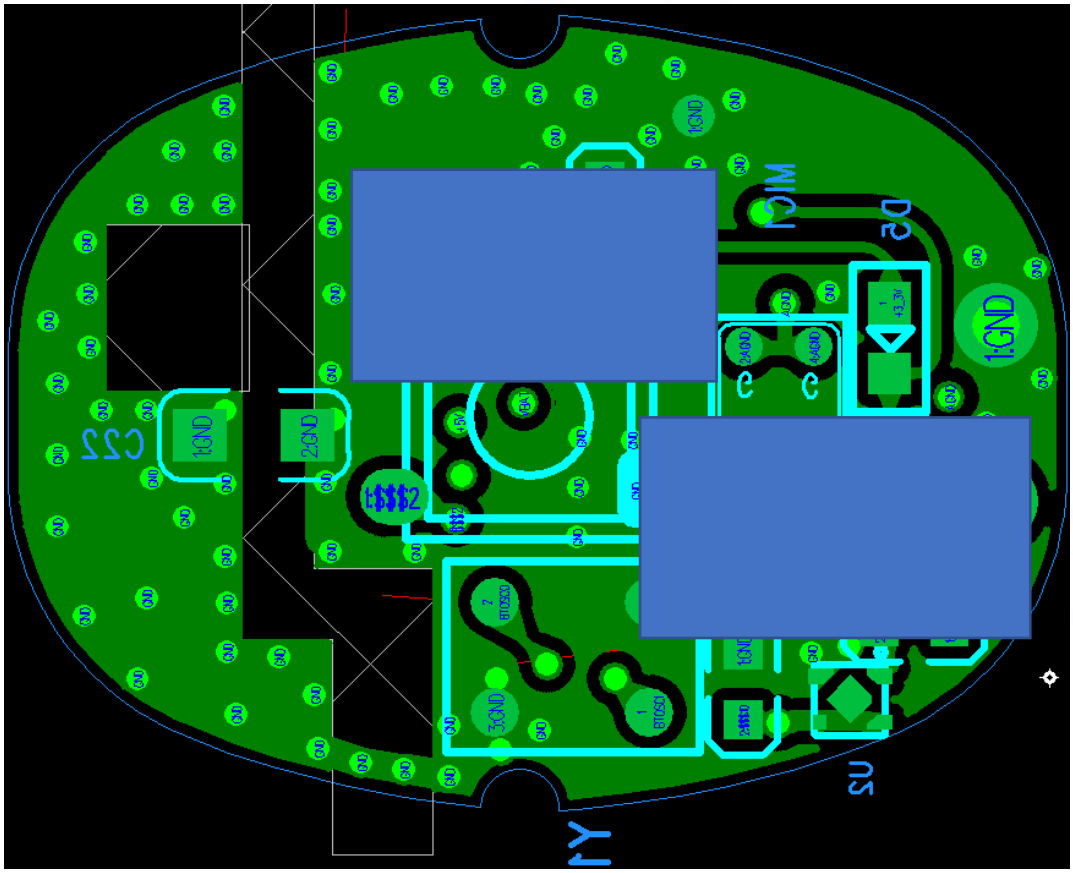
2、主净空区的宽度W_2最优为1.5mm~2.5mm。

3、凹槽的长度L的长度为2mm~5mm。

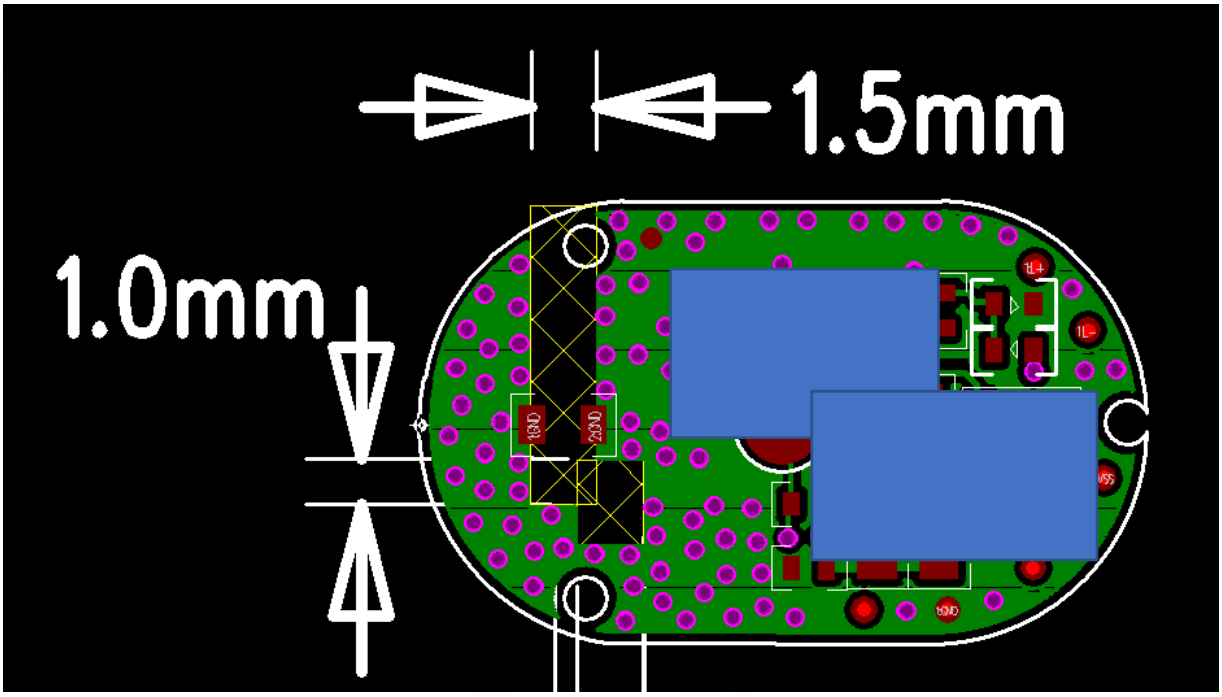
