# 承　　認　　書

# SPECIFICATION FOR APPROVAL

客戶名稱
CUSTOMER ：

客戶料號
CUSTOMER'S P/N ：

料號
PART NUMBER ： WAN2012F245C04

規格
DESCRIPTION ： Chip Antenna 2012 L Ant 2.45G Type 04

版本
VERSION ： V1.9

日期
ISSUE DATE ： 2023/06/15

| 客戶承認<br>CUSTOMER APPROVED |
|---|
| |

| 工　程　部<br>R&D CENTER | | |
|---|---|---|
| 承　認<br>APPROVAL | 確　認<br>CHECKED | 製　作<br>DRAWN |
| Ray | Tennyson | Snow |



lead-free　RoHS compliant

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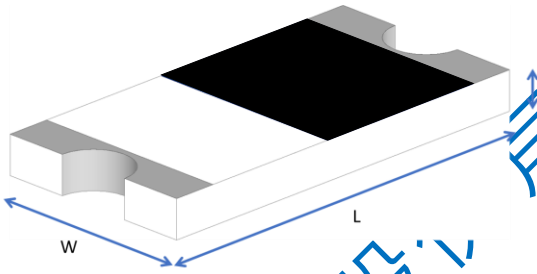
# 2012 Chip antenna

## For Bluetooth / WLAN Applications






**P/N: WAN2012F245C04**

| | Dimension (mm) |
|---|---|
| L | 2.05 ± 0.20 |
| W | 1.23 ± 0.20 |
| T | 0.45 ± 0.20 |

## Part Number Information

| WAN | 2012 | F | 245 | C | 04 |
|---|---|---|---|---|---|
| A | B | C | D | E | F |

| | | |
|---|---|---|
| A | Product Series | Antenna |
| B | Dimension L x W | 2.05X1.23mm ( ± 0.2mm) |
| C | Material | High K material |
| D | Working Frequency | 2.4 ~ 2.5GHz |
| E | Feeding mode | PIFA & Single Feeding |
| F | Antenna type | Type = 04 |

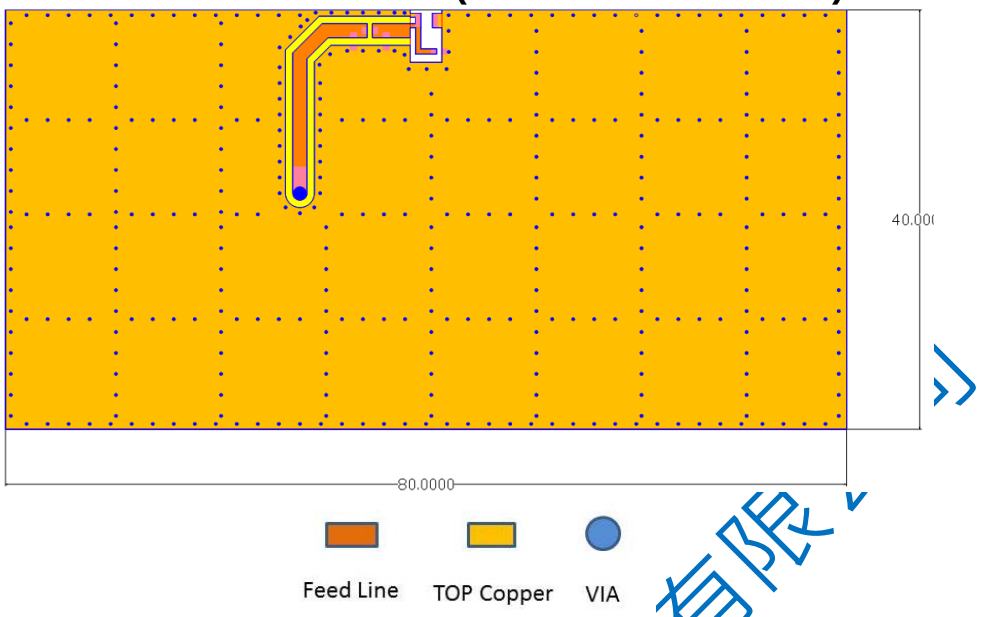
## 1. Electrical Specification

| Specification | | |
|---|---|---|
| Part Number | WAN2012F245C04 | |
| Central Frequency | 2450 | MHz |
| Bandwidth | 85 (Min.) | MHz |
| Return Loss | -6.5 (Max) | dB |
| Peak Gain | 1.72 | dBi |
| Impedance | 50 | Ohm |
| Operating Temperature | -40～+110 | ℃ |
| Maximum Power | 4 | W |
| Resistance to Soldering Heats | 10 ( @ 260℃) | sec. |
| | | |
| Polarization | Linear | |
| Azimuth Beamwidth | Omni-directional | |
| Termination | Cu / Sn (Leadless) | |

