



P/N: HY160808 SRF09

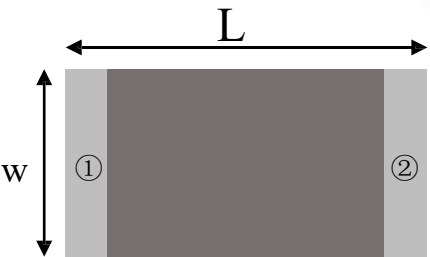
Features

- 1. 表面贴装器件尺寸为1.6x0.8x0.8毫米，符合未来微型化趋势。
- 2. 嵌入式和LTCC(低温共烧陶瓷)技术能够与系统设计集成，并美化最终产品的外壳。
- 3. 高稳定性与低公差。

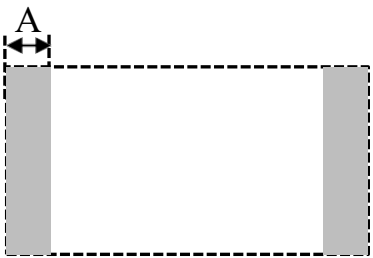
Applications

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

Dimensions (Unit: mm)

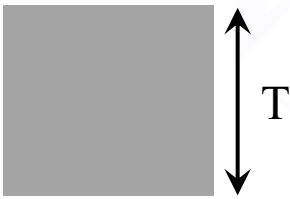


(Top View)



(Bottom View)

Number	Terminal Name
①	INPUT
②	NC



(Side View)

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

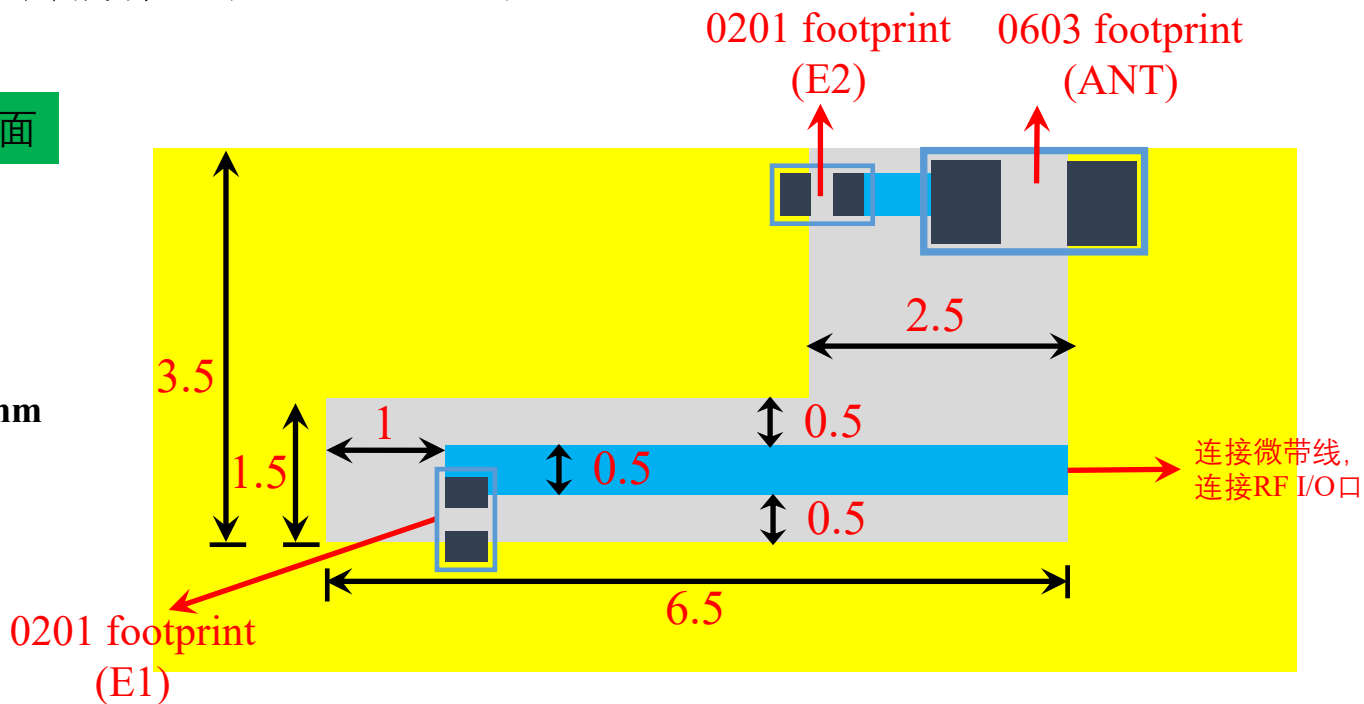


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天线封装方案一 (3.5mm × 6.5mm)

