

Data Sheet

CUSTOMER : _____

MODEL NAME: AC001S Chip Antenna

CUSTOMER P/N : _____

AWAN P/N : _____

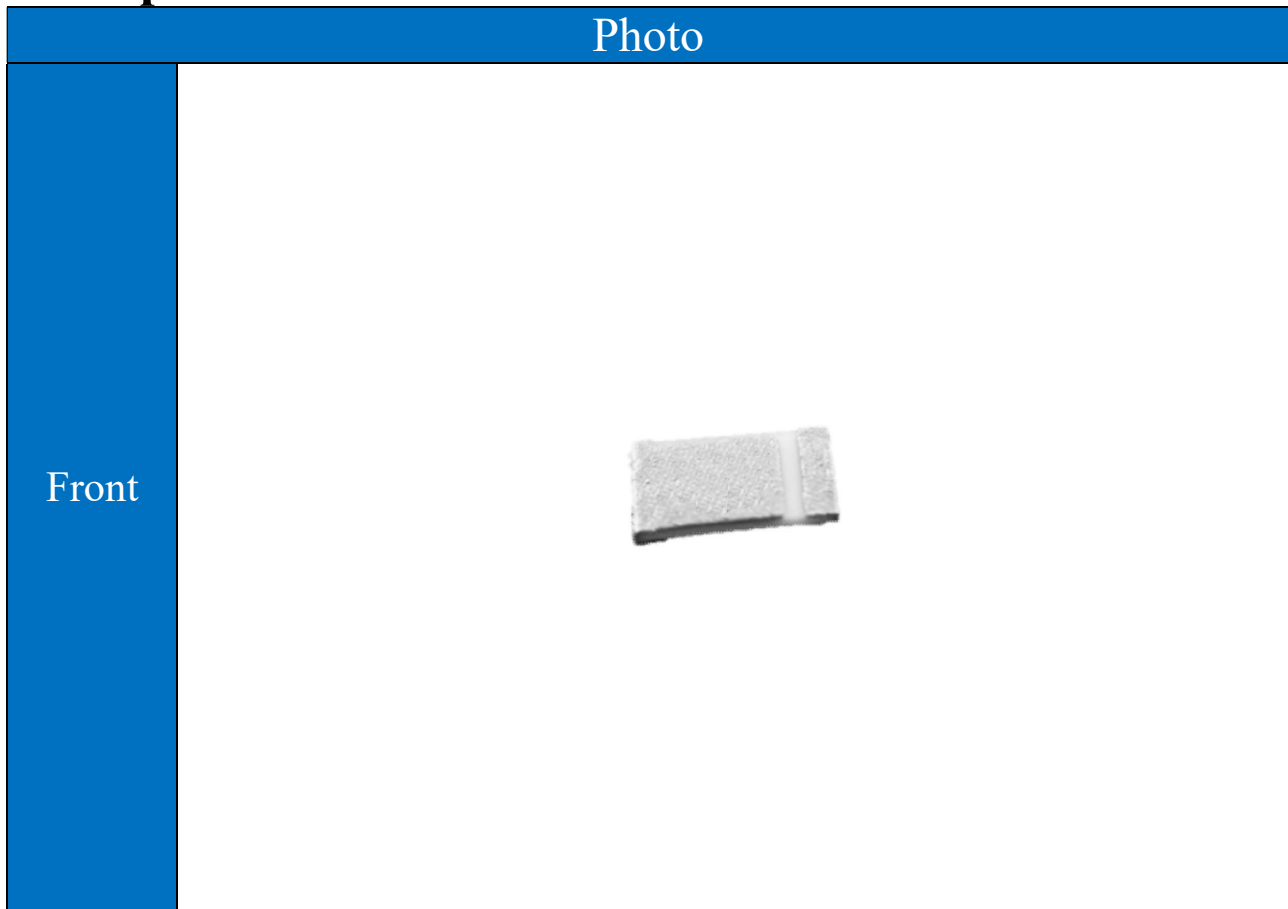


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Index

- 1. Chip Antenna Picture**
- 2. Features**
- 3. Applications**
- 4. Layout Guide & Electrical Specifications**
- 5. Outline Dimensions of Antenna & Evaluation Board (unit: mm)**
- 6. Radiation Pattern**
- 7. Frequency tuning and Matching circuit**
- 8. Soldering Conditions**
- 9. Packing**
- 10. Operating & Storage Conditions**

1. Chip Antenna Picture



2. Features

- *Stable and reliable in performances
- *Low profile, compact size
- *RoHS compliance
- *SMT processes compatible

