

AN0835

Multilayer Chip Antenna for 2.4GHz Wireless Communication



AN0835 Multilayer Chip Antenna

◆ Features

- Light weight and low profile 8.0mm(L) × 3.5mm(W) × 1.0mm(H)
- Omni-directional in azimuth
- Lead (Pb) Free

◆ Applications

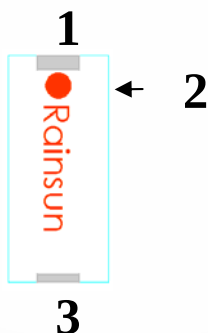
- 2.4GHz wireless communications
- 2.4GHz Modules
- Bluetooth System
- 802.11b/g Wireless LAN System

Specifications

Center frequency	2.45 GHz
Peak gain	1 dBi
Operation temperature	-40 °C ~ +85 °C
Storage temperature	-40 °C ~ +85 °C
VSWR	2.0 (max)
Input Impedance	50 Ohm
Power handling	3W (max)
Bandwidth	180 MHz
Azimuth beamwidth	Omni-directional
Polarization	Linear

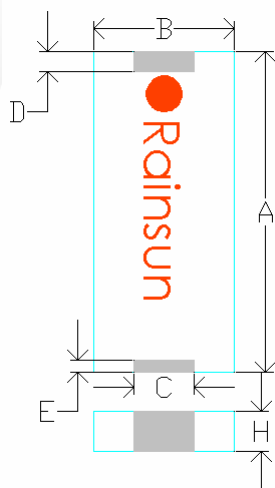
Pin configuration

Top view



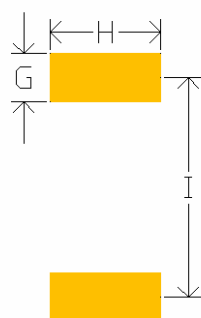
Pin No	Pin assignment
1	Feed termination
2	Feed point mark
3	Solder termination

Dimensions



Symbol	Dimensions(mm)
A	8.00 ± 0.10
B	3.50 ± 0.10
C	1.50 ± 0.02
D	0.50 ± 0.05
E	0.30 ± 0.05
H	1.00 ± 0.20

PCB Foot Print



Symbol	Dimensions(mm)
G	1.0
H	1.9
I	8.0

Recommended Test Board Pattern

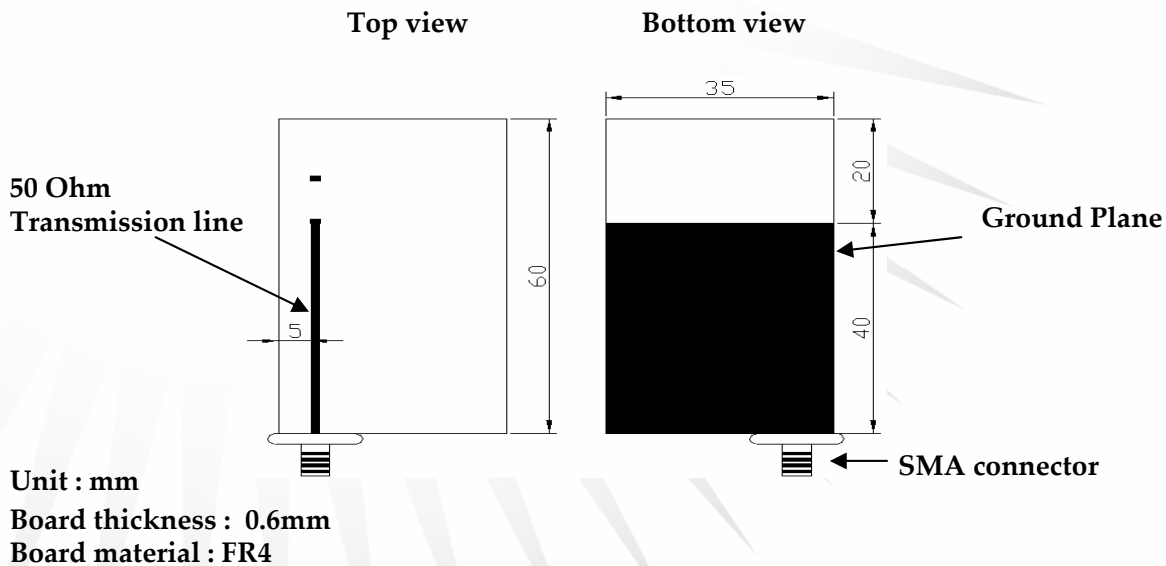
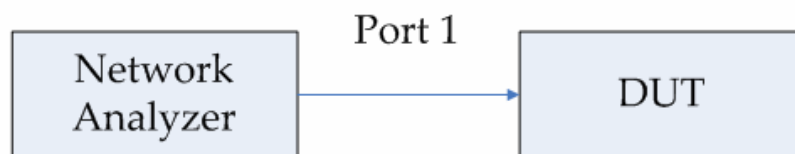