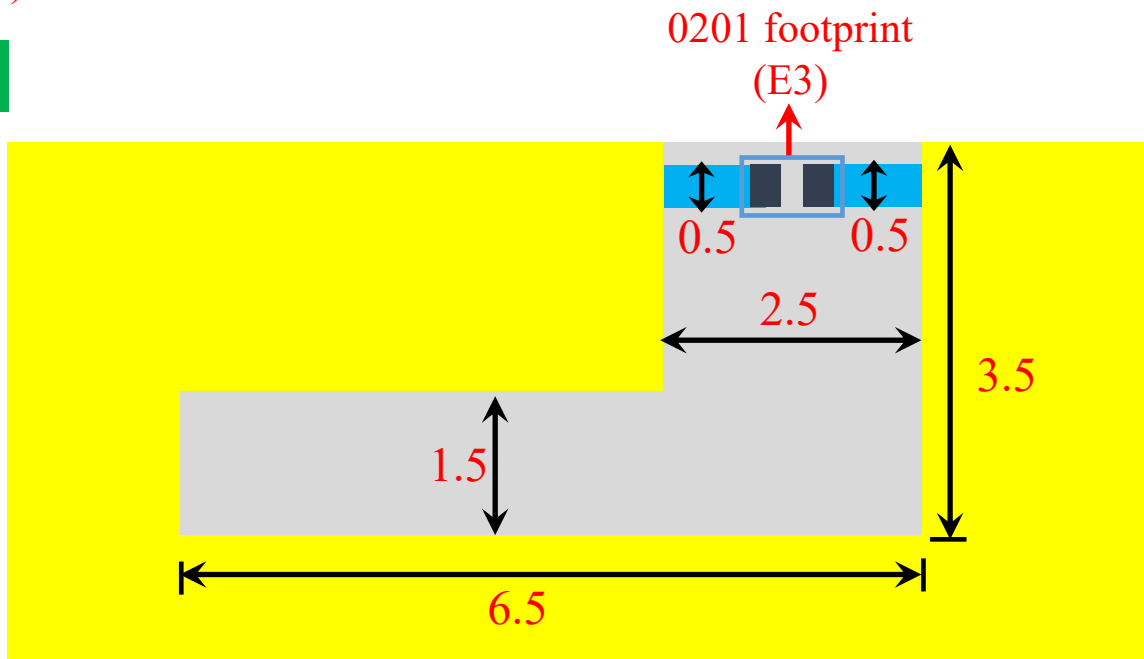
TOP面

Unit:mm

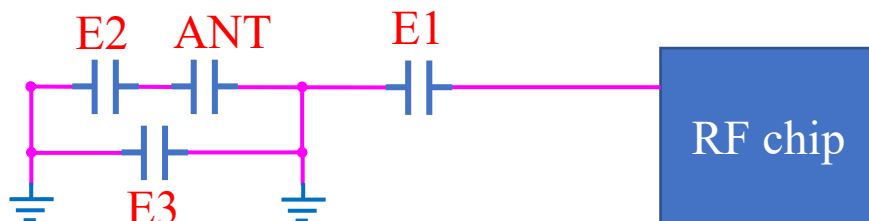


BOTTOM面

Unit:mm