3. Applications

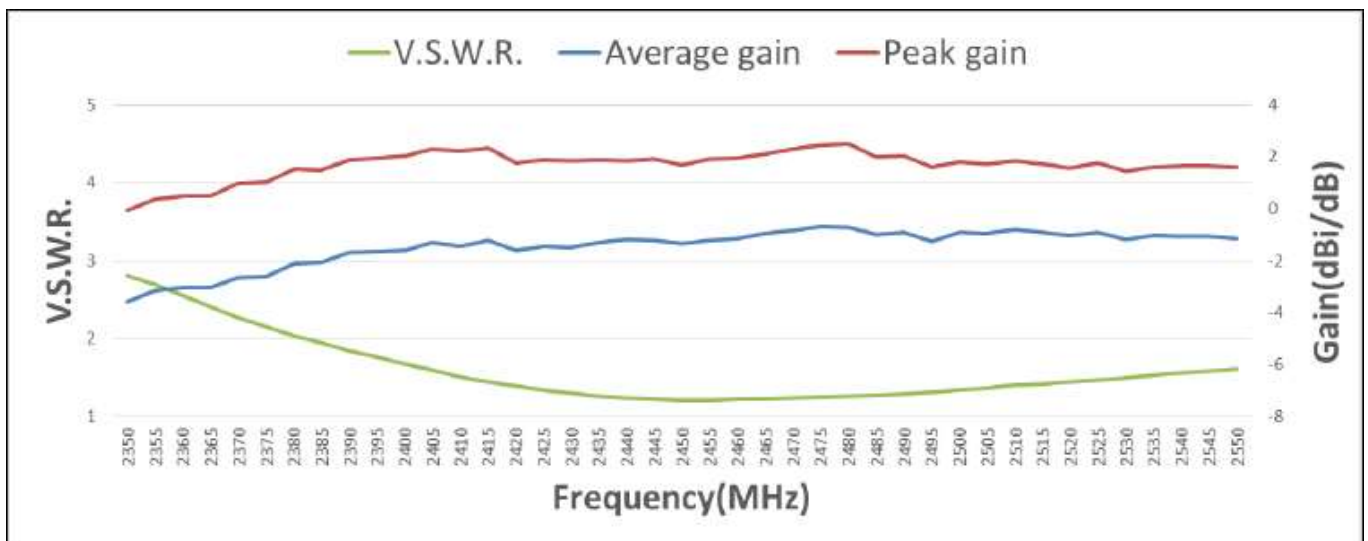
- *ISM 2.4 GHz applications
- *ZigBee/BLE applications
- *Bluetooth earphone systems
- *Hand-held devices when WiFi / Bluetooth functions are needed, e.g., Smart phones
- *IEEE802.11 b/g/n
- *Wireless PCMCIA cards or USB dongles

4-2 Electrical Specifications

4-2-1 Electrical Table

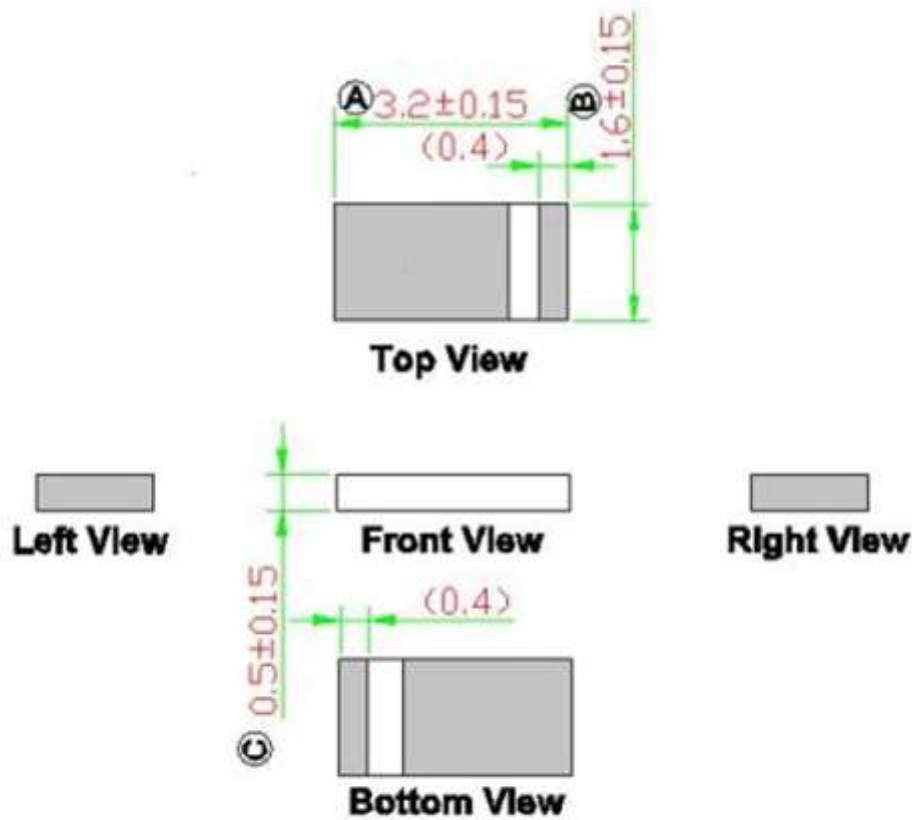
| Characteristics | | Specifications | Unit |
|----------------------------|-------------|---------------------|----------|
| Outline Dimensions | | 3.2 x 1.6 x 0.5 | mm |
| Ground Plane Dimensions | | 80 x 40 | mm |
| Working Frequency | | 2400~2500 | MHz |
| VSWR (@ center frequency)* | | 2 Max. | |
| Characteristic Impedance | | 50 | Ω |
| Polarization | | Linear Polarization | |
| Peak Gain | (@2442 MHz) | 1.8 (typical**) | dBi |
| Efficiency | | 76.3 (typical**) | % |