4、0603天线和0603天线底部的两颗物料可以上下互换位置。

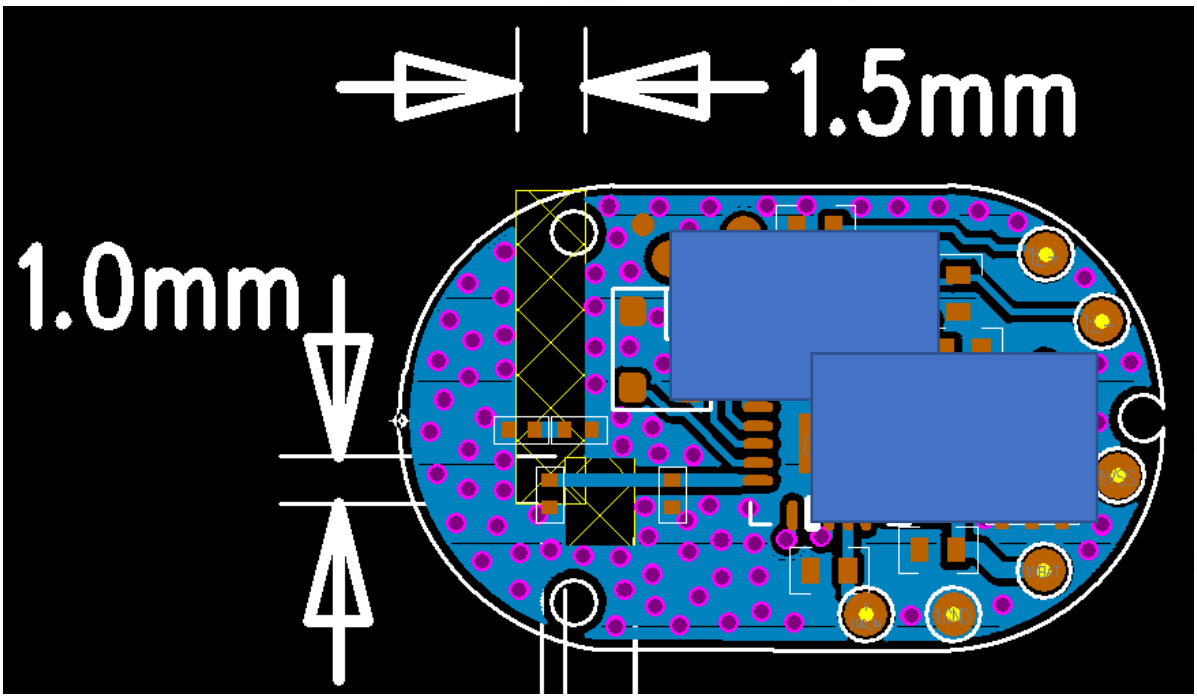
Application example-1





Application example-2





