

AN9520

Multilayer Chip Antenna for 2.4GHz Wireless Communication



AN9520 Multilayer Chip Antenna

◆ Features

- Light weight and low profile 9.5mm(L)X2.1mm(W)X1.0mm(H)
- Omni-directional in azimuth
- Lead (Pb) Free

◆ Applications

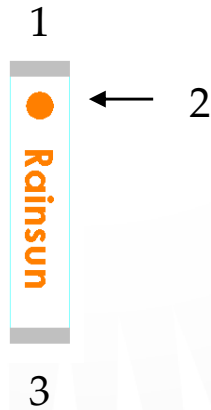
- 2.4GHz wireless communications
- 2.4GHz Modules
- Bluetooth System
- 802.11b/g Wireless LAN System

Specifications

| | |
|-----------------------|------------------|
| Center frequency | 2.45GHz |
| Peak gain | 1.5dBi |
| Operation temperature | -40 ~ +85 °C |
| Storage temperature | -40 ~ +85 °C |
| VSWR | 2.0 (max) |
| Input Impedance | 50 Ohm |
| Power handling | 3W (max) |
| Bandwidth | 200MHz |
| Azimuth beamwidth | Omni-directional |
| Polarization | Linear |

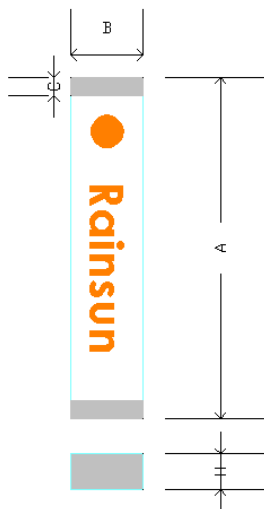
Pin configuration

Top view



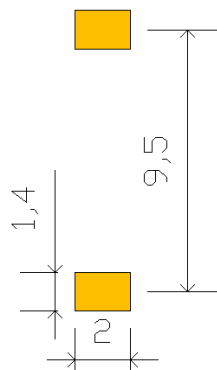
| Pin No | Pin assignment |
|--------|--------------------|
| 1 | Feed termination |
| 2 | Feed point mark |
| 3 | Solder termination |

Dimensions



| Symbol | Dimensions(mm) |
|--------|-----------------|
| A | 9.50 ± 0.10 |
| B | 2.10 ± 0.10 |
| C | 0.65 ± 0.05 |
| H | 1.00 ± 0.20 |

PCB foot printer



Recommended Test Board Pattern

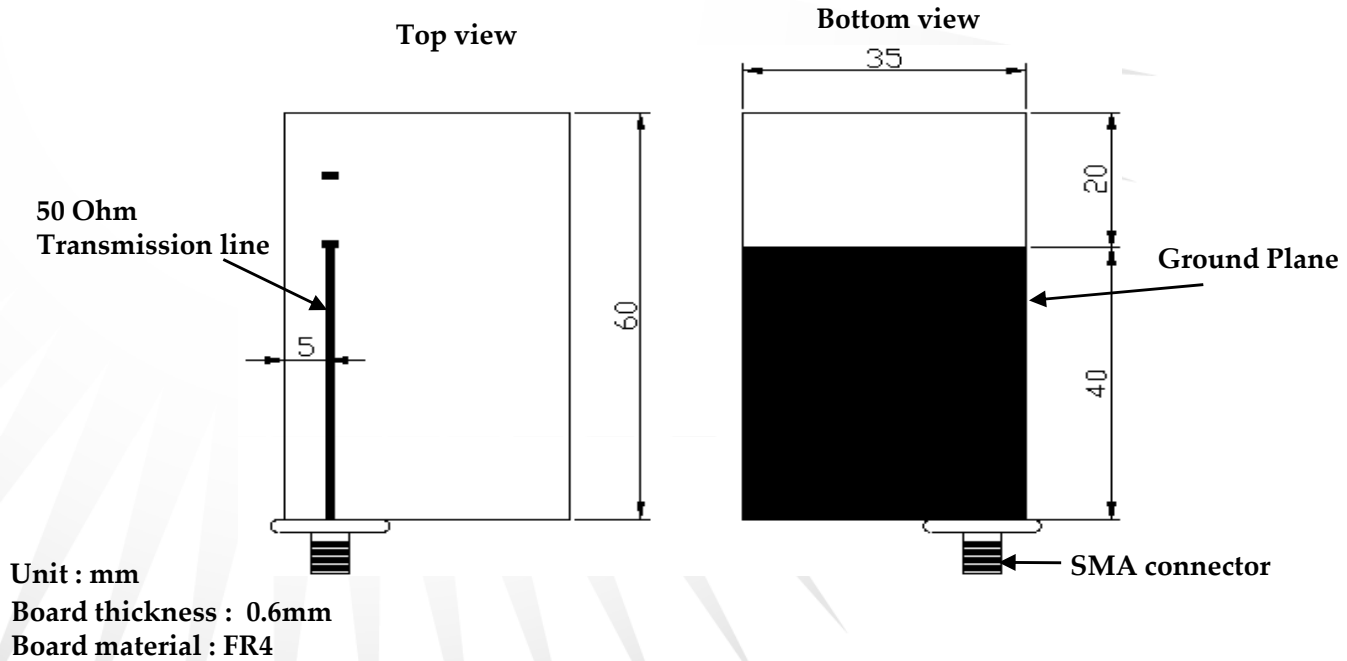
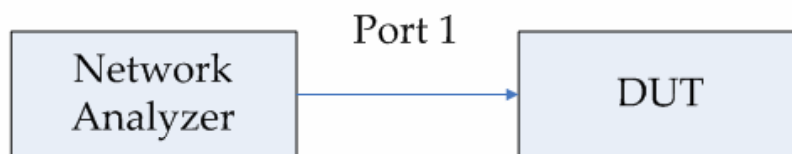


