

AN6520

Multilayer Chip Antenna for 2.4GHz Wireless Communication

AN6520 Multilayer Chip Antenna

◆ Features

- Light weight and low profile 6.5mm(L)X2.2mm(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	0.5dBi
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

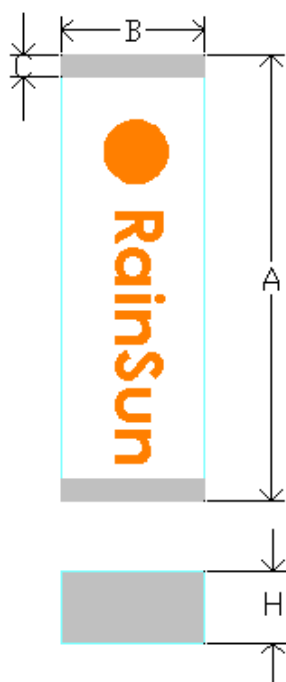
Pin configuration

Top view



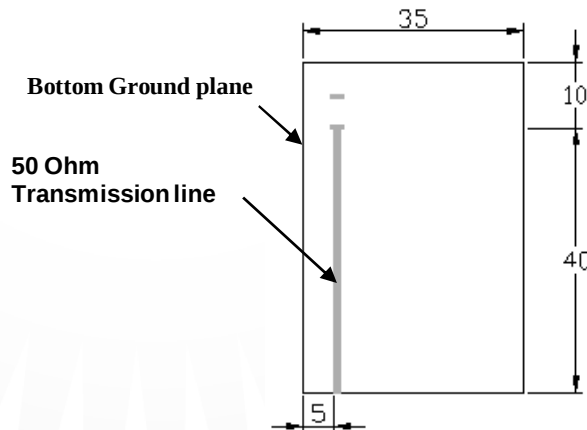
Pin No	Pin assignment
1	Feed termination
2	Feed point mark
3	Solder termination

Dimensions



Symbol	Dimensions(mm)
A	6.50 ± 0.10
B	2.20 ± 0.10
C	0.30 ± 0.05
H	1.00 ± 0.20

Recommended Test Board Pattern



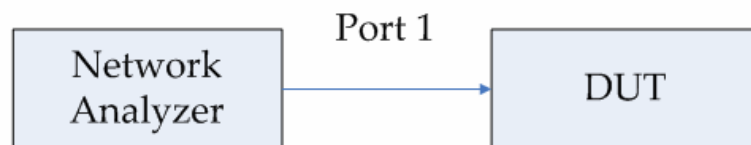
Unit : mm

Board thickness : 0.6mm

Board material : FR4

Fig-1

Testing Setup



Measurement



Testing Instrument:

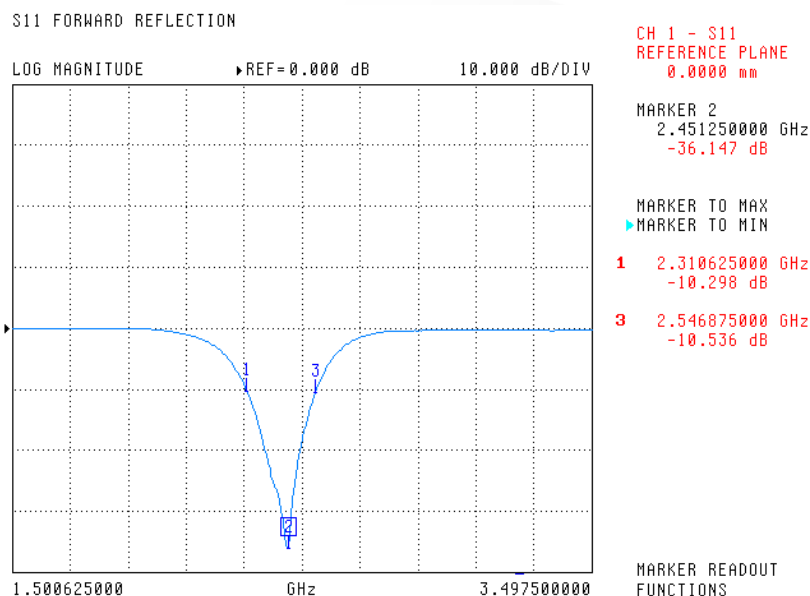
Anritsu 37369C VNA(Vector Network Analyzer)