Remark : Bandwidth & Peak Gain was measured under evaluation board of next page

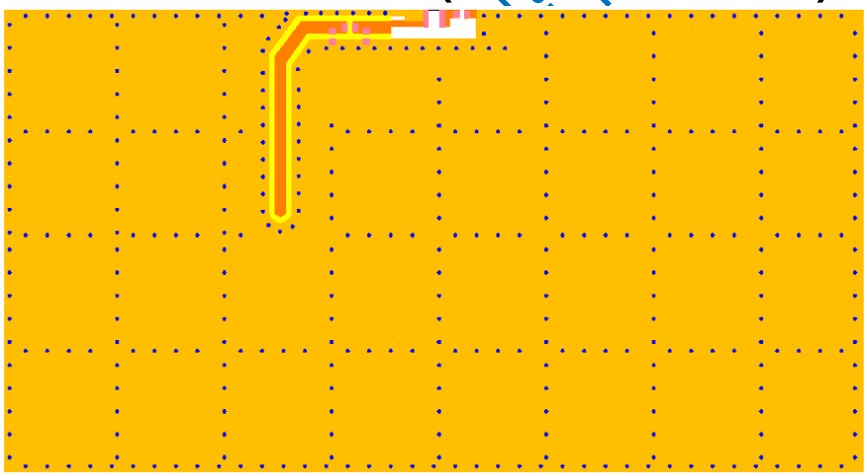
## 2. Recommended PCB Pattern

### Evaluation Board Dimension (board size 80x40mm)




### 2nd Evaluation Board Dimension

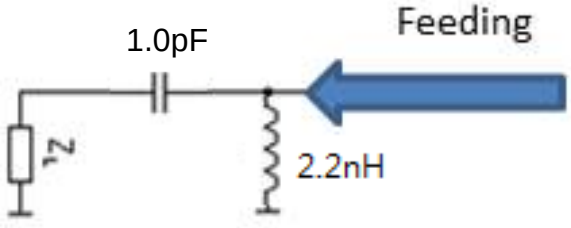
### Evaluation Board Dimension (board size 80x40mm)



