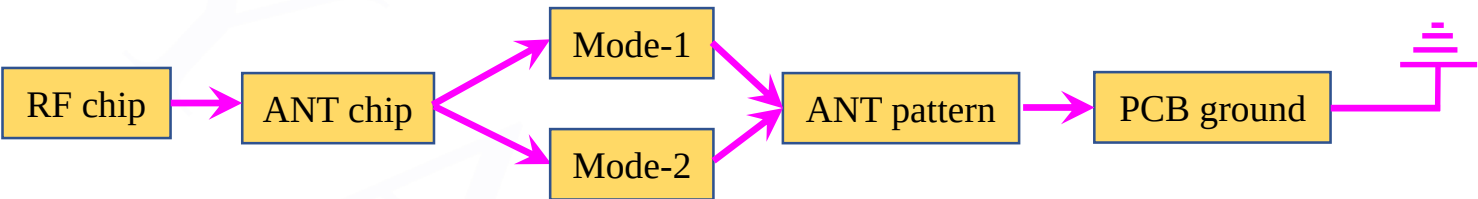


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✓ Features:

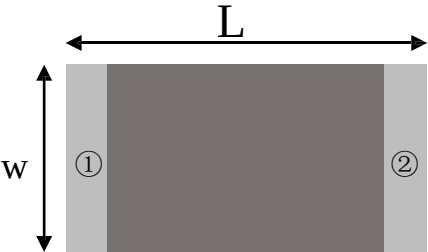
- 1. Surface mounted element with a small dimension of $1.6 \times 0.8 \times 0.8$ mm meet future miniaturization trend.
- 2. Embedded and LTCC (low temperature co-fired ceramic) technology is able to integrate with system design as well as beatifying the housing of final product.
- 3. Miniaturization,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

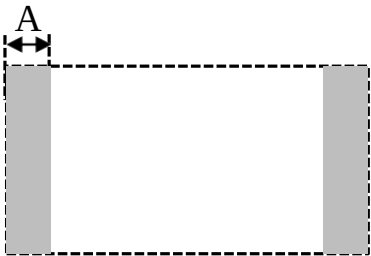
- 1. Bluetooth
- 2. Dual-band WLAN
- 3. ISM and UWB

✓ Dimensions (Unit: mm)

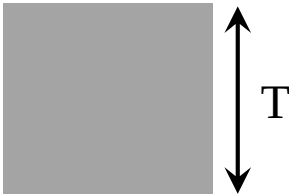


(Top View)

Number	Terminal Name
①	INPUT
②	NC



(Bottom View)