Fig-1

Testing Setup



Measurement



Testing Instrument:

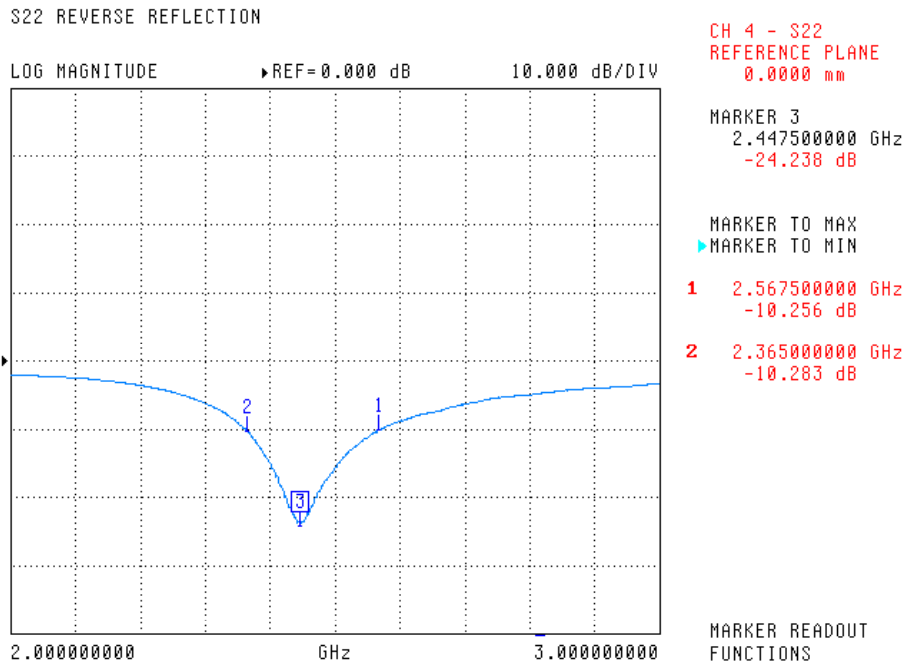
Anritsu 37369C VNA (Vector Network Analyzer)

VNA calibrate with 1 path reflection only calibration sequence on test board feed point.