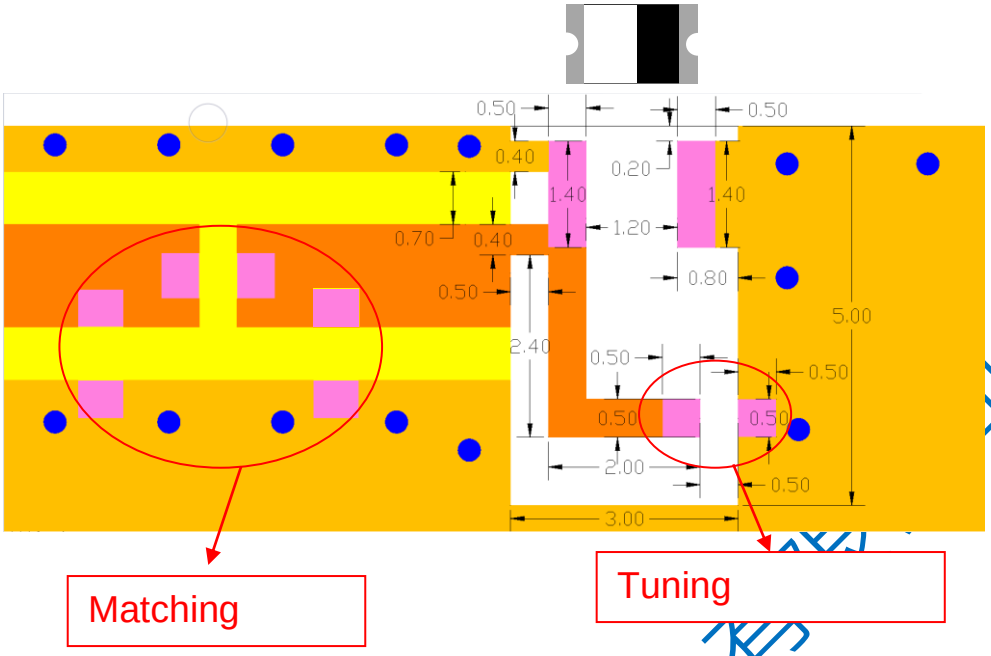
**Suggested Matching Circuit**

重要資訊：

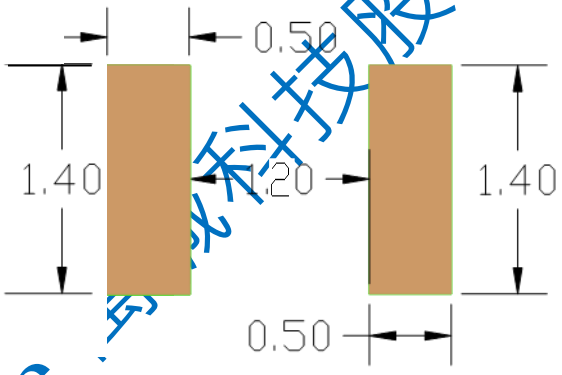
匹配元件建議使用精準度高的電感±0.1~0.3nH、電容±0.1pF



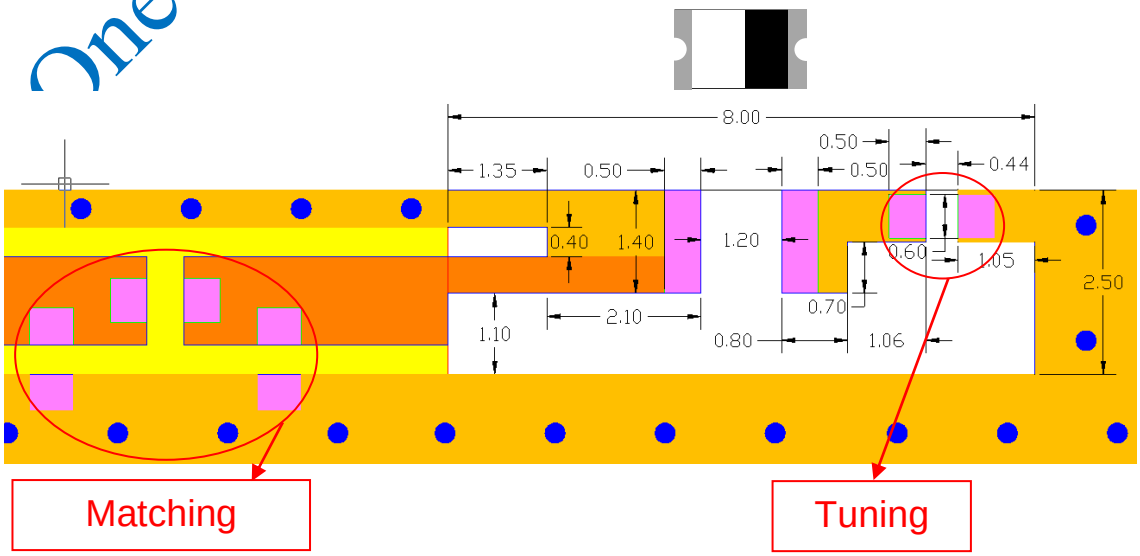
**Layout Dimensions in Clearance area( Size=3.0*5.0mm)**