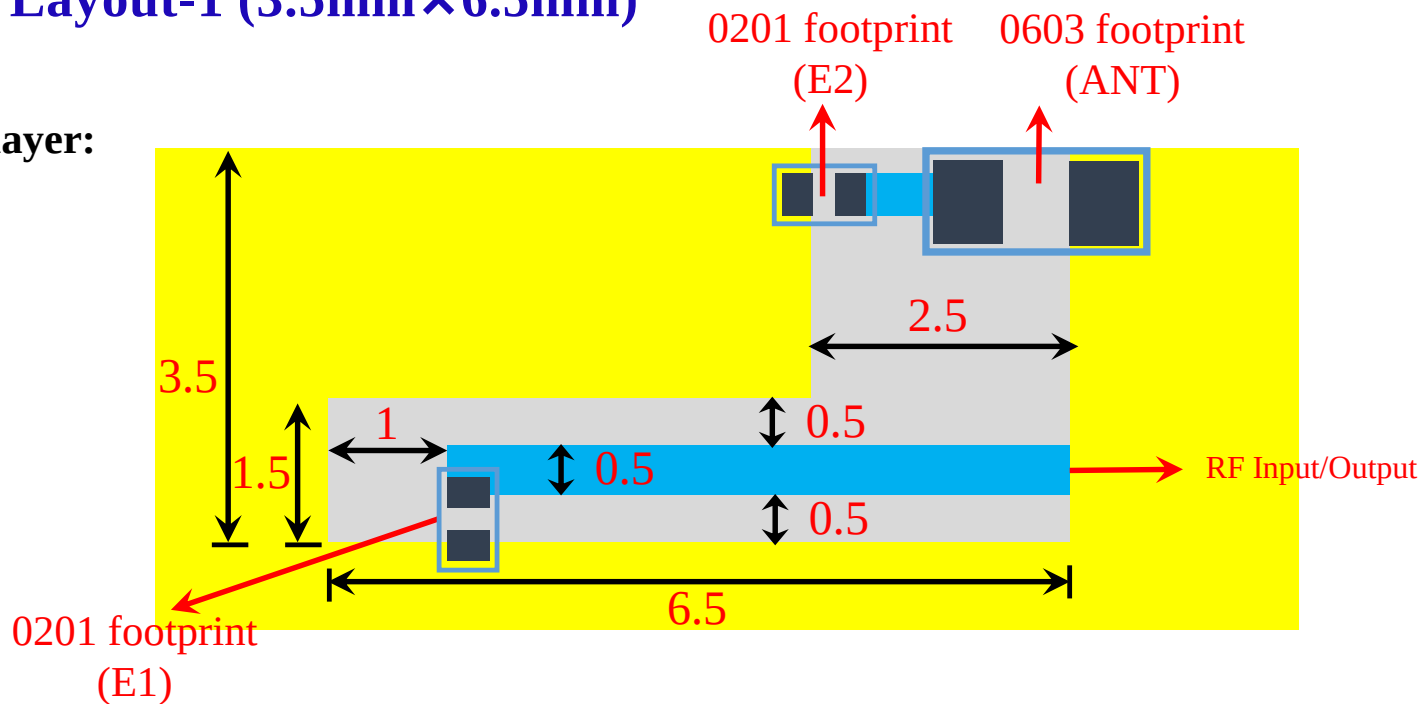


(Side View)

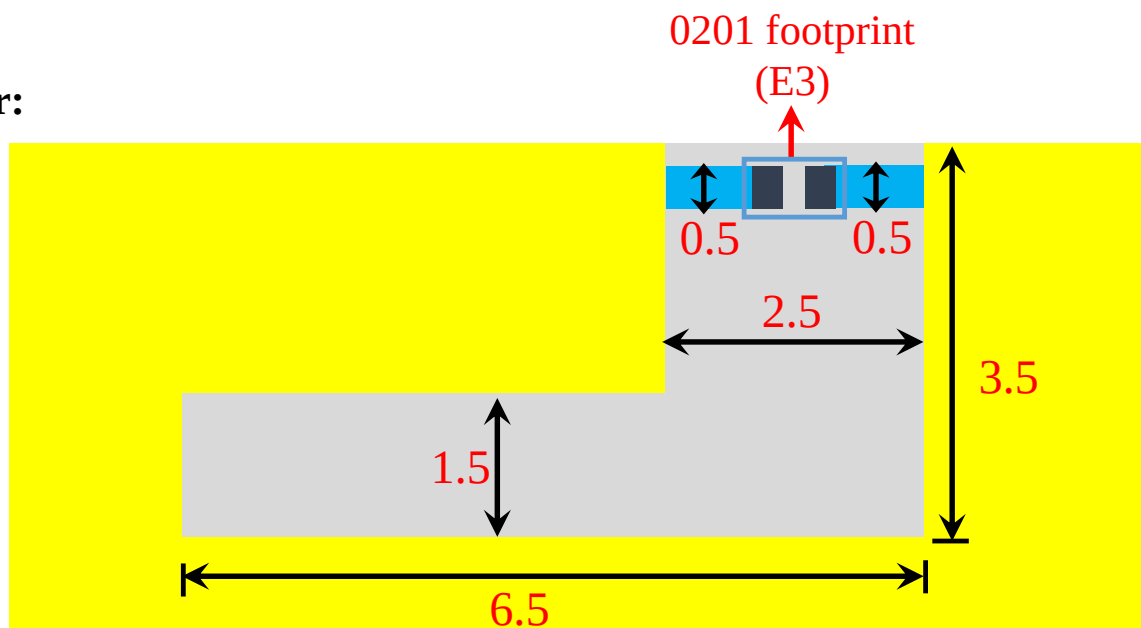
Symbols	L	W	T	A
Dimensions	1.60 ± 0.20	0.80 ± 0.20	0.80 ± 0.20	0.30 ± 0.10