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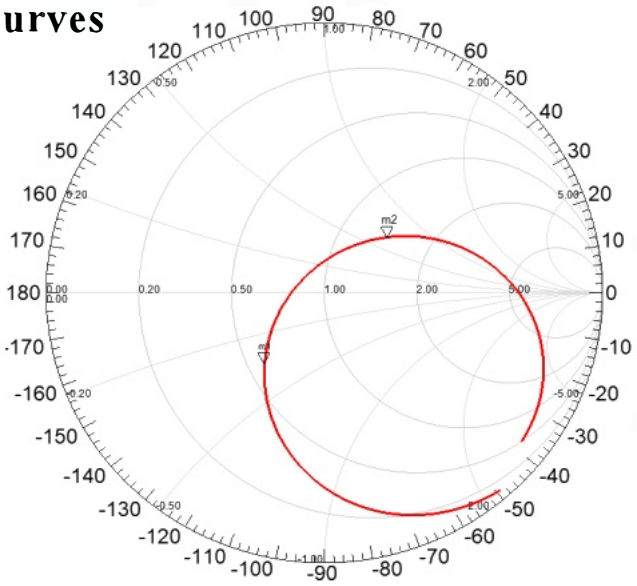
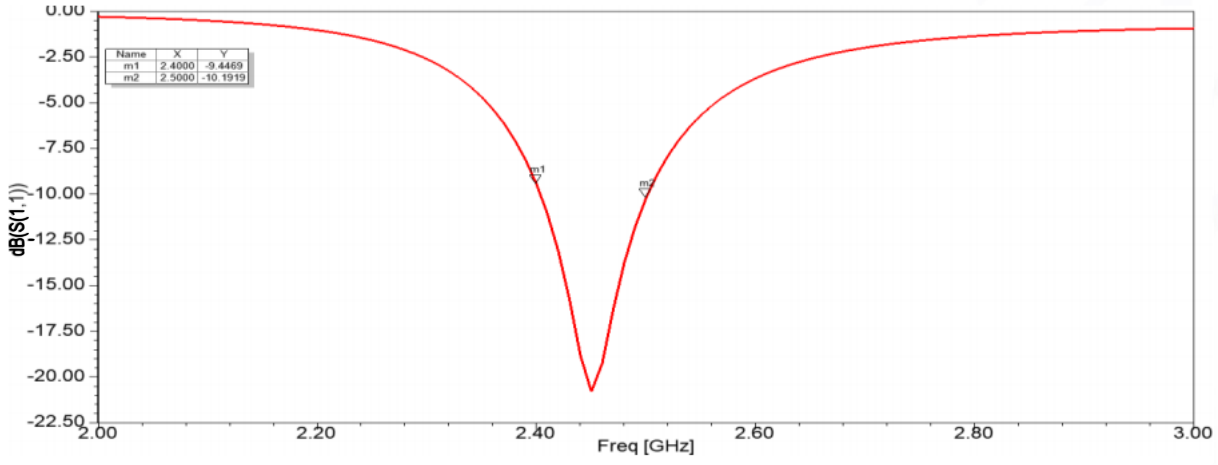
Electrical Characteristics