原理图



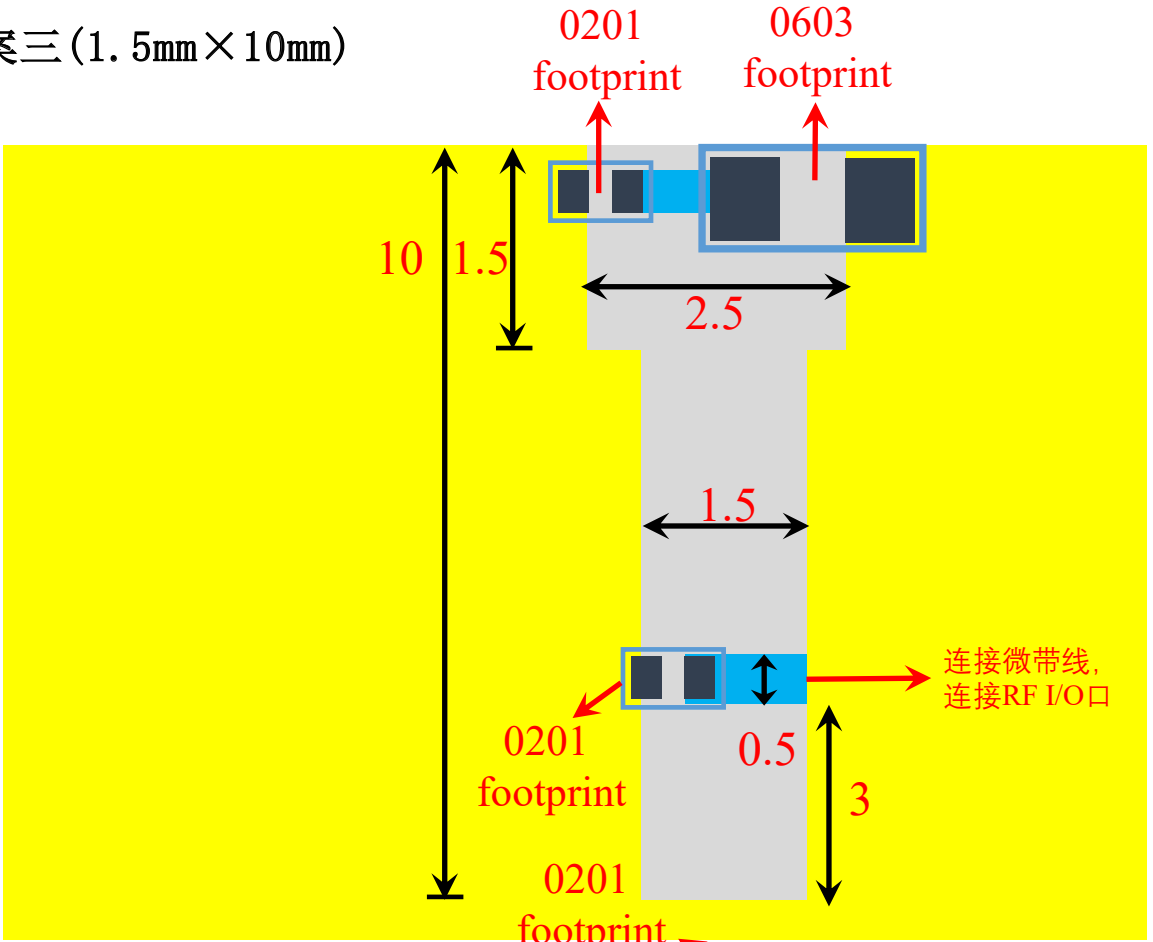


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天线封装方案三 (1.5mm×10mm)