Fig-1

Testing Setup



Measurement



Testing Instrument:

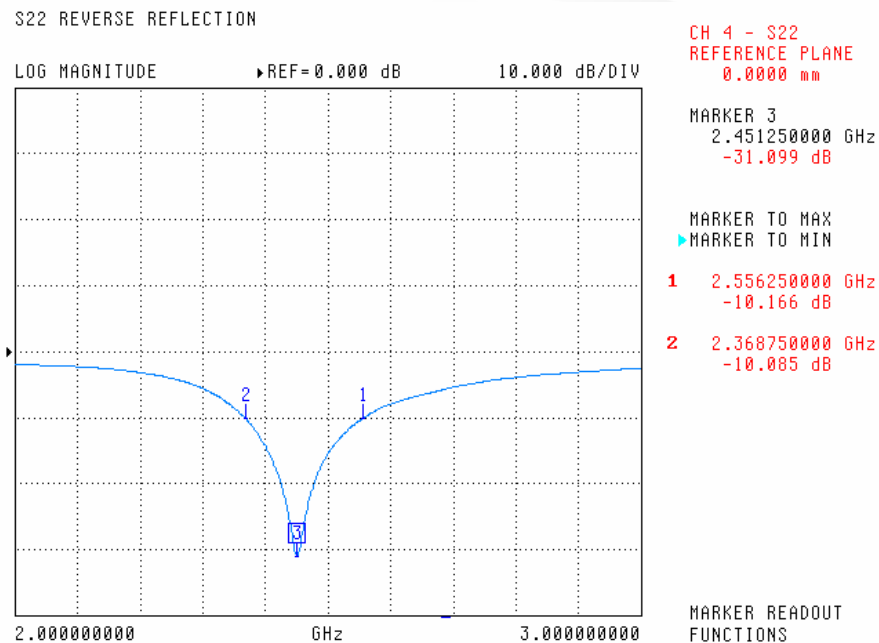
Anritsu 37369C VNA(Vector Network Analyzer)

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

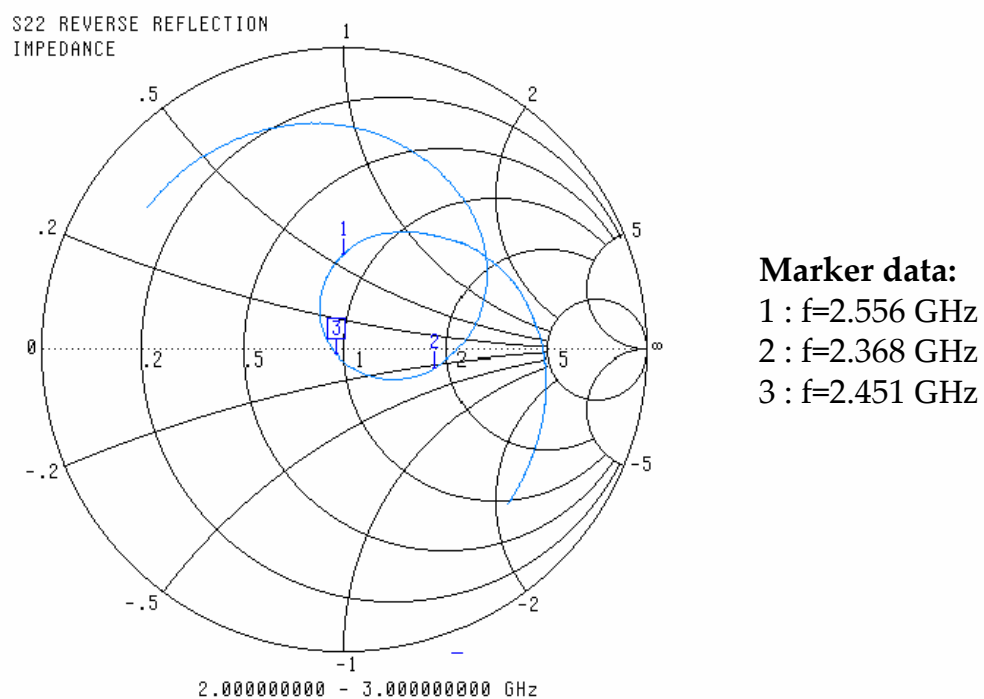
The test board dimension and it's layout is the same as Fig-1.