	Feature	
1	Central frequency	2.40GHz&2.48GHz
2	Bandwidth	>100MHz
3	Peak gain	>3dBi
4	VSWR	<2
5	Polarization	Linear
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

Characteristic Curves





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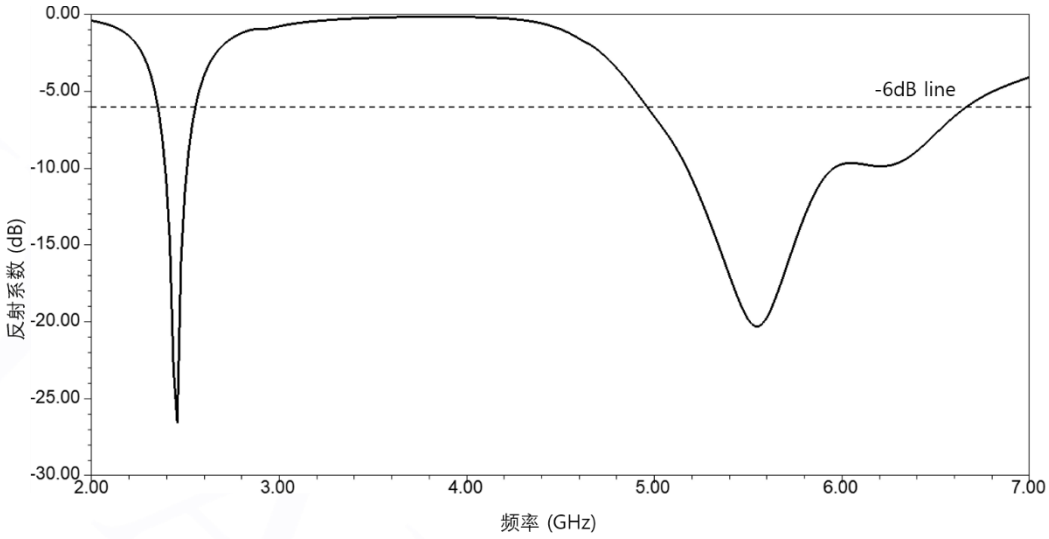
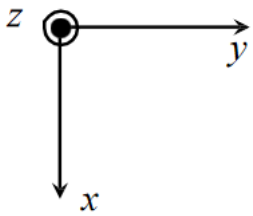
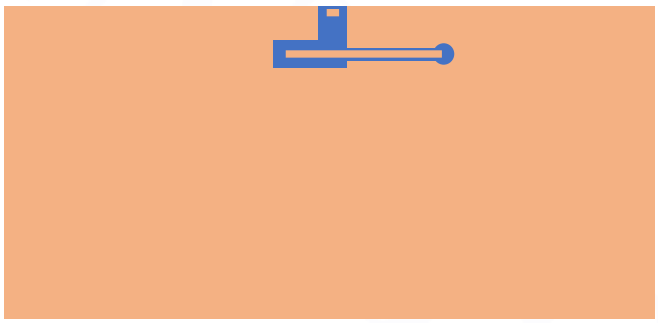