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

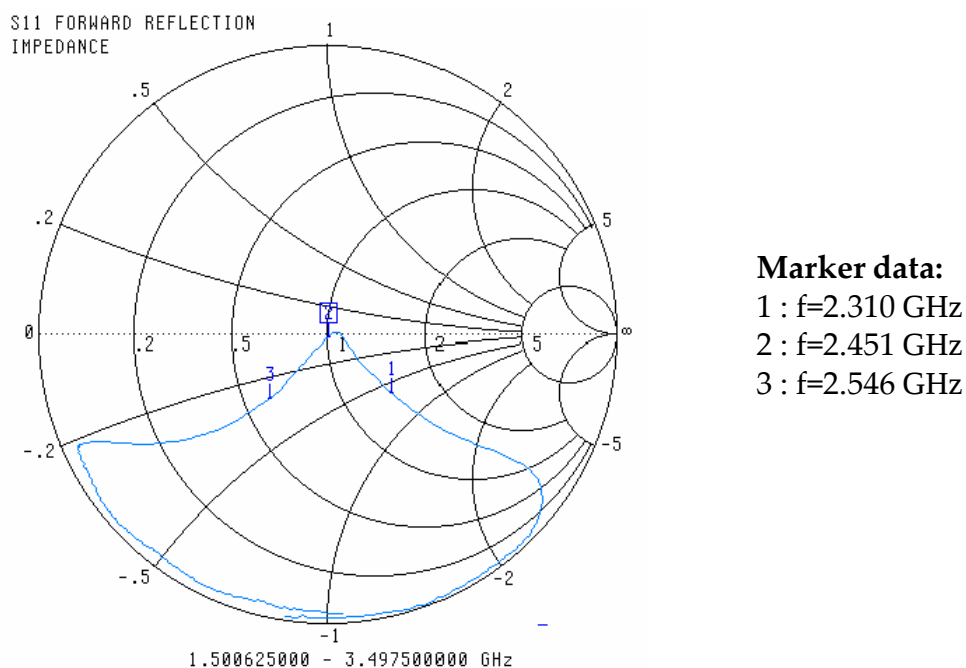
The test board dimension and it's layout is the same as Fig-1.