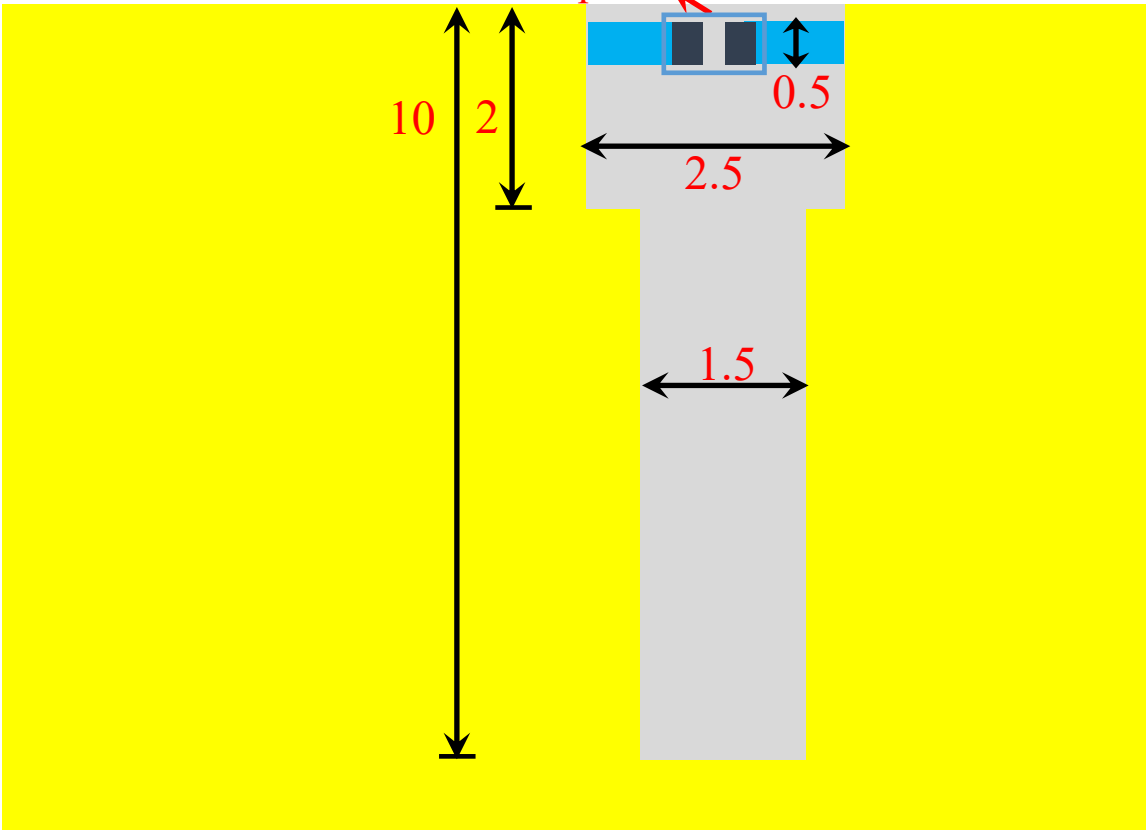
TOP面

Unit:mm



BOTTOM面

Unit:mm



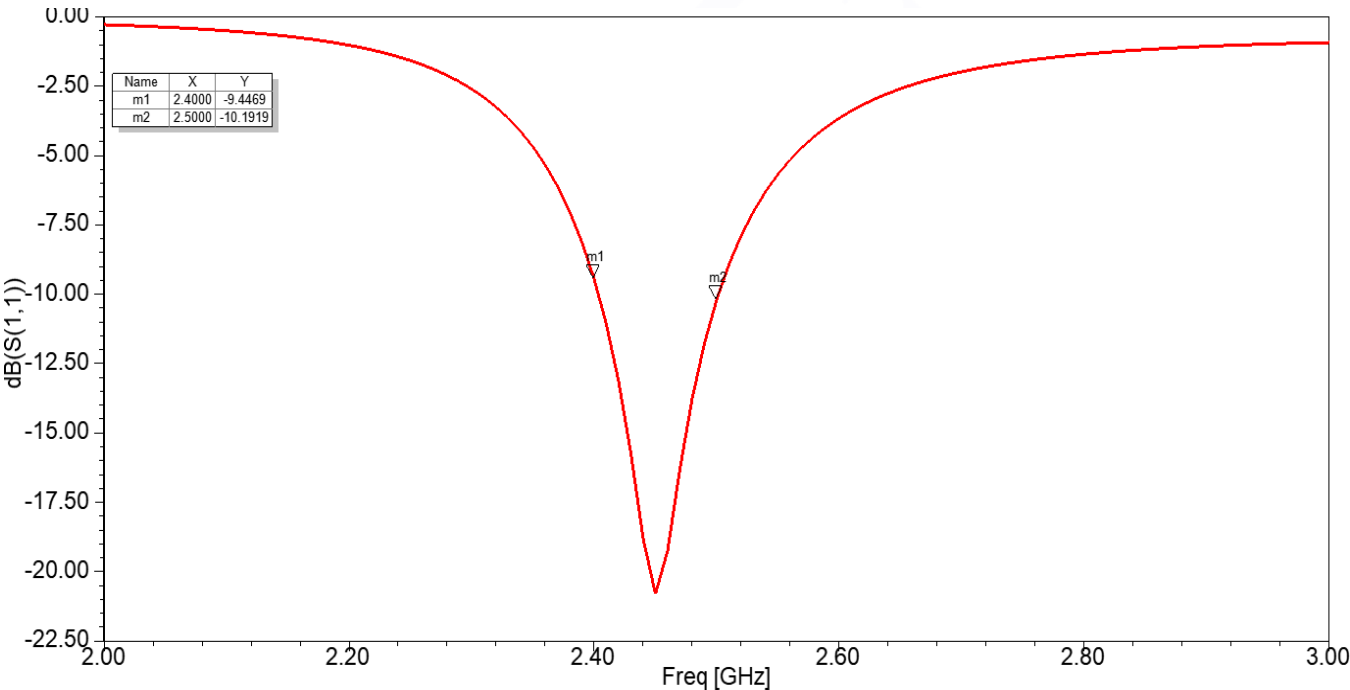


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Electrical Characteristics

	Feature	Specification
1	Center frequency	2.45GHz
2	Bandwidth	>150MHz
3	Peak Gain	2.78 dBi