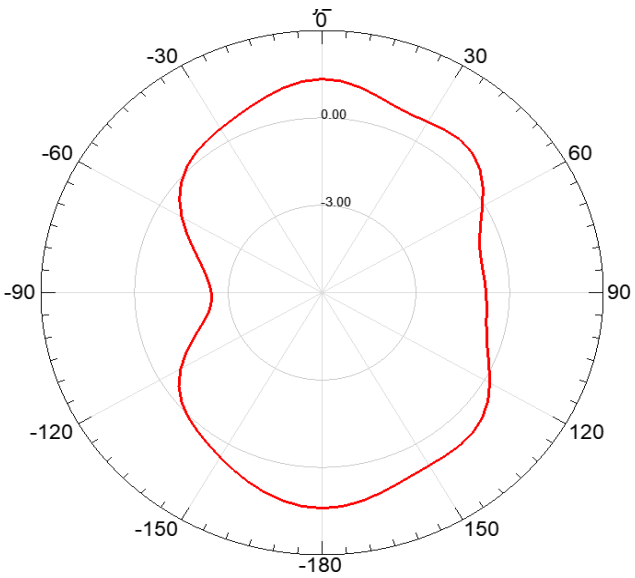
Radiation Pattern

coordinates：

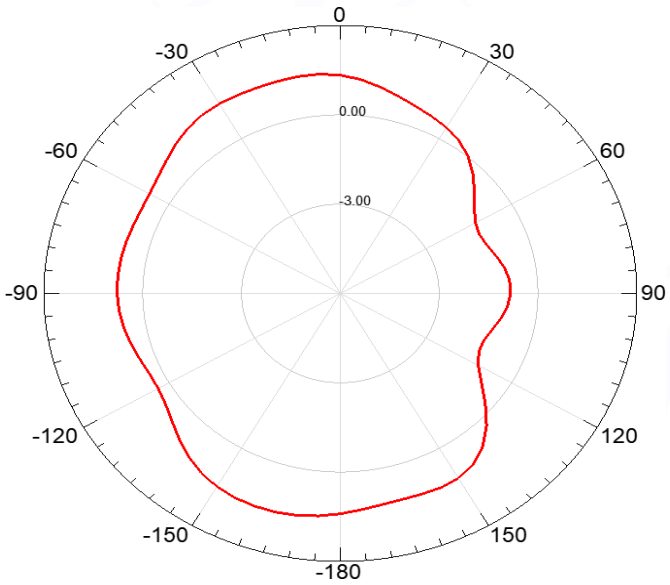




Y-Z Plane



X-Z Plane



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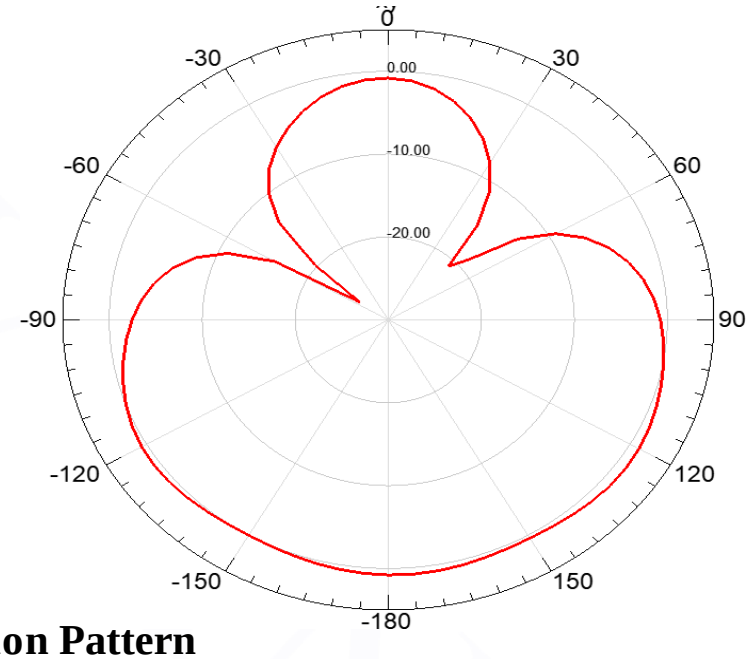
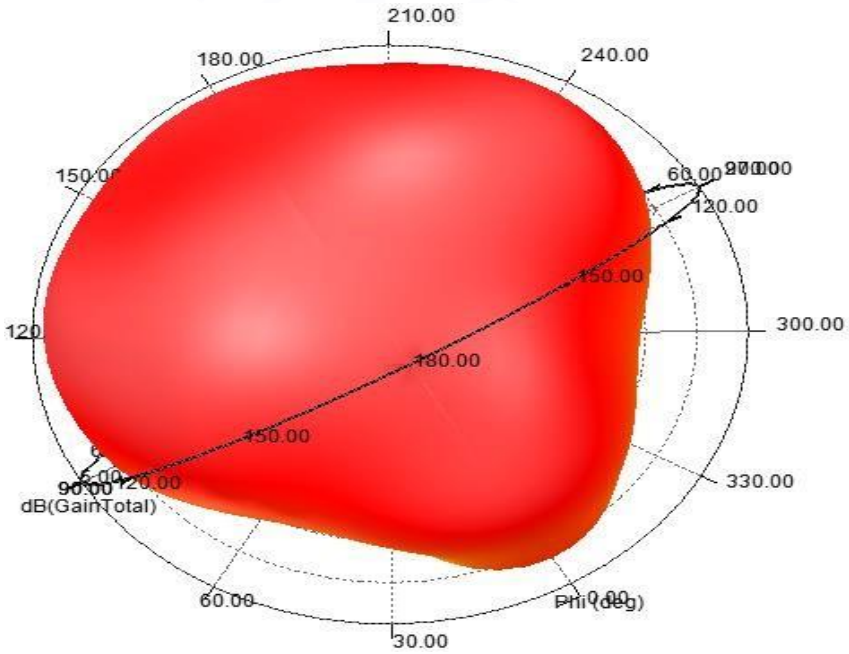