Typical Electrical Characteristics

Return loss

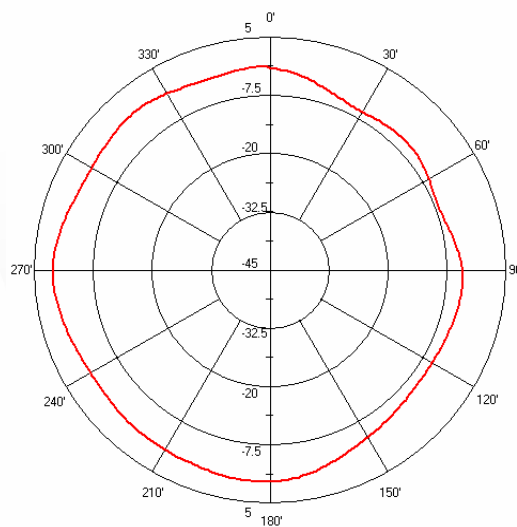


Smith Chart

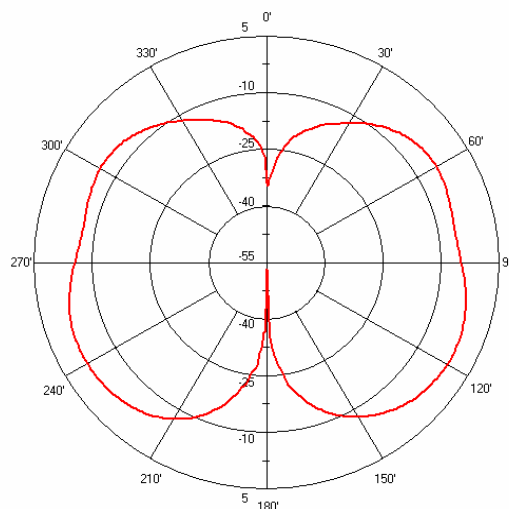


Typical Radiation Patterns

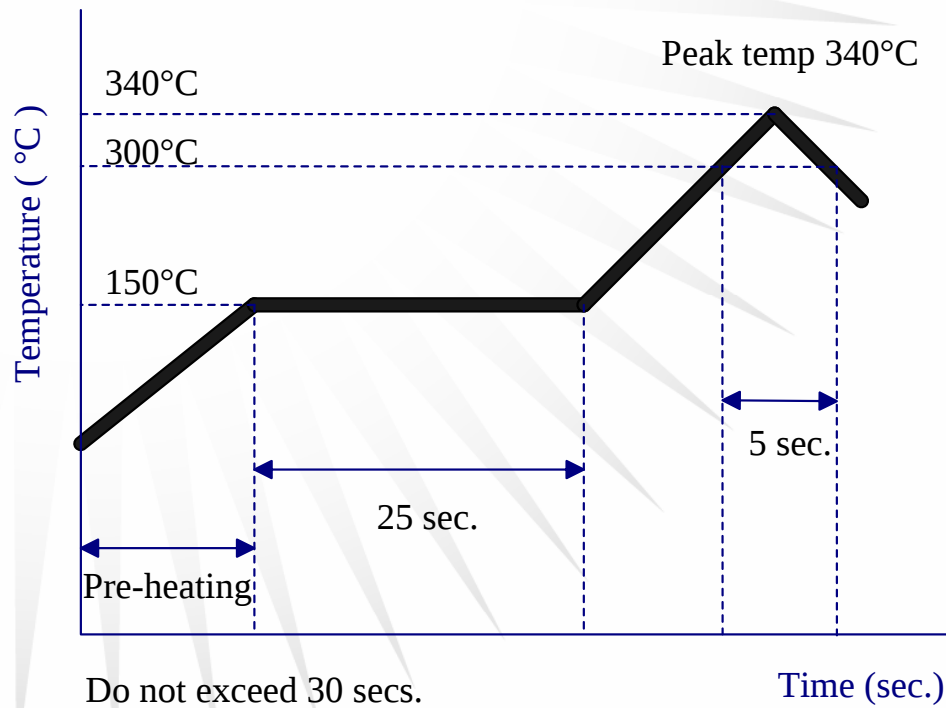
2.45 GHz H-Plane