4	Voltage Standing Wave Ratio	<2
5	Polarization Mode	Linear
6	Azimuth Beam Width	Omnidirectional
7	Impedance	50 Ω
8	Antenna Type	Patch Antenna

Characteristic Curves

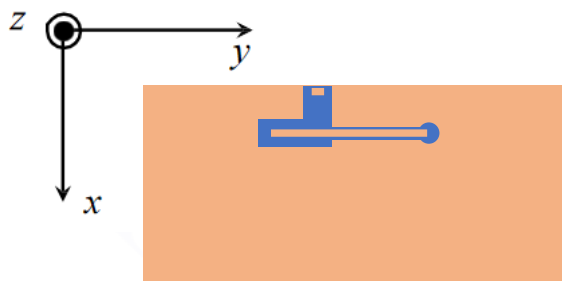




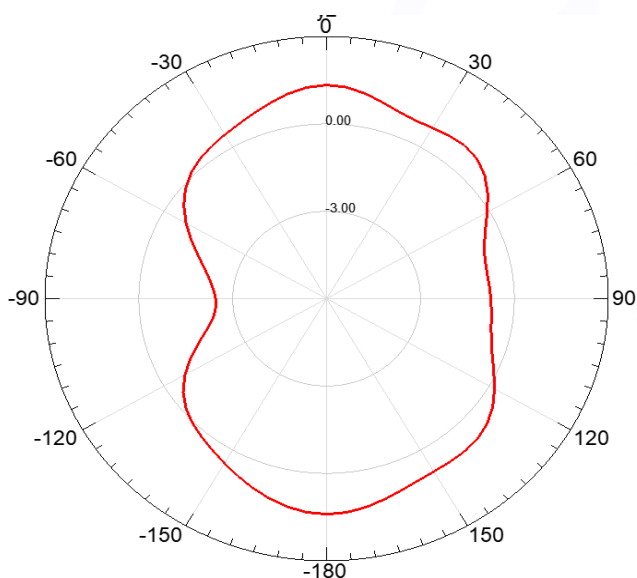
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Radiation Pattern