3D Radiation Pattern



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

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Dependability Test

Test Temperature	25℃±3℃
Operating Temperature	-25℃~+85℃
Temperature	5~40℃
Relative Humidity	20~70%

Moisture Proof

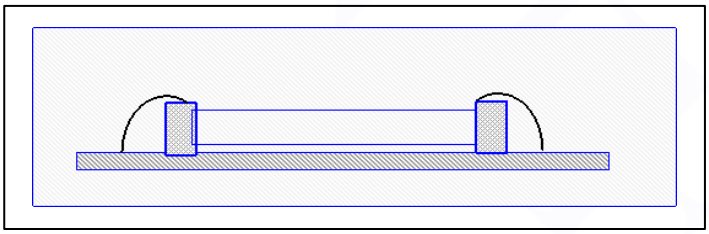
Temperature：40±2℃ Humidity：90~95%RH
Duration：500h
Recovery conditions：Room temperature Recovery Time：24h (Class1) or 48h (Class2)

Solderability

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

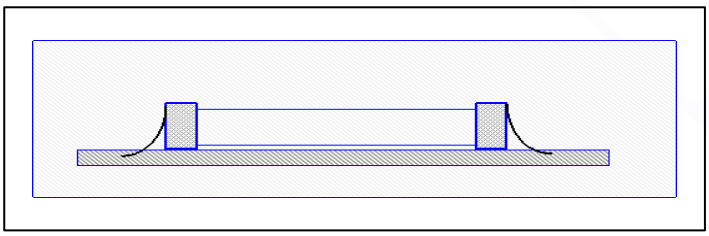
Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

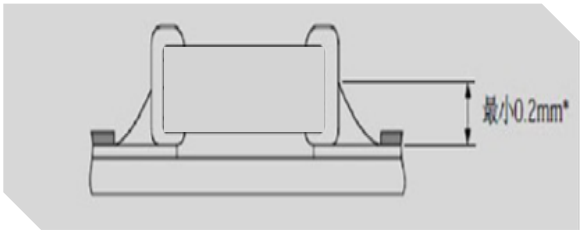
Not enough solder



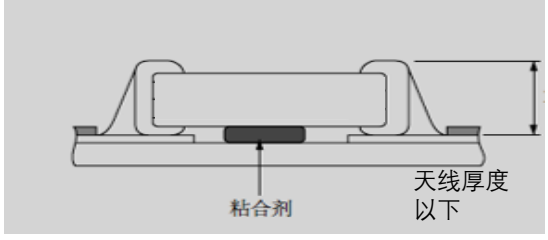
Weak holding force may cause bad connection between the chip and PCB.

Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



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Temperature Cycle Test

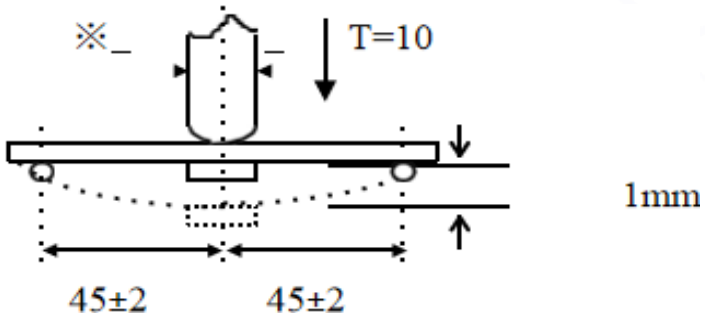
10±1S Applied Force: 5N Duration: 10±1S
Preheating conditions: up-category temperature, 1h
Recovery time: 24±1h
Initial Measurement
Cycling Times: 5 times, 1 cycle, 4 steps:

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

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; Preheating100 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

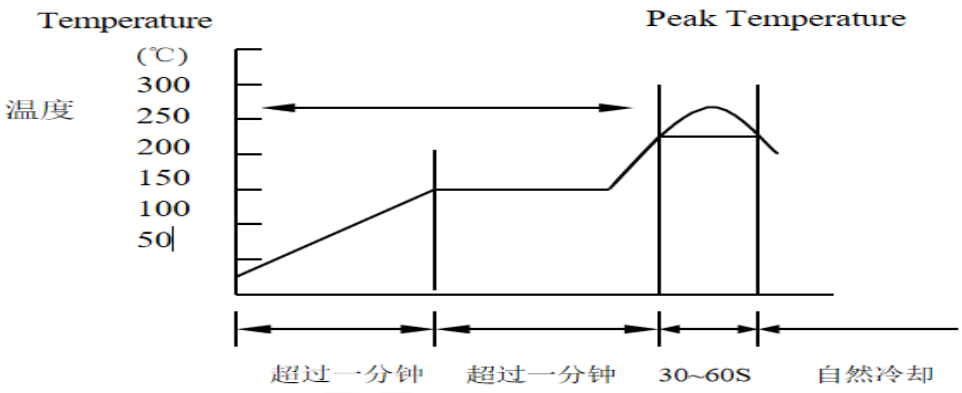


Test Board: Al_2O_3 or PCB Warp: 1mm Speed: 0.5mm/sec.
Unit: mm

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

The temperature profile for soldering

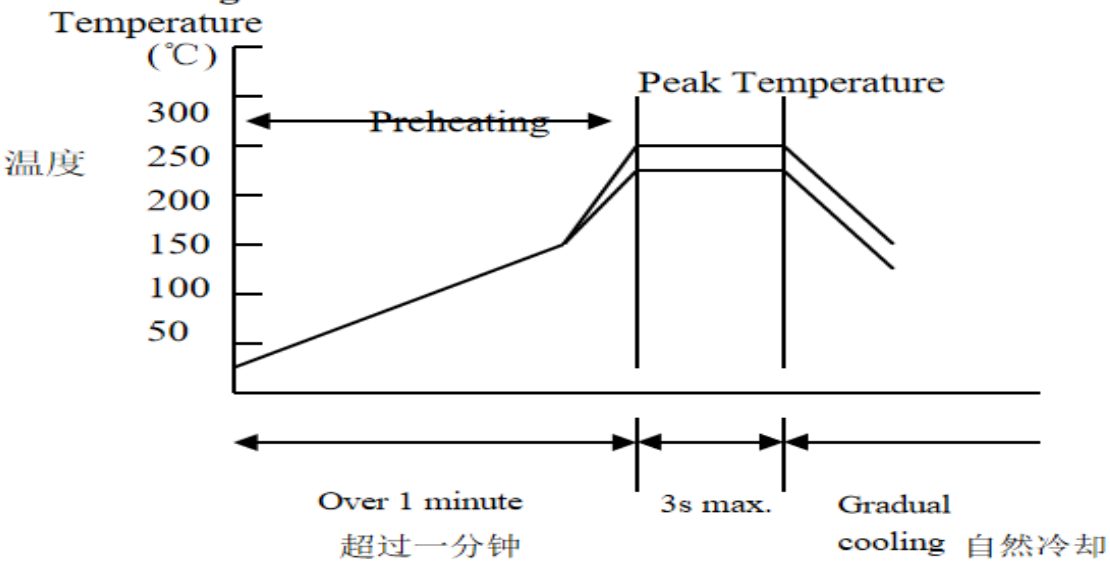
Re-flow soldering



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

While in preheating,please keep the temperature difference between soldering temperature and surface temperature of chips as: T≤150℃.