4-2-2 Frequency VS.VSWR and total Radiation Gain



5. Outline Dimensions of Antenna & Evaluation Board (unit: mm)

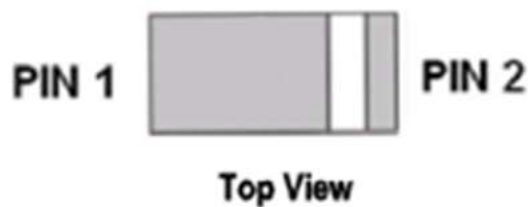
5-1 Antenna Dimensions



NOTE:

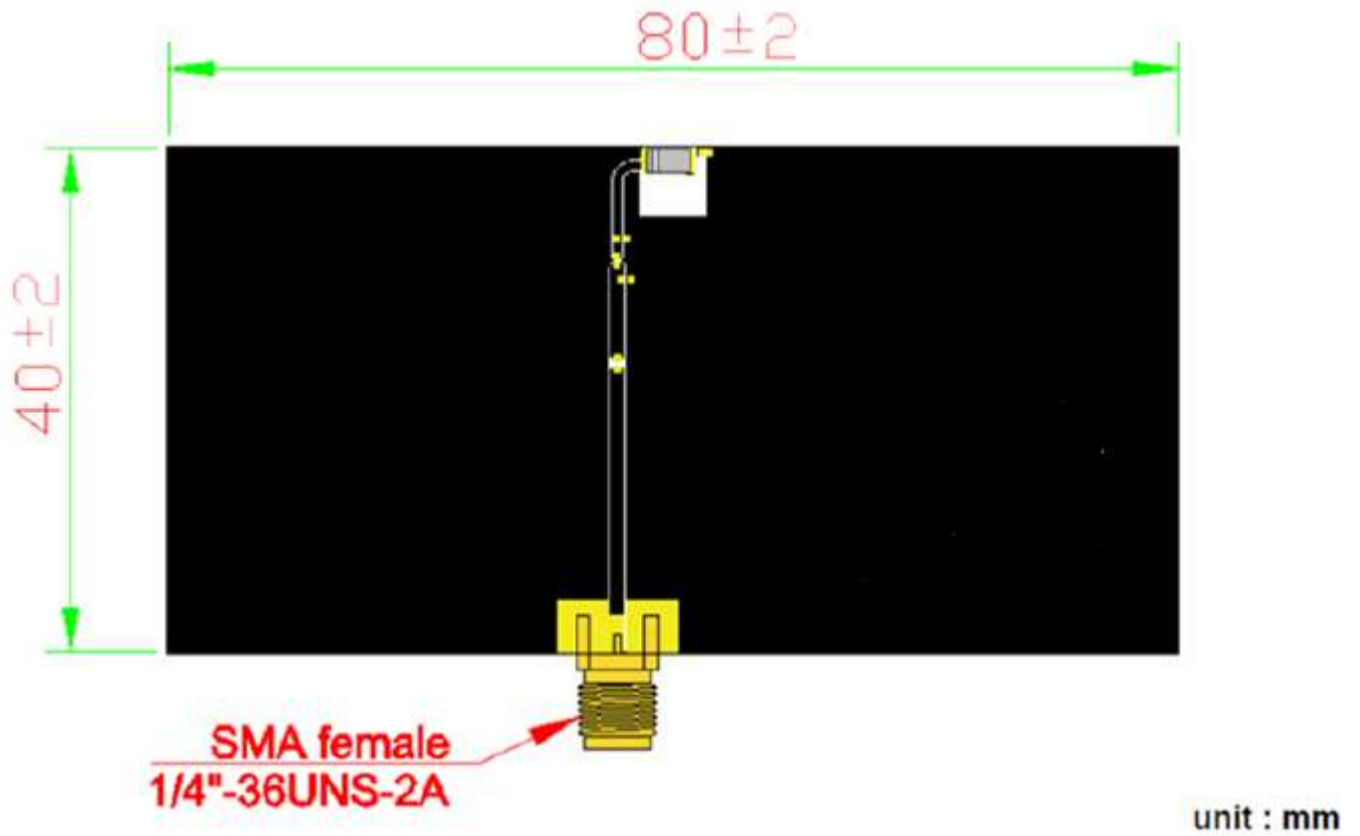
1. All materials are RoHS 2.0 compliant.
2. "A~C" Critical Dimensions.
3. "()" Reference Dimensions.