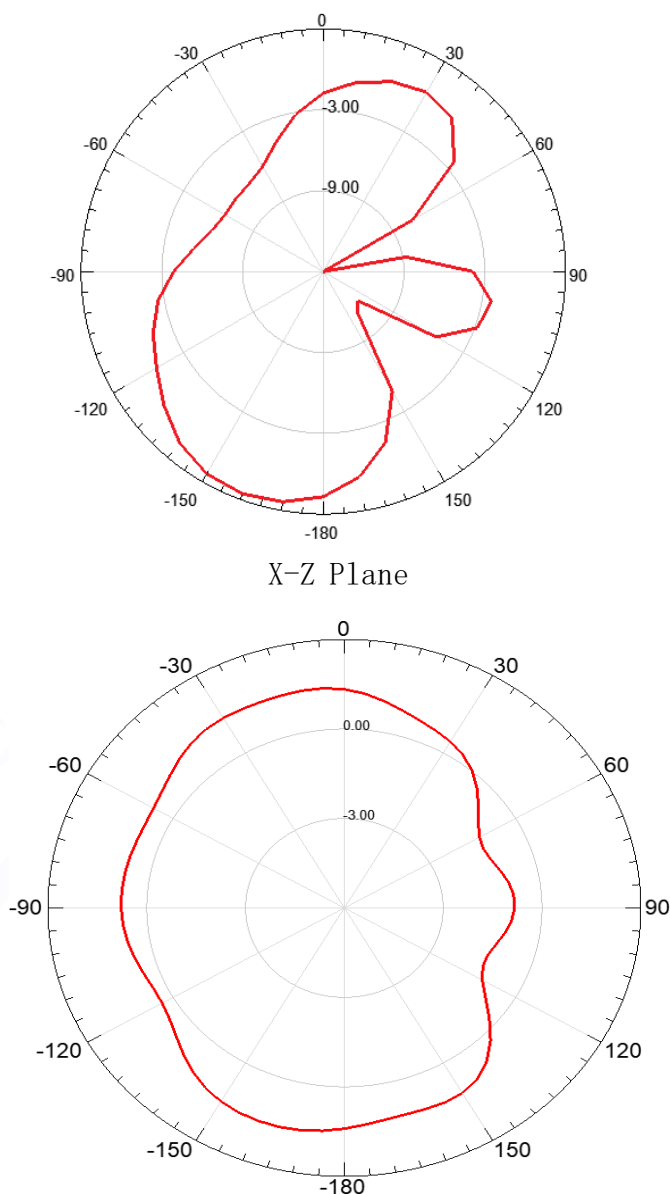
coordinates :



Y-Z Plane



X-Z Plane



Radiation Performance

Frequency	2400MHz	2450MHz	2500MHz
Avg. gain (dB)	-1.92	-1.35	-1.56
Peak gain (dBi)	1.79	2.78	2.66
Efficiency (%)	74.55	80.25	76.98



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Dependability Test

Test Temperature	$25^{\circ}\text{C} \pm 3^{\circ}\text{C}$
Operating Temperature	$-25^{\circ}\text{C} \sim +85^{\circ}\text{C}$
Temperature	$5 \sim 40^{\circ}\text{C}$
Relative Humidity	20~70%

Moisture Proof

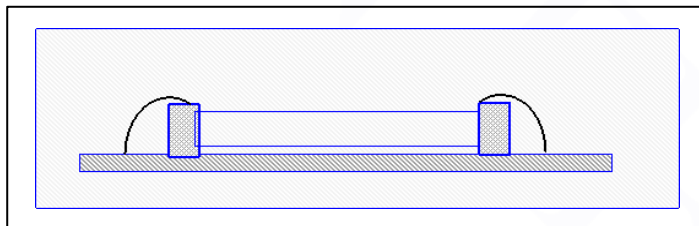
Temperature: $40 \pm 2^{\circ}\text{C}$ Humidity: 90~95%RH
Duration: 500h
Recovery conditions: Room temperature Recovery Time: 24h (Class1) or 48h (Class2)

Solderability

At least 95% of the terminal electrode is covered by new solder.
Preheating conditions: 80 to 120°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: $2 \pm 0.5\text{s}$

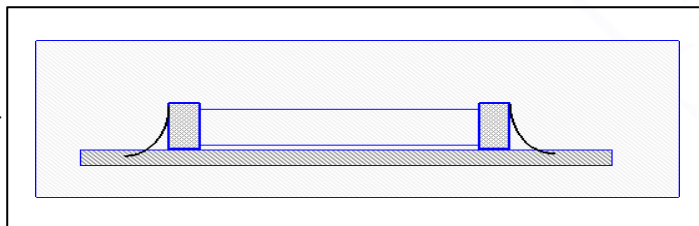
Optimum Solder Amount for Reflow Soldering

Too much solder



Cracks tend to occur due to large stress.

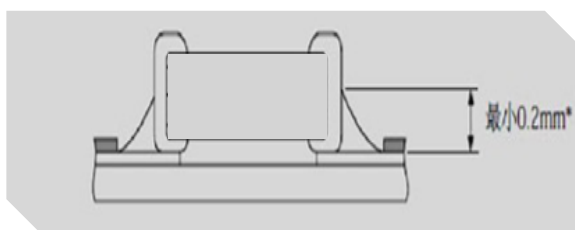
Not enough solder



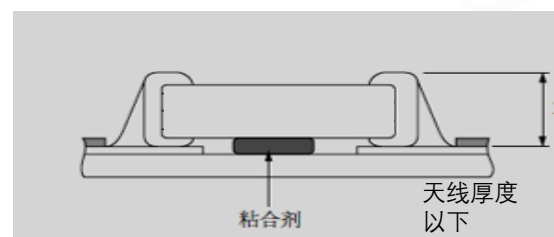
Weak holding force may cause bad connection between the chip and PCB.