✓ **Layout-1 (3.5mm×6.5mm)**

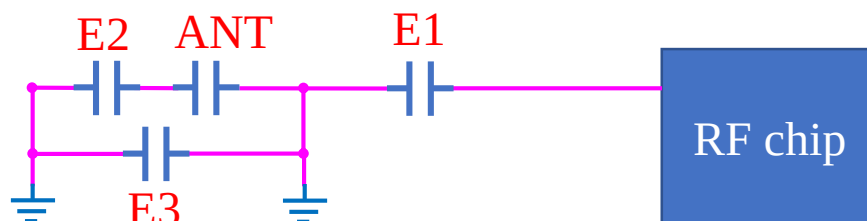
Top layer:



Bottom layer:

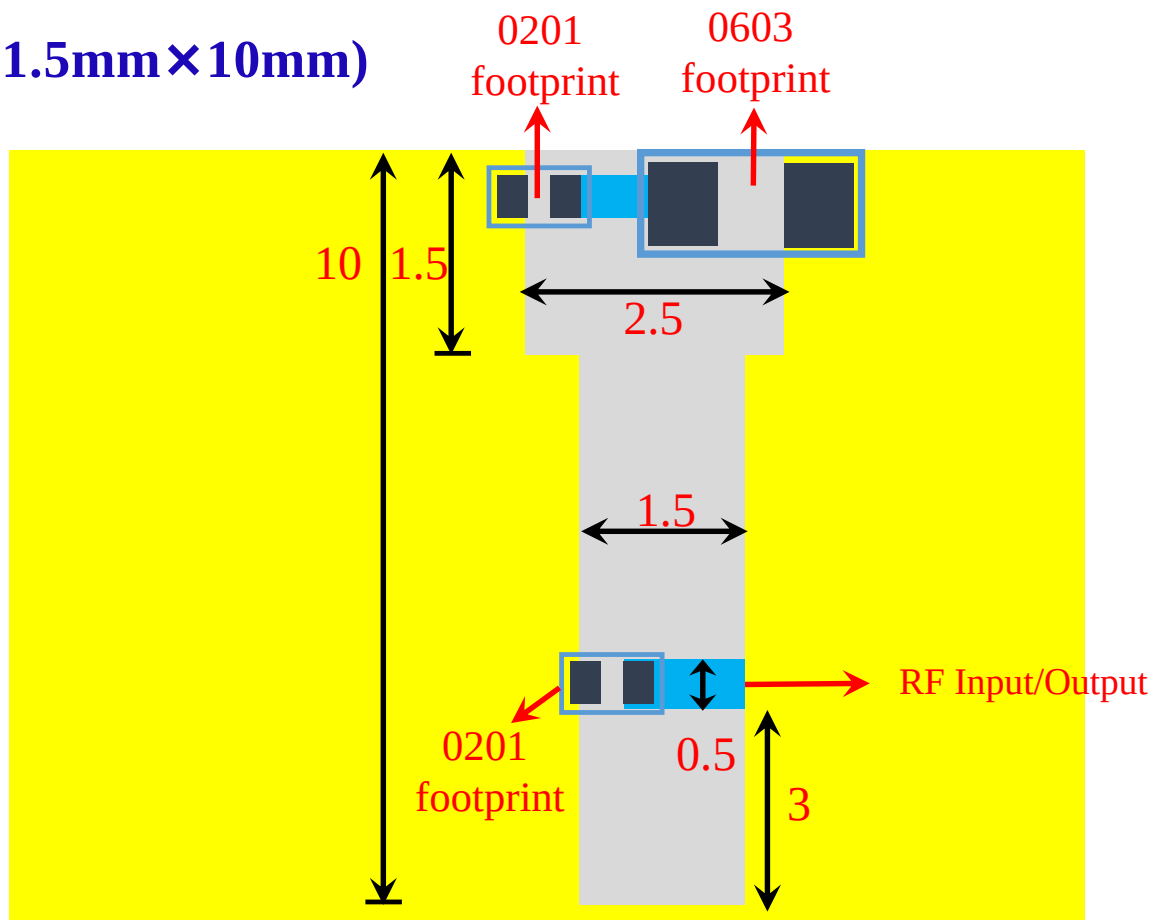


Equivalent circuit:

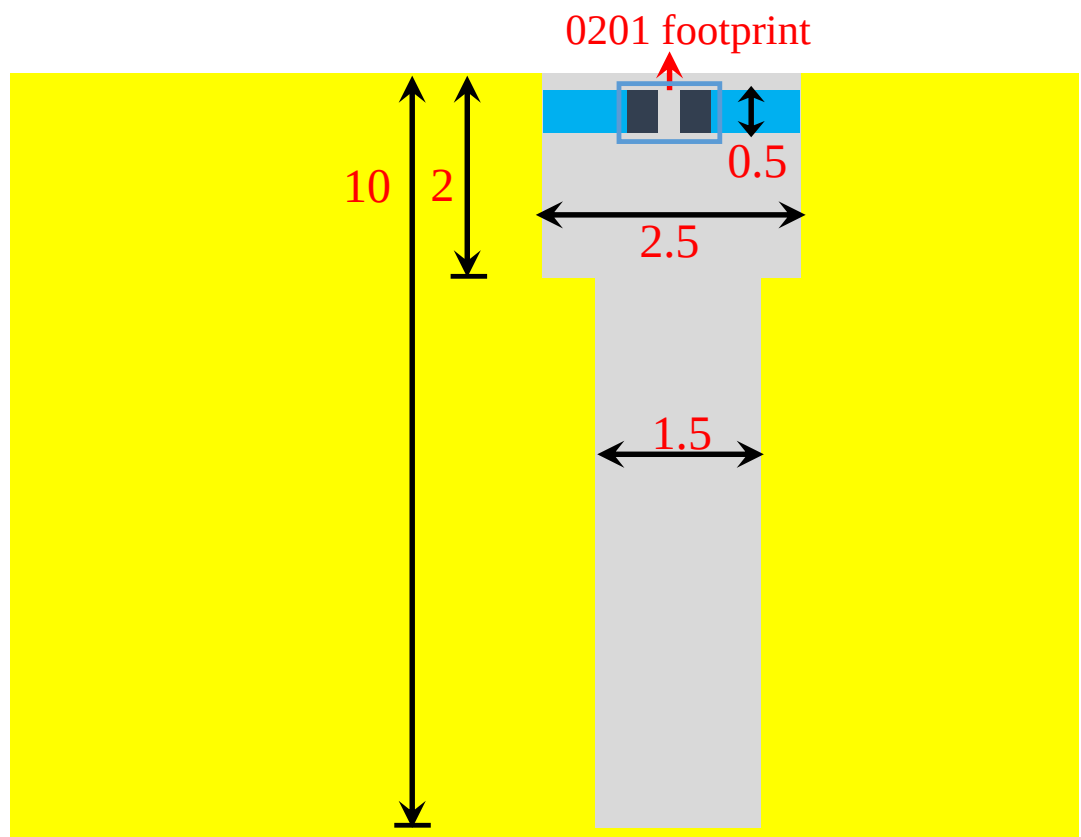


✓ Layout-2 (1.5mm×10mm)

Top layer:



Bottom layer:

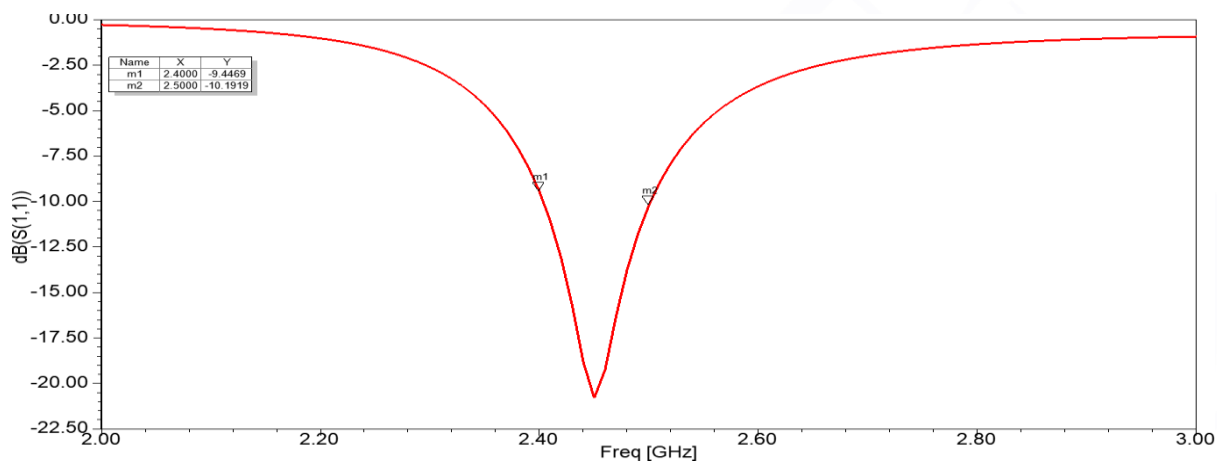


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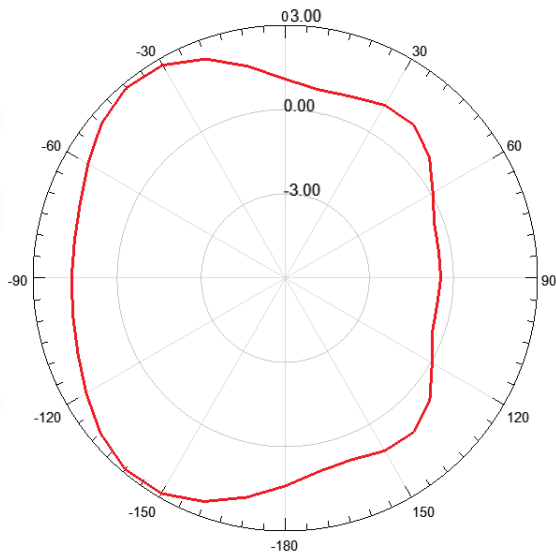
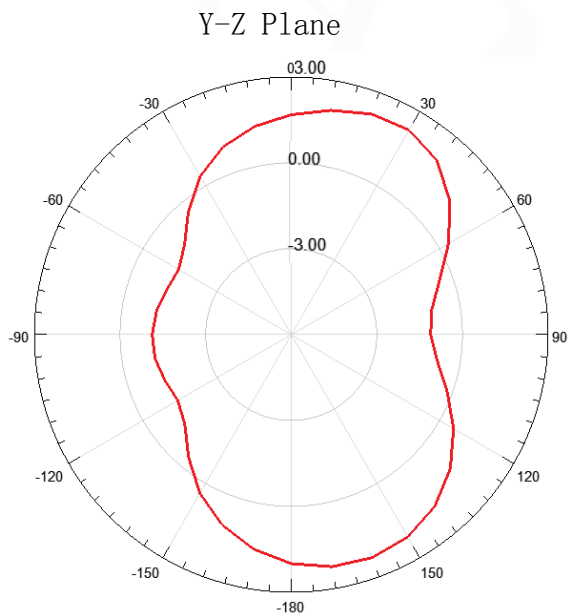
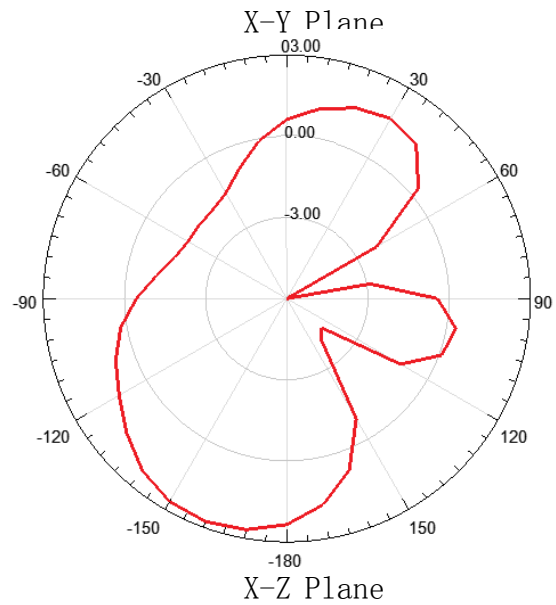
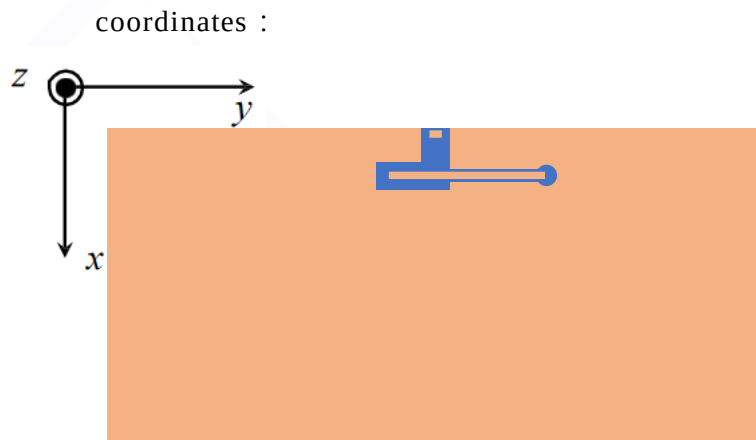
✓ Electrical Characteristics:

	Feature	Specification
1	Central frequency	2.45GHz
2	Bandwidth	>150MHz
3	Peak gain	2.78 dBi
4	VSWR	<2
5	Polarization	Linear
6	Azimuth beamwidth	Omnidirectional
7	Impedance	50 Ω

✓ Characteristic Curves:



✓ Radiation Pattern:



✓ Radiation Performance:

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

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✓ Dependability Test

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

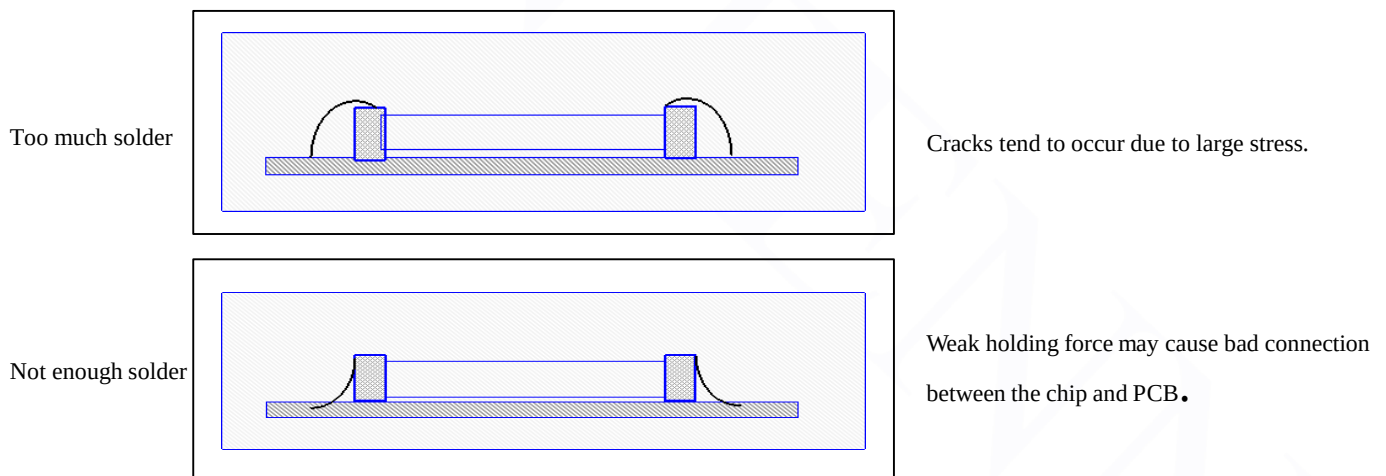
✓ Moisture Proof

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

✓ Solderability

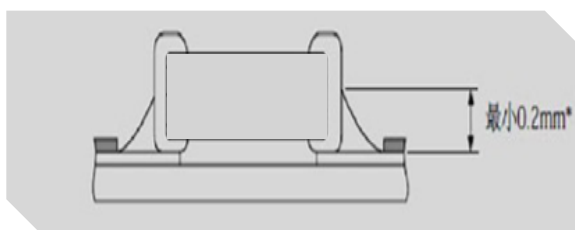
At least 95% of the terminal electrode is covered by new solder.
Preheating conditions: 80 to 120°C; 10~30s.
Solder Temperature: 235 ± 5°C Duration: 2 ± 0.5s, Solder Temperature: 245 ± 5°C Duration: 2 ± 0.5s