PIN Definition



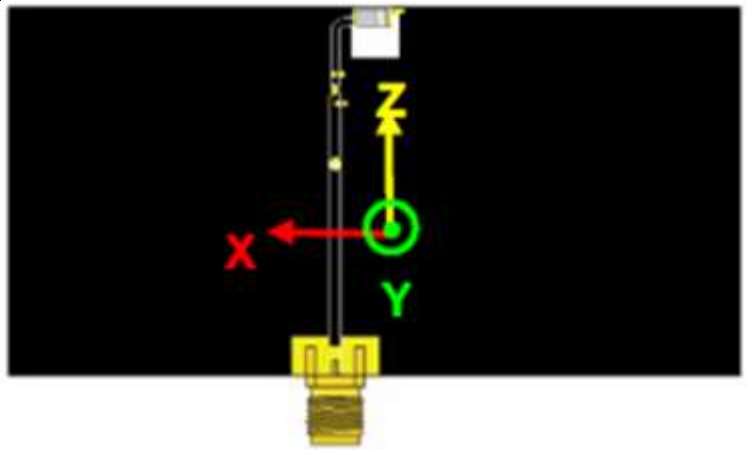
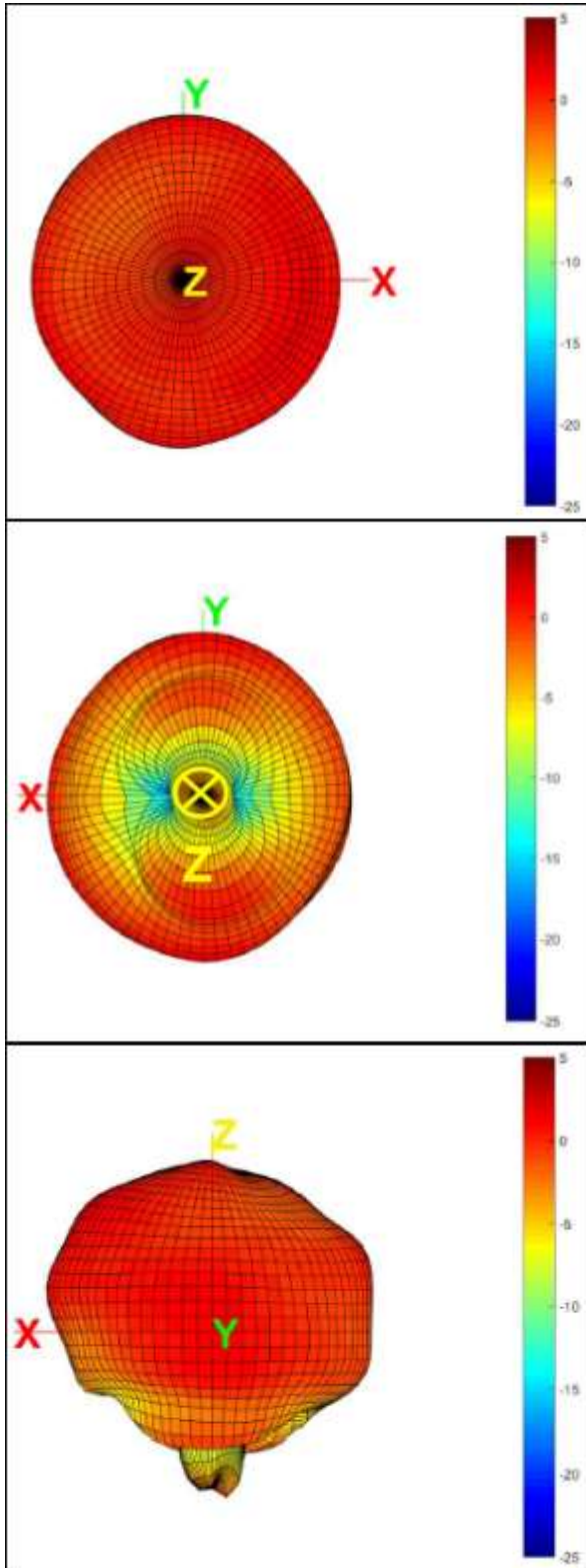
| PIN | 1 | 2 |
|---------------|--------|-----------------|
| Soldering PAD | Signal | Tuning / Ground |

