

AN2051

Multilayer Chip Antenna for 2.4GHz Wireless Communication

AN2051 Multilayer Chip Antenna

◆ Features

- Miniaturized size 5.1(L)X2.0(W)X1.2(H)
- Light weight and low profile
- Omni-directional in azimuth

◆ Applications

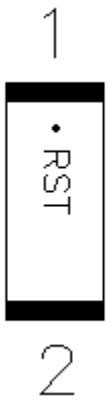
- 2.4GHz wireless communications
- Modules
- Bluetooth
- 802.11b
- Other 2.4GHz Wireless Application



Specifications

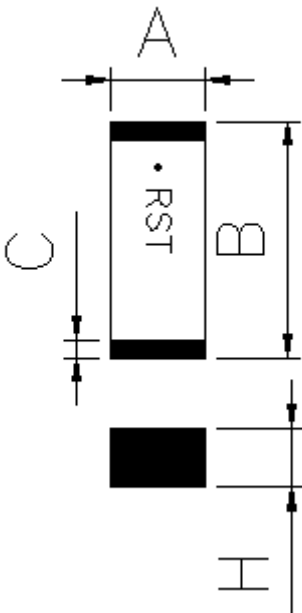
Center frequency	2.45GHz
Peak gain	0.5dBi
Operation temperature	-40 ~ +85 °C
Storage temperature	-40 ~ +85 °C
VSWR	2.0 (Max)
Input Impedance	50 Ohm
Power handling	3W (Max)
Bandwidth	110MHz
Azimuth beamwidth	Omni-directional
Polarization	Linear

Pin configuration



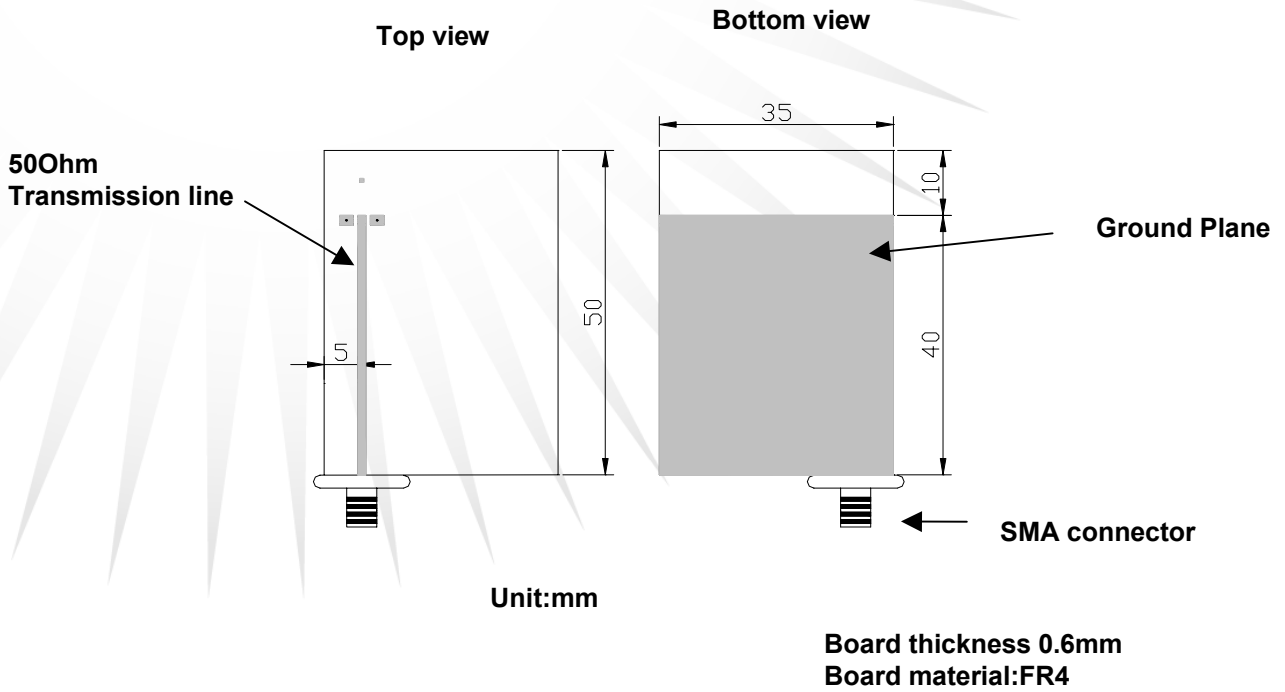
Pin No	Pin assignment
1	Feed termination
2	Solder termination