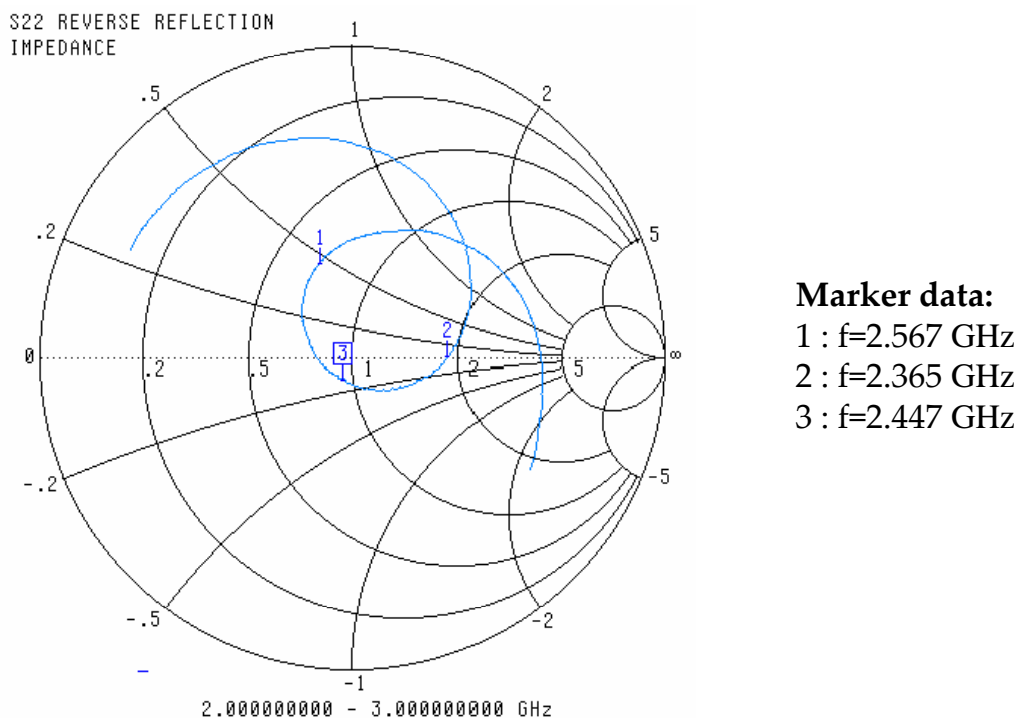
The test board dimension and its layout is the same as Fig-1.