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

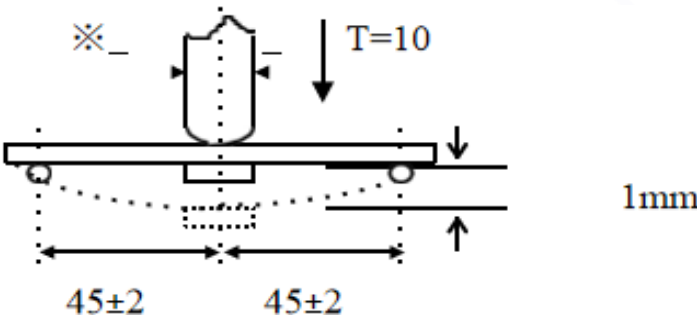
10±1S Applied Force: 5N Duration: 10±1S
Preheating conditions: up-category temperature, 1h
Recovery time: 24±1h
Initial Measurement
Cycling Times: 5 times, 1 cycle, 4 steps:

阶段	温度 (°C)	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; 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



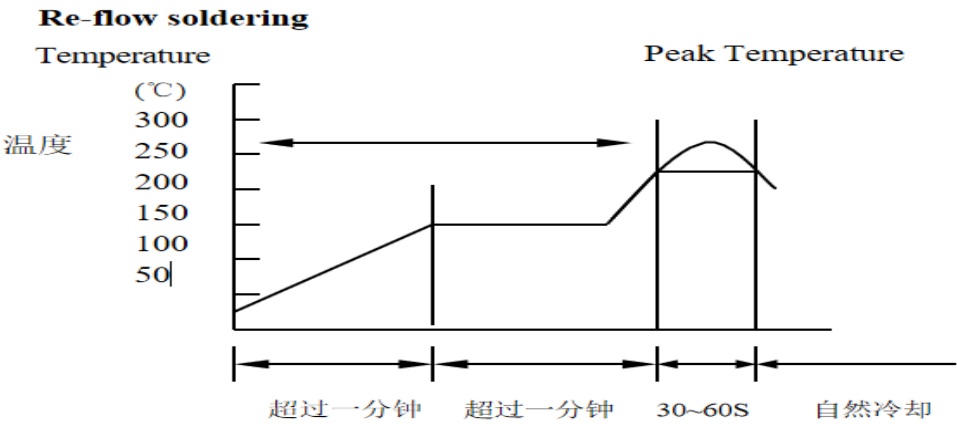
Test Board: Al₂O₃ or PCB Warp: 1mm Speed: 0.5mm/sec.
Unit: mm

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



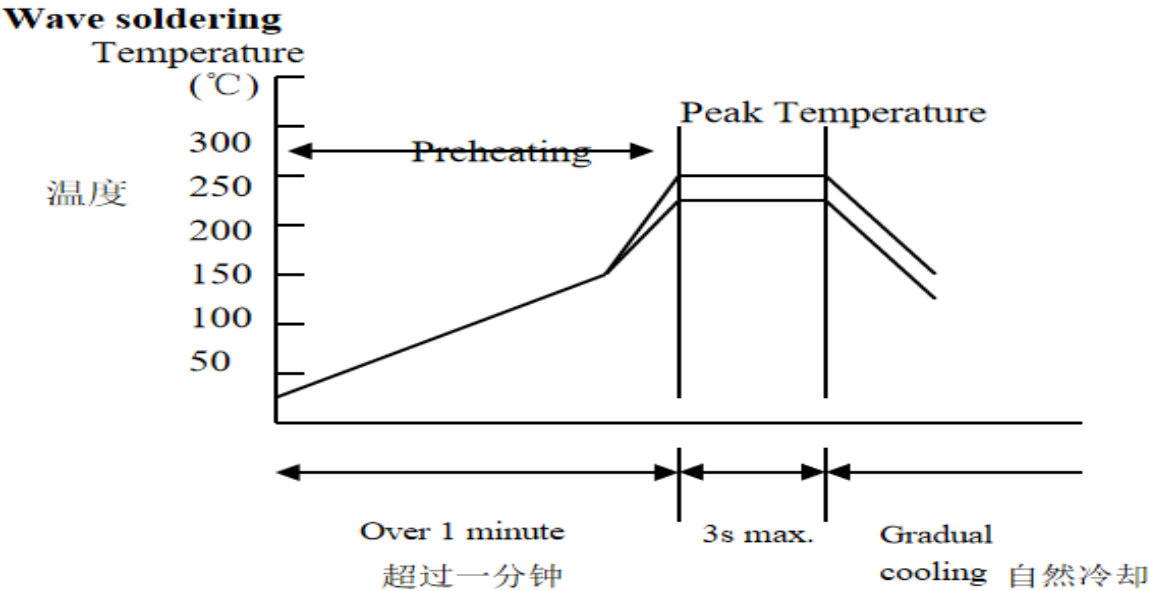
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The temperature profile for soldering