Dimensions

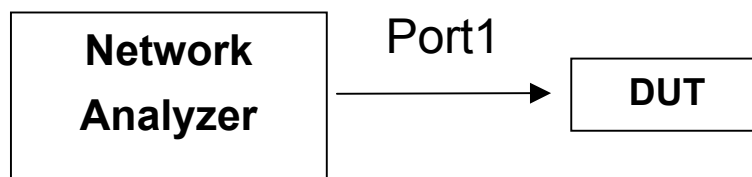


symbol	Dimensions(mm)
A	2.0±0.1
B	5.1±0.1
C	0.5±0.02
H	1.22±0.1

Recommend Test Board Pattern



Testing Block



Measurement



Testing Instrument: Anritsu 37369C
VNA(Vector Network Analyzer)

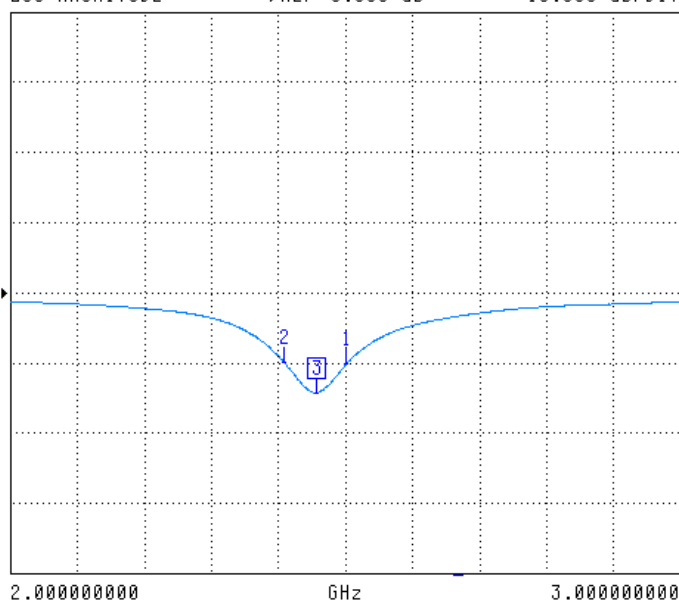
VNA calibrate with 1 path reflection only calibration sequence on test board feed point. The test board layout as recommend dimension.

Measured Antenna patterns

Return loss

S22 REVERSE REFLECTION

LOG MAGNITUDE REF=0.000 dB 10.000 dB/DIV



CH 4 - S22
REFERENCE PLANE
0.000 mm

MARKER 3
2.456250000 GHz
-14.349 dB

MARKER TO MAX
▶ MARKER TO MIN

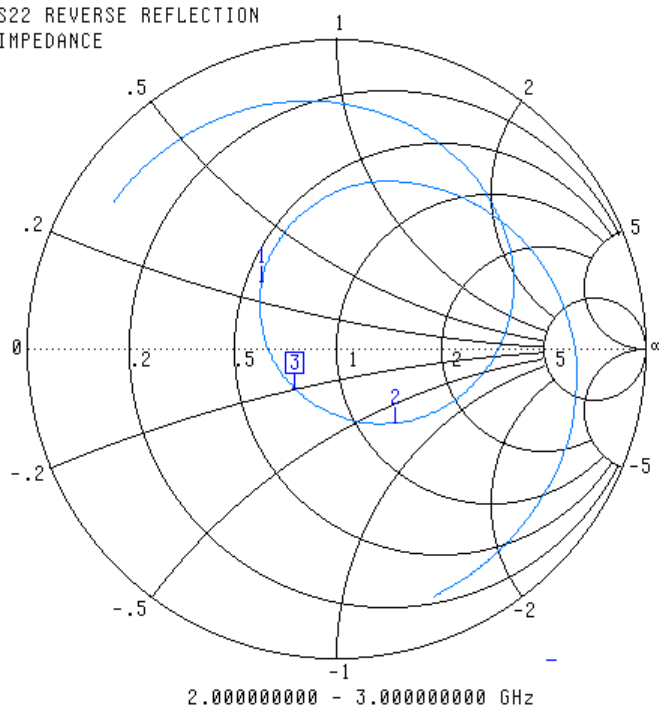
1 2.502500000 GHz
-10.174 dB

2 2.410000000 GHz
-9.989 dB

MARKER READOUT
FUNCTIONS

Smith Chart

S22 REVERSE REFLECTION
IMPEDANCE



CH 4 - S22
REFERENCE PLANE
0.0000 mm

MARKER 3
2.453750000 GHz
37.334 Ω
-10.223 $j\Omega$

MARKER TO MAX
▶ MARKER TO MIN

1 2.502500000 GHz
28.577 Ω
13.391 $j\Omega$
2 2.407500000 GHz
63.736 Ω
-34.309 $j\Omega$

MARKER READOUT
FUNCTIONS

2.45 GHz H-Plane

2.45 GHz E-Plane