Typical Electrical Characteristics

Return loss

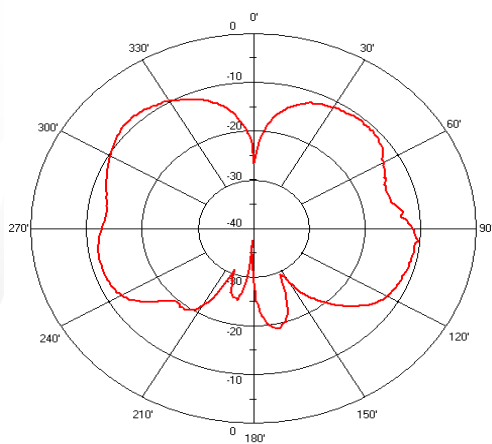


Smith Chart

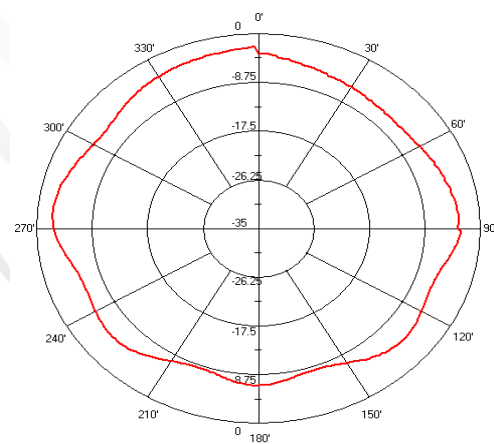


Typical Radiation Patterns

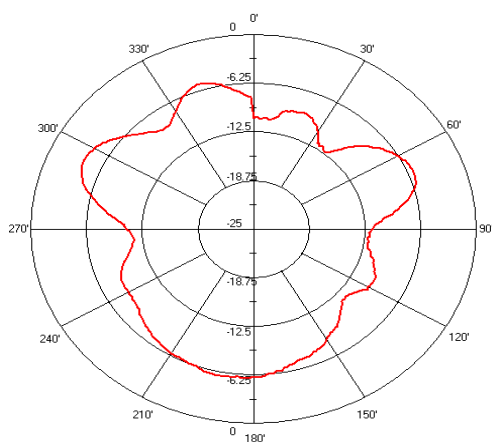
**2.45 GHz H-Plane
vertical**



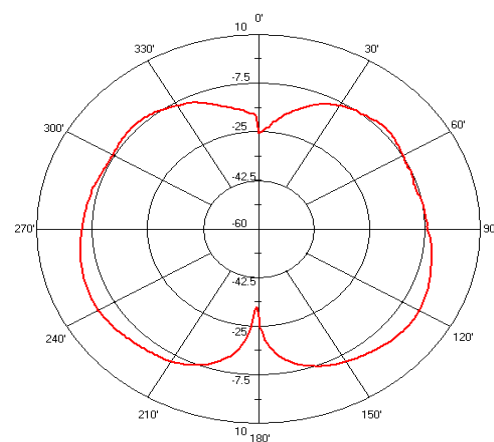
**2.45 GHz H-Plane
horizontal**



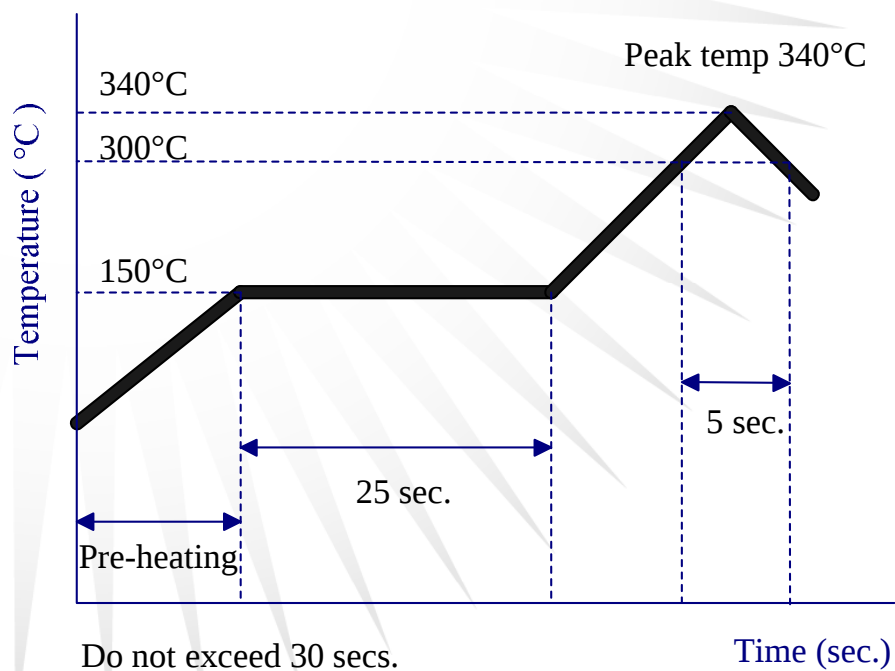
**2.45 GHz E-Plane
vertical**



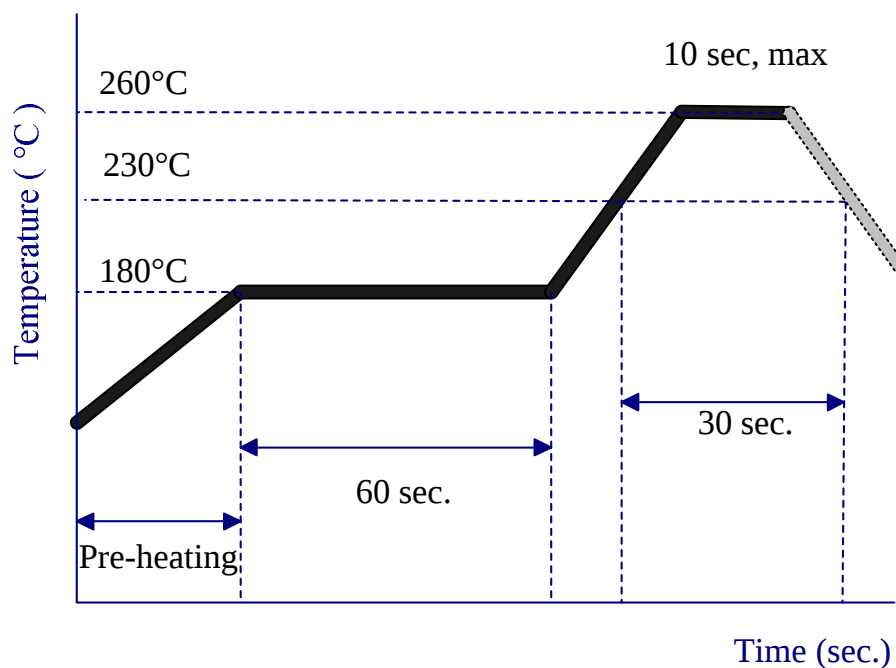
**2.45 GHz E-Plane
horizontal**



Typical Soldering Profile for Lead-free Process

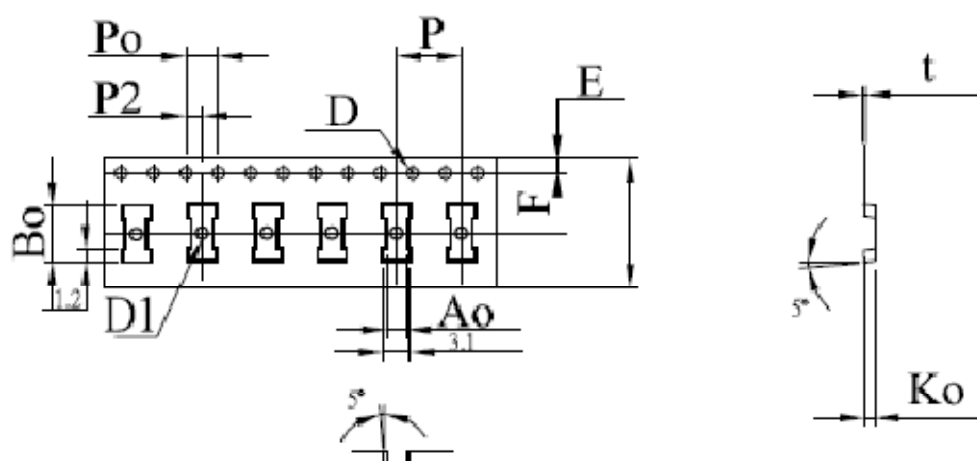


Reflow Soldering