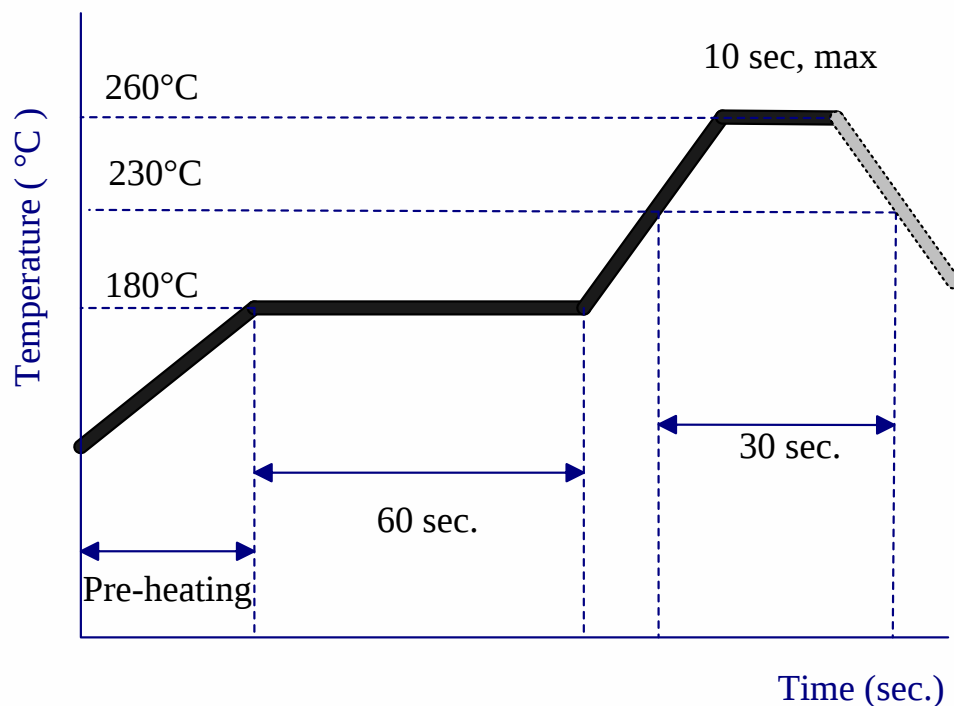
2.45 GHz E-Plane



Typical Soldering Profile for Lead-free Process

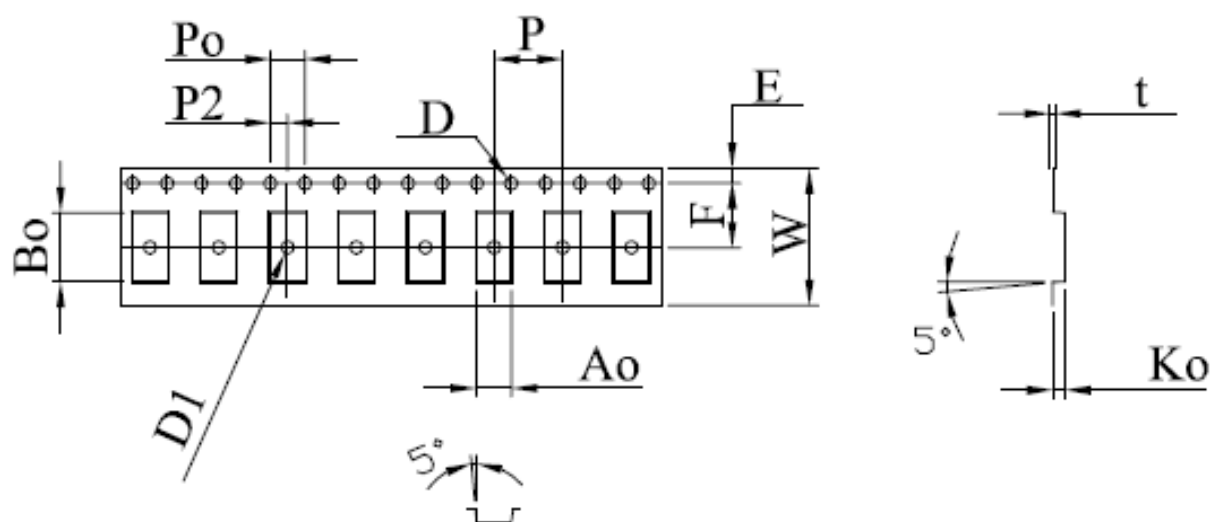


Reflow Soldering



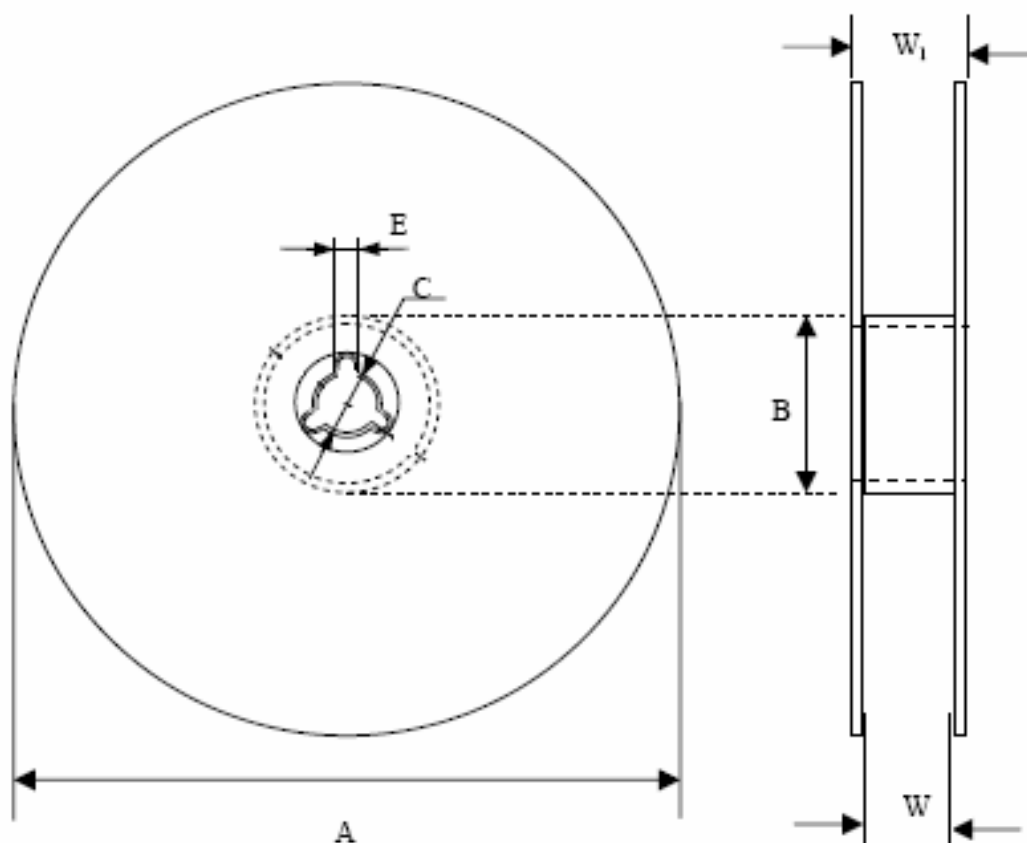
Packing

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	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	3.70	± 0.10	mm
B_0	8.20	± 0.10	mm
K_0	1.40	± 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)
1,000	16	178±1	13±0.2	60±0.5	2.2±0.5	16.7±0.3	19.5±1.0