**FootPrint (Unit : mm)**

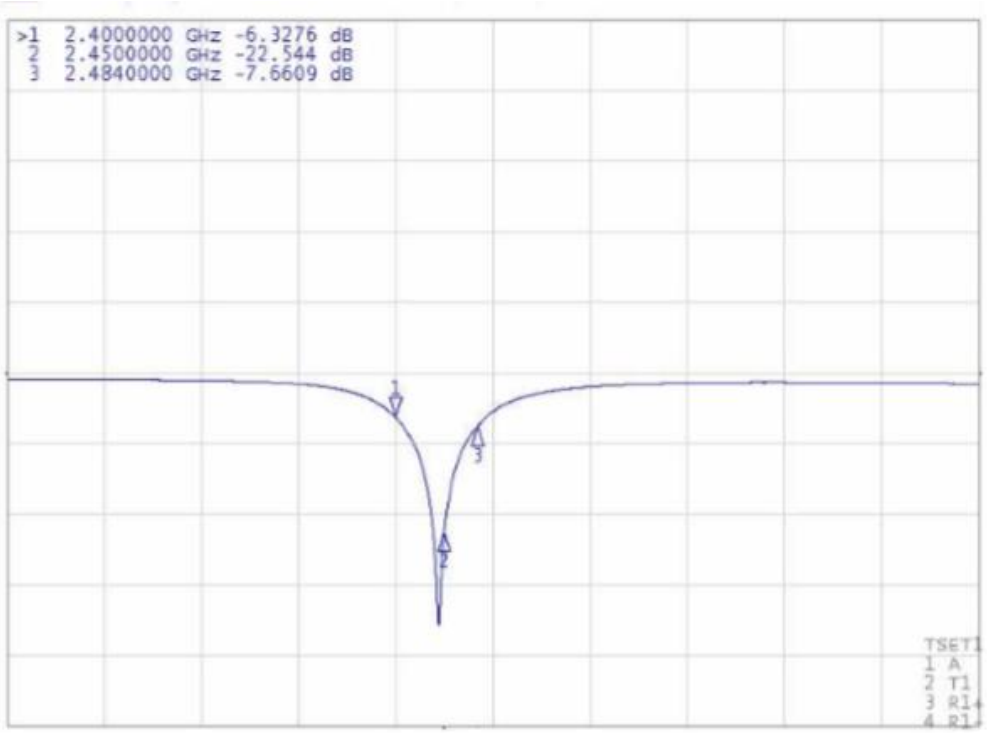



- **2nd Layout Dimensions in Clearance area( Size=8.0*2.5mm)**

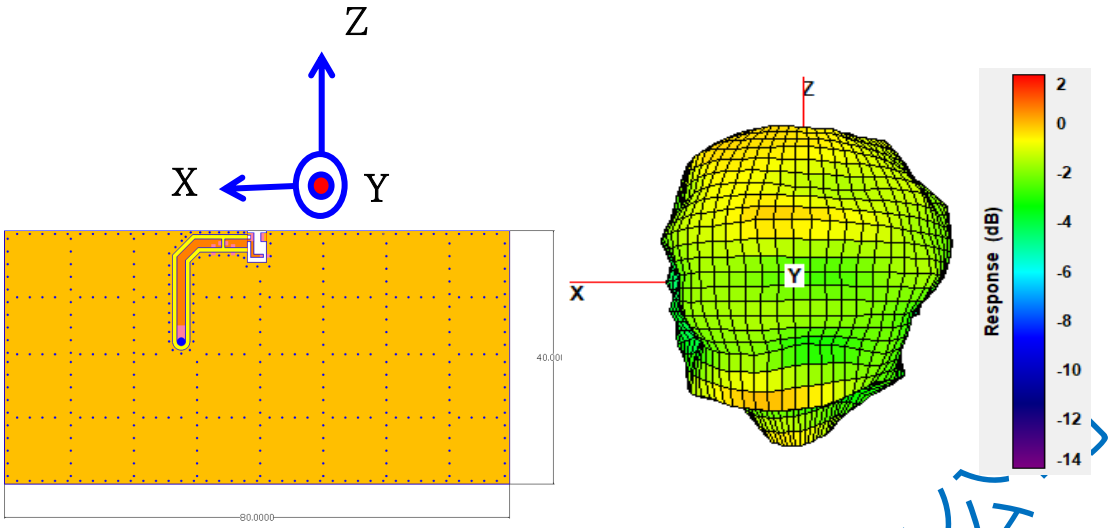


## 3. Measurement Results

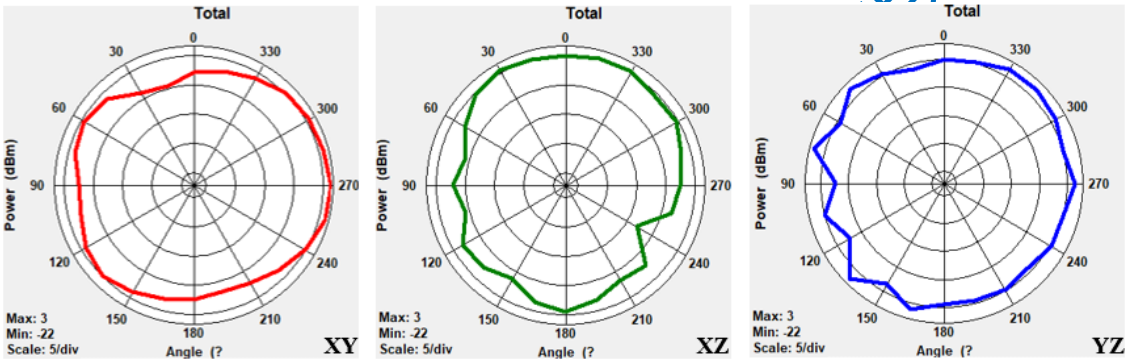
### Return Loss



## 3D Radiation Pattern




## 2D Radiation Pattern




| | Efficiency | Peak Gain | Directivity |
|---|---|---|---|
| 2400MHz | 63.12 % | 1.62 dBi | 3.61 dBi |
| 2450MHz | 70.56 % | 1.72 dBi | 3.23 dBi |
| 2500MHz | 65.48 % | 1.64 dBi | 3.47 dBi |

Chamber Coordinate System