Typical Electrical Characteristics

Return loss

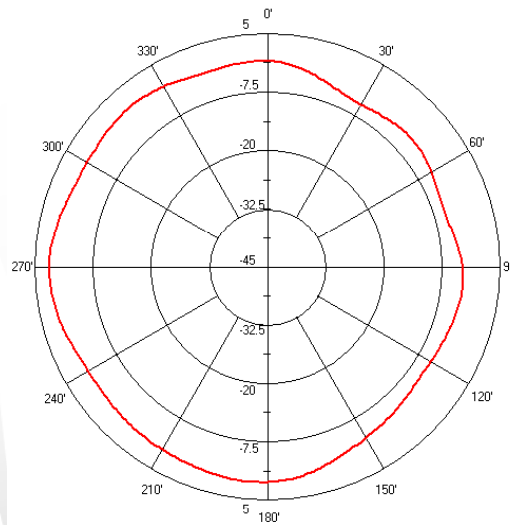


Smith Chart

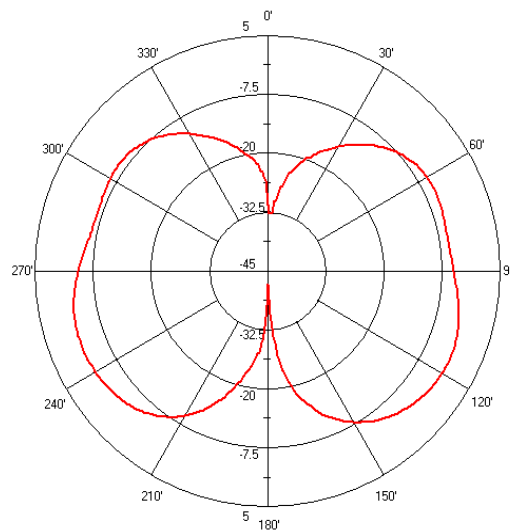


Typical Radiation Patterns

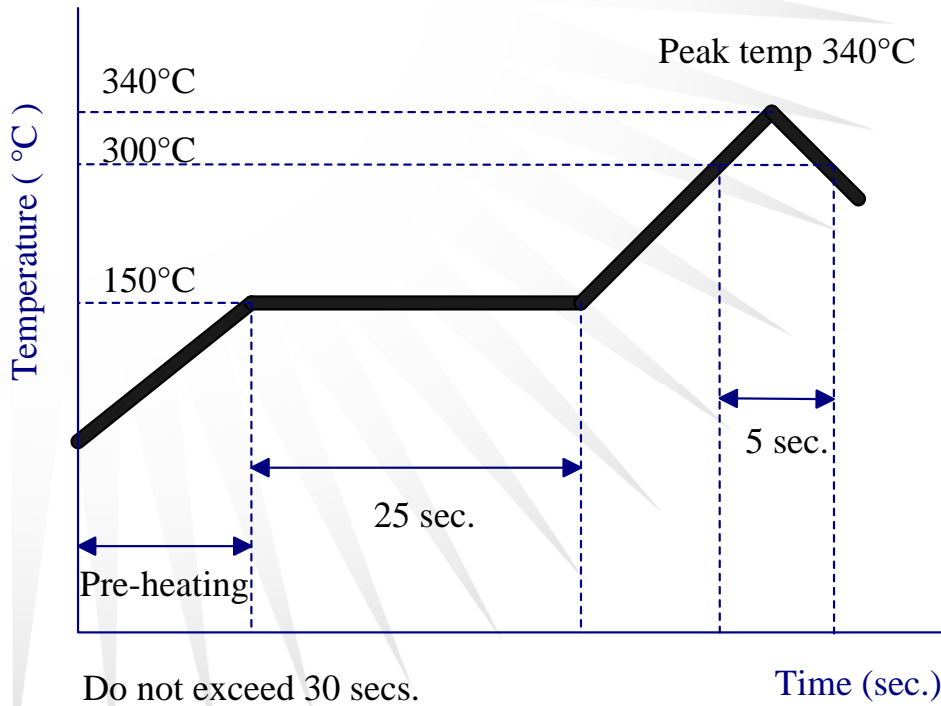
2.45 GHz H-Plane



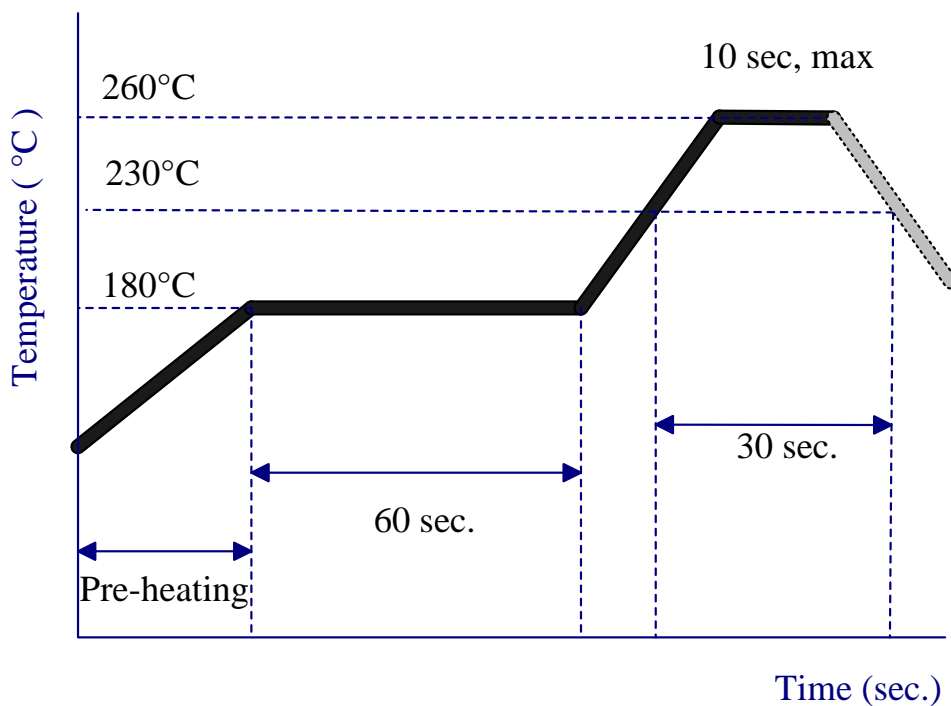
2.45 GHz E-Plane



Typical Soldering Profile for Lead-free Process

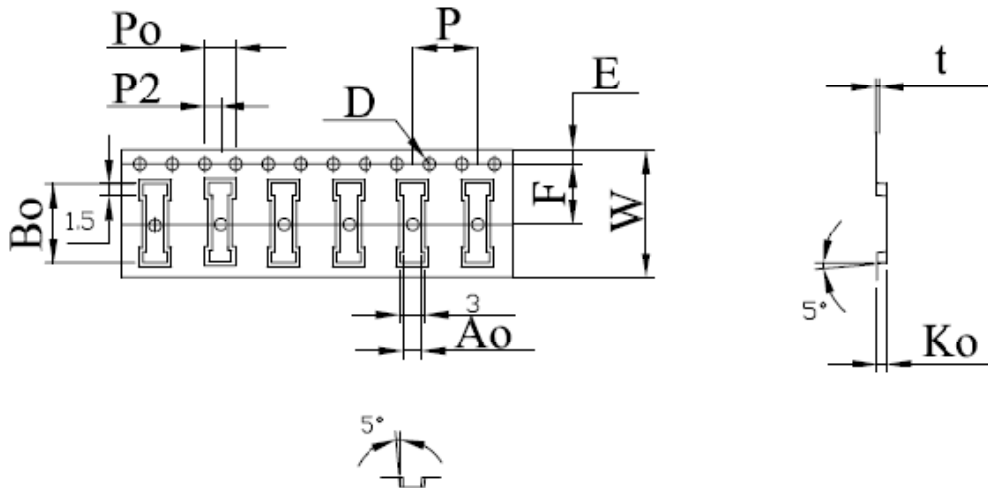


Reflow Soldering



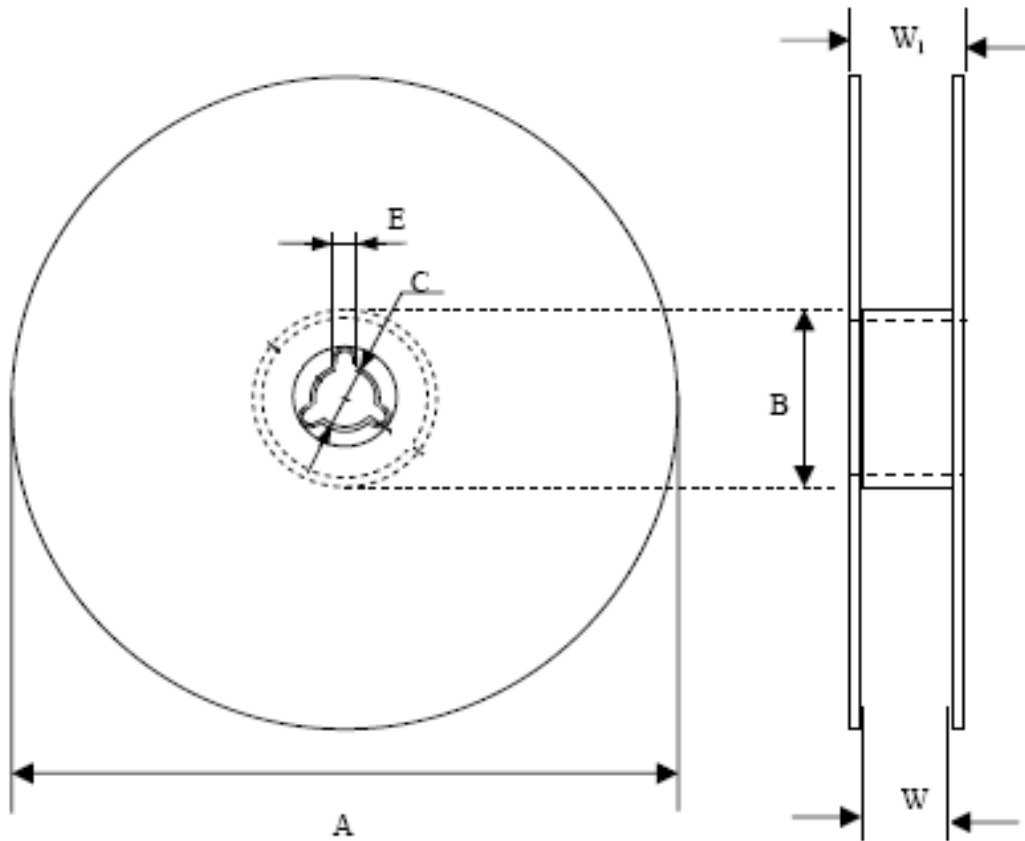
Packing

Blister Tape Specifications



| Symbol | Dimension | Tolerance | Unit |
|----------------|-----------|------------------|------|
| W | 16.00 | ± 0.30 | mm |
| E | 1.75 | ± 0.10 | mm |
| F | 7.50 | ± 0.10 | mm |
| D | 1.50 | + 0.10 - 0.00 | mm |
| D ₁ | 1.50 | + 0.25 - 0.00 | mm |
| P ₀ | 4.00 | ± 0.10 | mm |
| P | 8.00 | ± 0.10 | mm |
| P ₂ | 2.00 | ± 0.10 | mm |
| A ₀ | 2.20 | ± 0.10 | mm |
| B ₀ | 10.00 | ± 0.10 | mm |
| K ₀ | 1.20 | ± 0.10 | mm |
| t | 0.30 | ± 0.05 | mm |

Reel Specifications



| Quantity Per Reel | Tape Width (mm) | A (mm) | C (mm) | B (mm) | E (mm) | W (mm) | W ₁ (mm) |
|-------------------|-----------------|--------|----------|--------|---------|--------|---------------------|
| 1,500 | 16 | 180±1 | 13.0±0.5 | 62±0.5 | 2.2±0.5 | 16±0.5 | 20±0.2 |

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