Wave soldering



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

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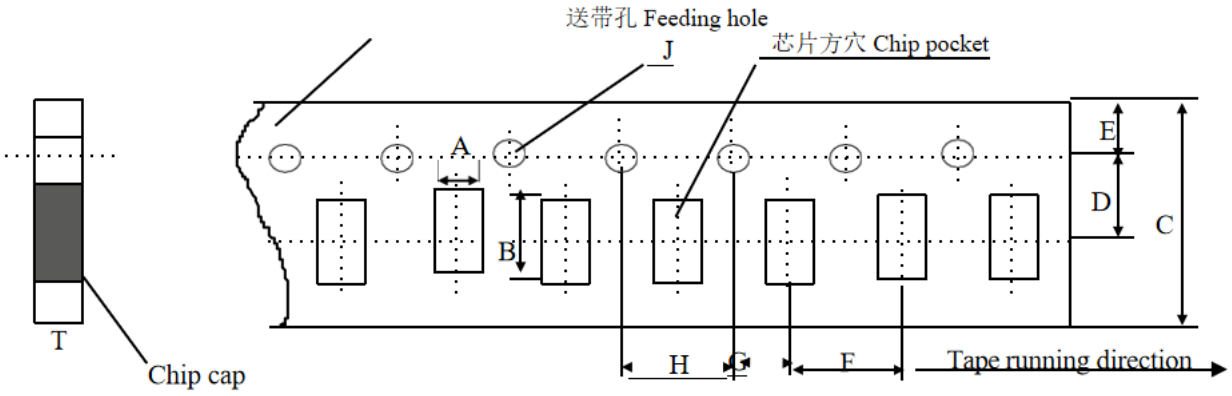
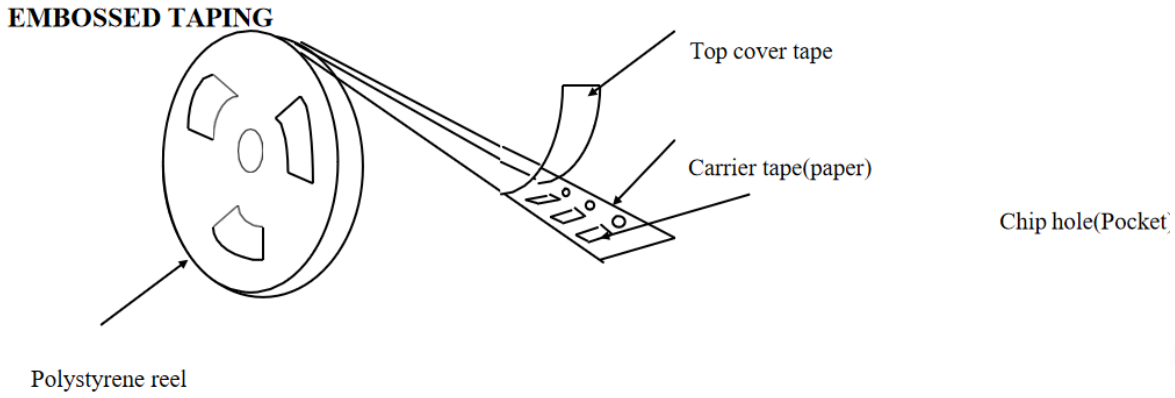
Dimensions of paper taping



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）



Storage Period

The guaranteed period for solderability is 6 months (Under deliver package condition).
Temperature:5~40°C /Relative Humidity:20~70%