5-2 Evaluation Board with Antenna



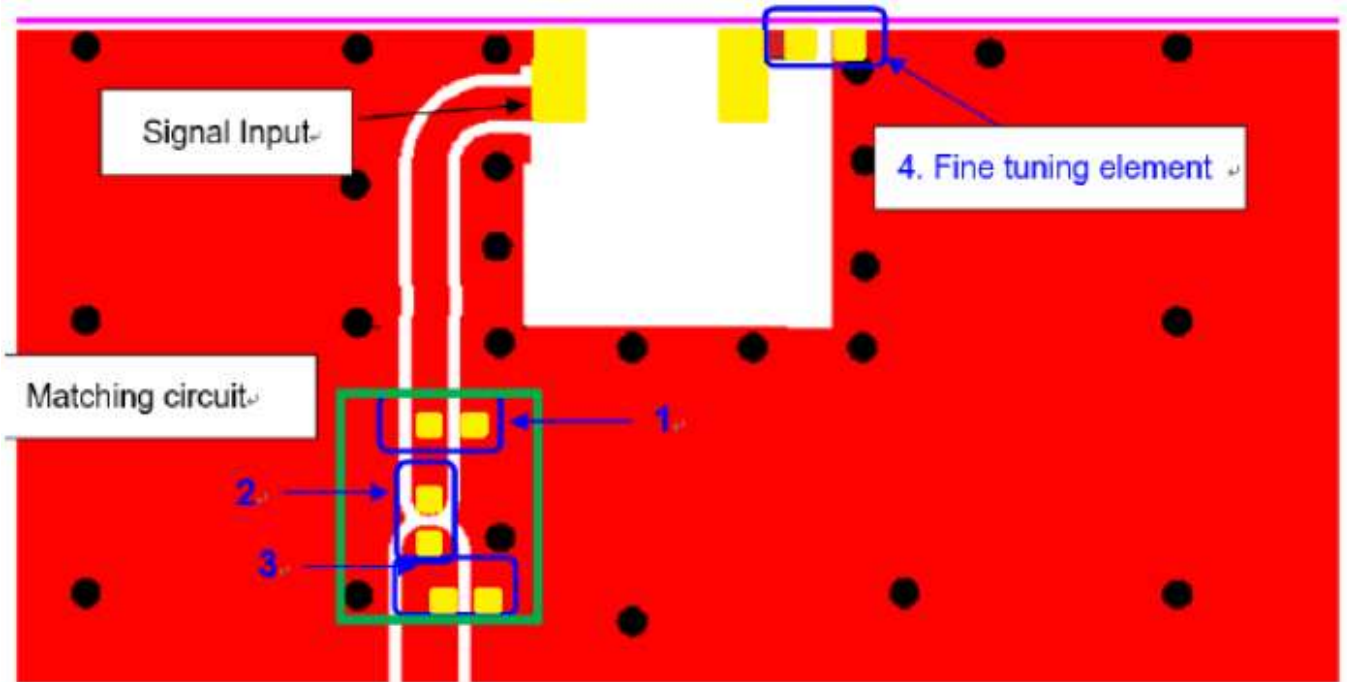
6. Radiation Pattern

6-1 Gain Patten @ 2442 MHz (unit: dBi)



7. Frequency tuning and Matching circuit

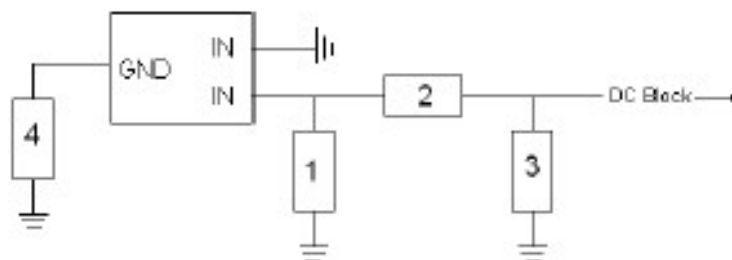
7-1. Chip antenna tuning scenario:



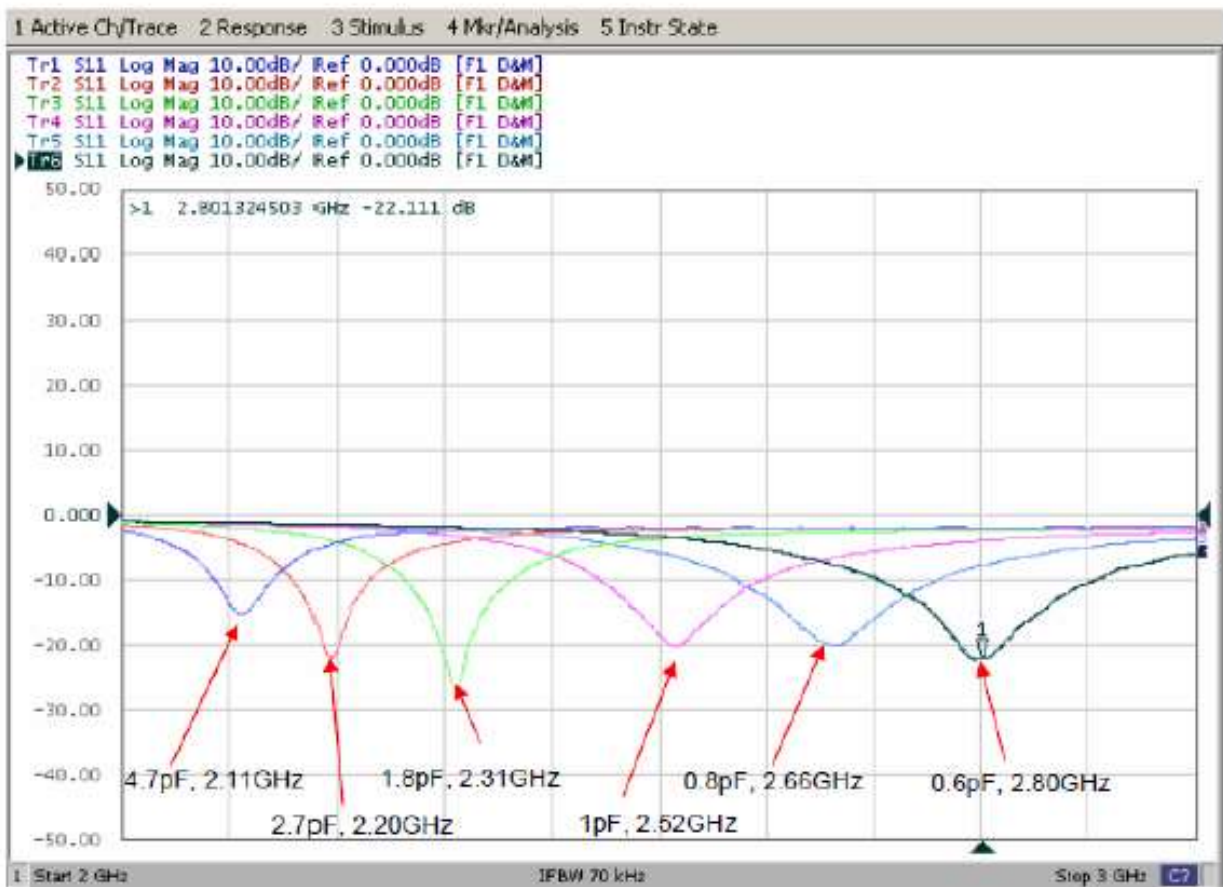
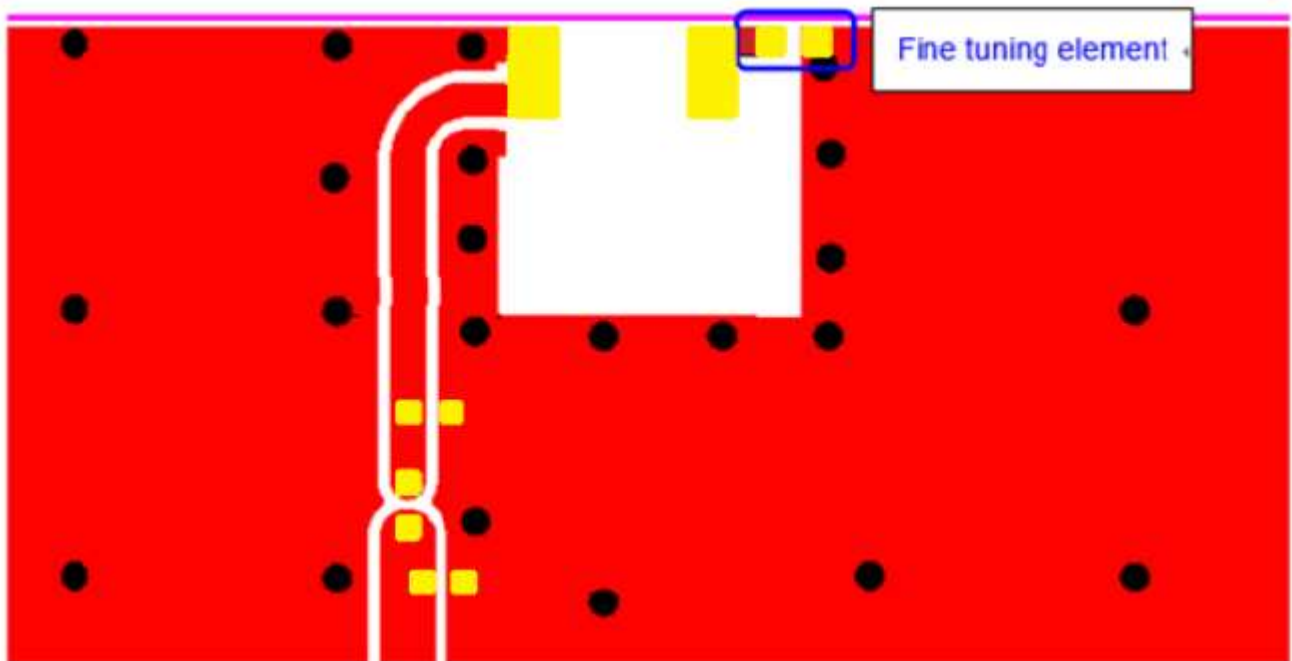
7-2. Matching circuit:

With the following recommended values of matching and tuning components, the center frequencies will be about 2442 MHz at our standard 40 x 20 mm² evaluation board. However, these are typical reference values which may need to be changed when circuit boards or part vendors are different.

| System Matching Circuit Component | | | |
|-----------------------------------|---------------|--------|-----------|
| Location | Description | Vendor | Tolerance |
| 1 | 1.2pF, (0402) | MURATA | ±0.05 pF |
| 2 | 3.3nH, (0402) | MURATA | ±0.1 nH |
| 3 | NA | | |
| Fine tuning element 4 | 1.2pF, (0402) | MURATA | ±0.05 pF |

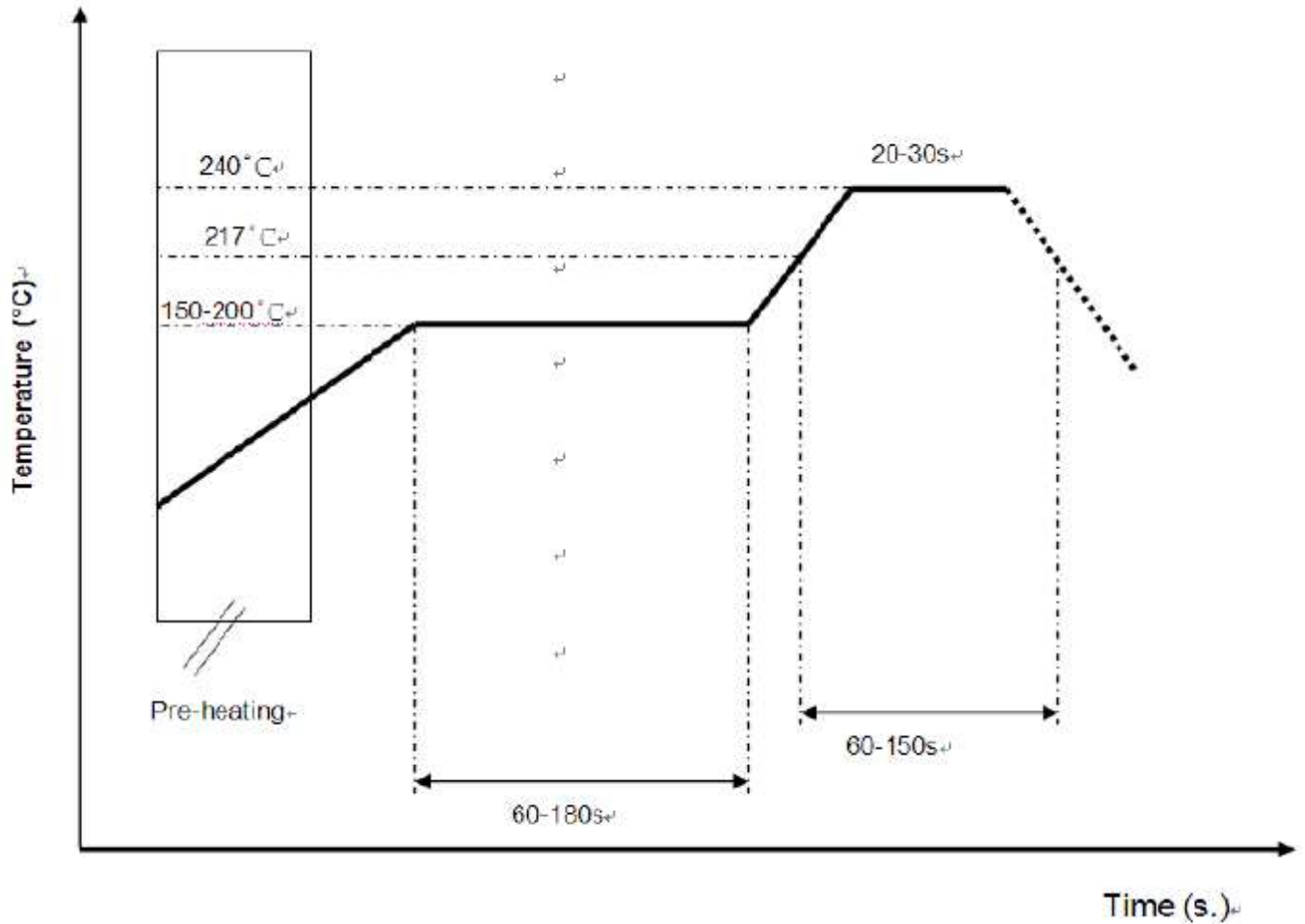


7-3. Reference for the frequency tuning element



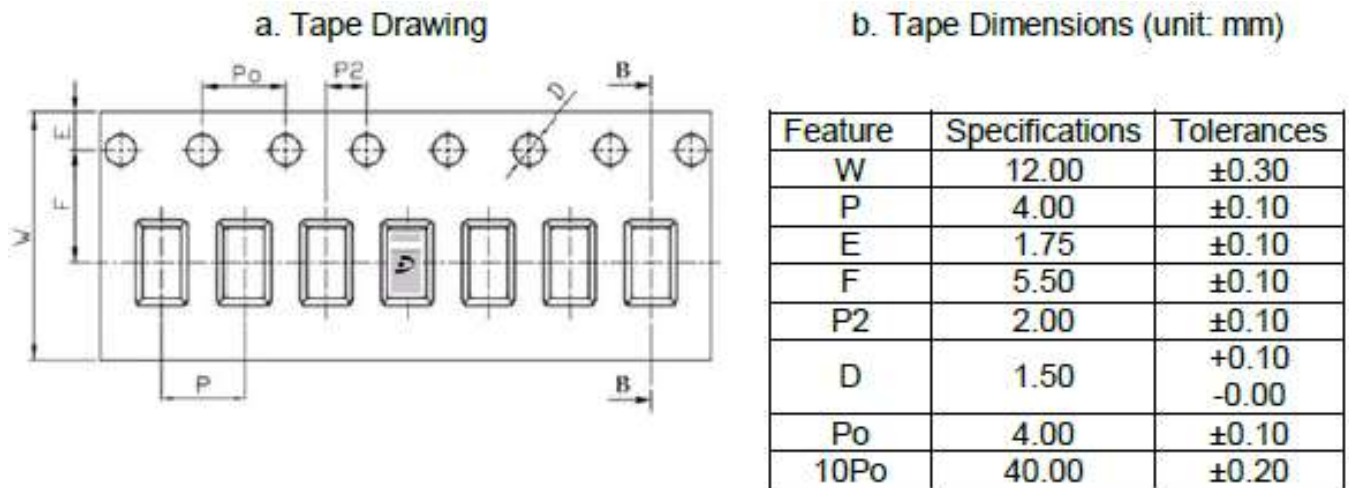
8. Soldering Conditions

8-1. Typical Soldering Profile for Lead-free Process



9. Packing

- (1) Quantity/Reel: 5000 pcs/Reel
- (2) Cardboard tape: Black conductive polystyrene
- (3) Packaging method is implemented according to “MSL 2a 包裝作業指導書”



10. Operating & Storage Conditions

10-1. Operating

- (1) Maximum input power: 2 W
- (2) Operating Temperature: -40°C to 85°C
- (3) Relative Humidity: 10% to 70%

10-2. Storage (sealed)

- (1) Storage Temperature: -5°C to 40°C
- (2) Relative Humidity: 20% to 70%
- (3) Shelf Life: 1 year

10-3. Storage (unsealed)

Meet the criteria of J-STD-033 MSL2a

10-4. Storage (After mounted on customer's PCB with SMT process)

- (1) Storage Temperature: -40°C to 85°C
- (2) Relative Humidity: 10% to 70%