✓ Optimum Solder Amount for Reflow Soldering

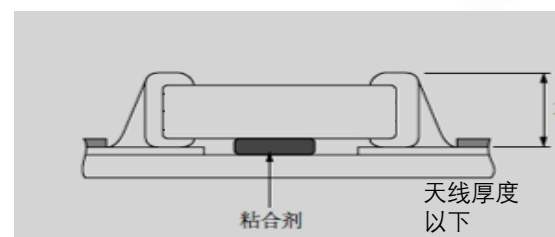


✓ Recommended Soldering Amounts

The optimal solder fillet amounts for re-flow soldering



The optimal solder fillet amounts for wave soldering



P/N: HT-1608-V1**✓ 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:

Stage	Temperature(°C)	Time (minutes)
Step 1	Lower temperature limit (NPO/X7R/X7S/X6S/X5R:-55 Y5V:-25 Z5U:-10)	30
Step 2	normal atmospheric temperature(+20)	2-3
Step 3	Upper line temperature (NPO/X7R/X7S: +125 Y5V/Z5U/X5R:-85 X6S:-105)	30
Step 4	normal atmospheric temperature(+20)	2-3

✓ Resistance to Soldering Heat

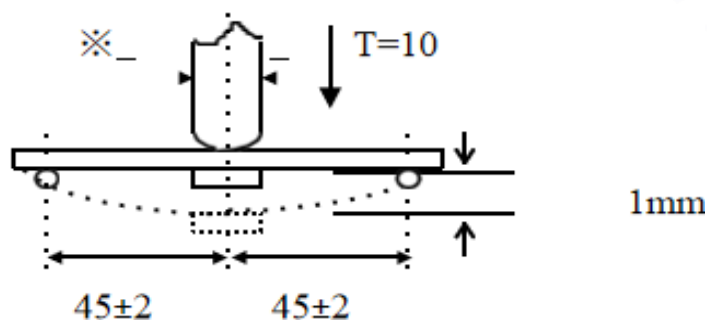
Preheating 80 to 120°C; 10~30s.Solder Temperature: 235±5°C; Duration:2±0.5s; Solder Temperature: 245±5°C
Duration: 2±0.5s; Preheating 100 to 200°C; 10±2min.

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.

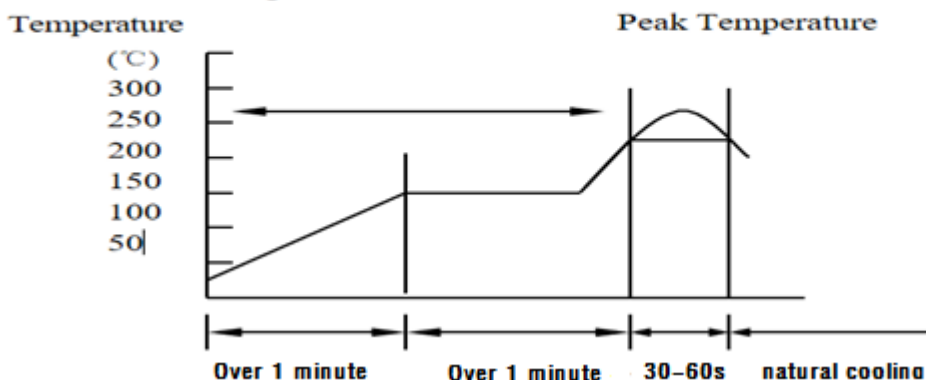
Unit: mm

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

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The temperature profile for soldering