	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: $T \leq 150^{\circ}\text{C}$.

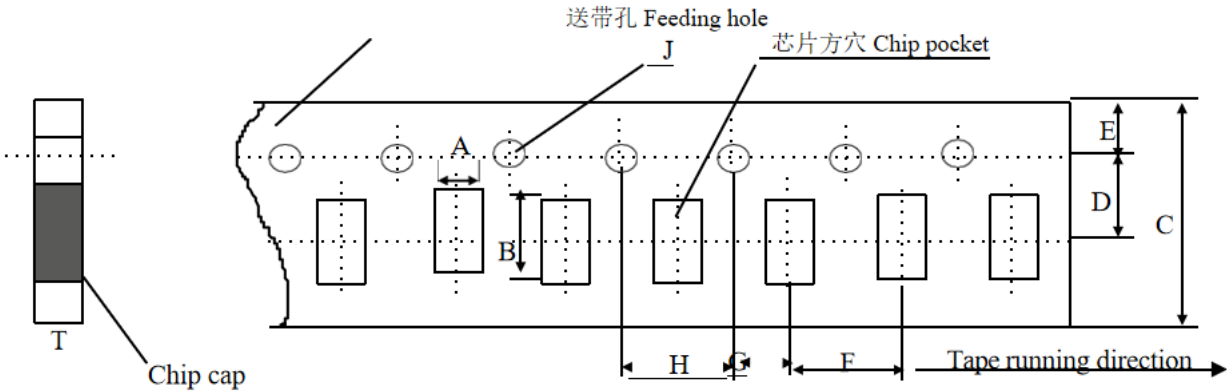


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Dimensions of paper taping

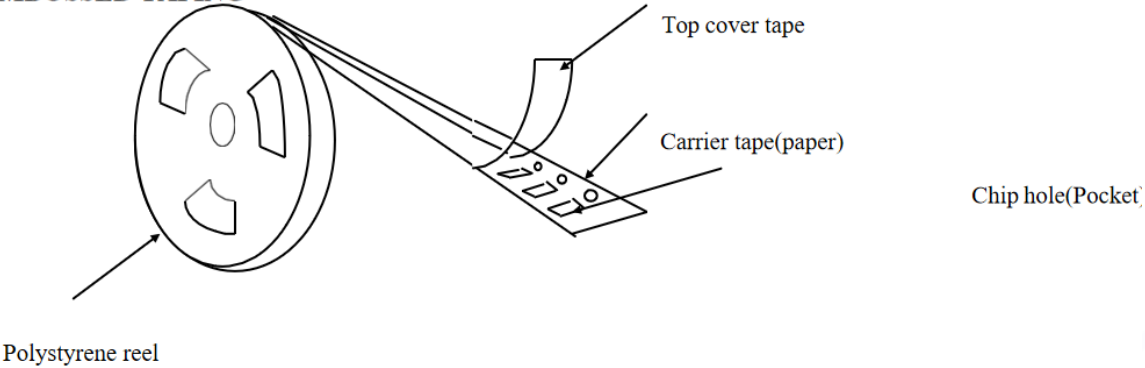


Unit: mm

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)

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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