Packing

Blister Tape Specifications

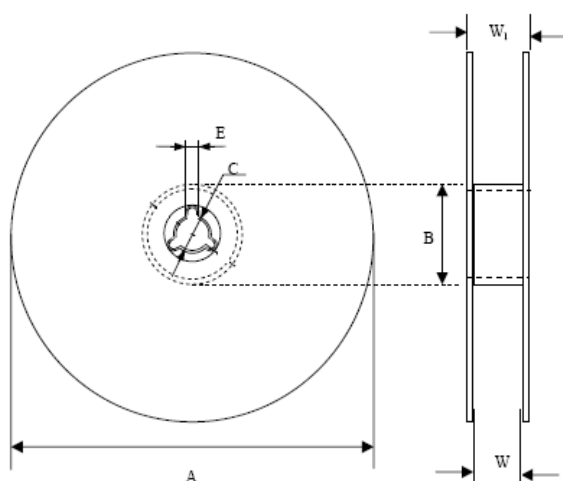


Symbol	Dimension	Tolerance	Unit
W	16.00	± 0.10	mm
E	1.75	± 0.10	mm
F	7.50	± 0.10	mm
D	1.50	+ 0.10 - 0.00	mm
D_1	1.50	+ 0.25 - 0.00	mm
P_0	4.00	± 0.10	mm
P	8.00	± 0.10	mm
P_2	2.00	± 0.10	mm
A_0	2.30	± 0.10	mm
B_0	6.60	± 0.10	mm
K_0	1.30	± 0.10	mm
t	0.30	± 0.05	mm

Gain Table

Frequency	Gain (dBi)
2400MHz	0.40
2410MHz	0.42
2420MHz	0.44
2430MHz	0.46
2440MHz	0.47
2450MHz	0.50
2460MHz	0.50
2470MHz	0.46
2480MHz	0.45

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±0.2	62±0.5	2.2±0.5	16±0.5	20±0.2