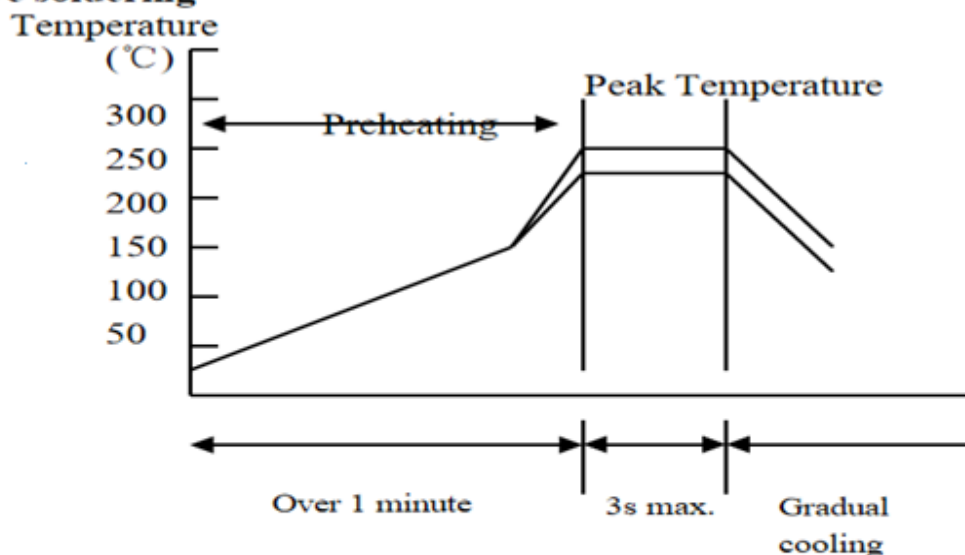
Re-flow soldering



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

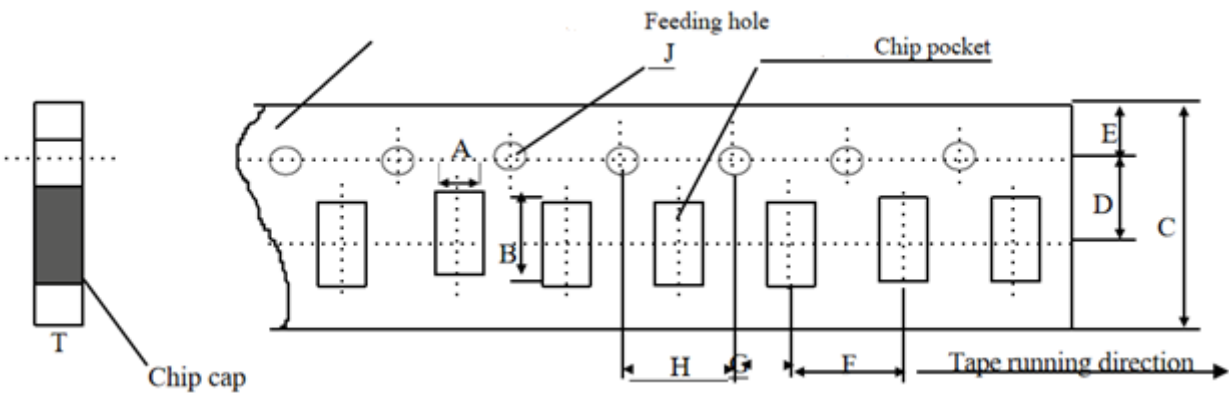
Wave soldering



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

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✓ Dimensions of paper taping

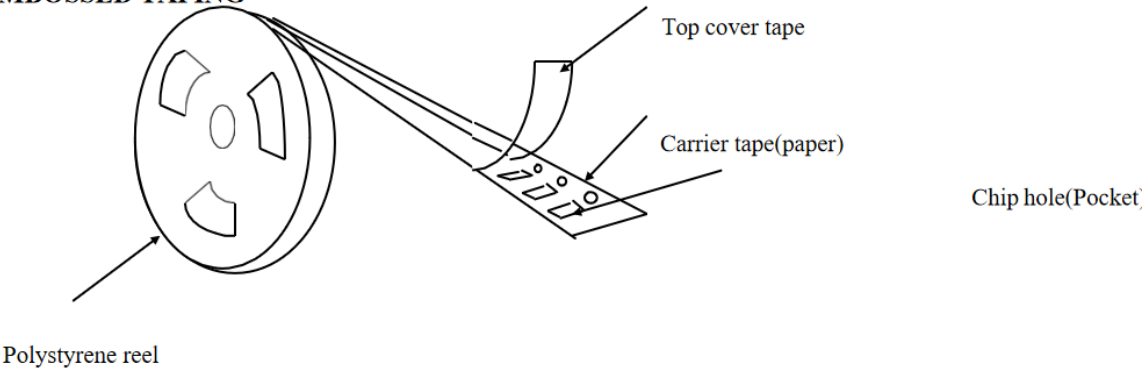


Unit: mm

Code	A	B	C	D*	E	F	G*	H	J	T
papersize										
Size	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℃ /Relative Humidity:20~70%