

# DATA SHEET

WIRELESS COMPONENTS  
FR4 Chip Antenna  
ANT1204F007R0870A  
UHF (870MHz)  
1204 Series



*Preliminary*



FEATURES

- Compact size
- Omni-directional Radiation
- Tape & reel automatic mounting
- Reflow process compatible
- RoHS compliant

APPLICATIONS

- Smart meter
- Industrial remote control

ORDERING INFORMATION

All part numbers are identified by the series, packing type, material, size, antenna type, working frequency and packing quantity.

**PART NUMBER**

**ANT I204 F 007 R 0870 A**  
(1) (2) (3) (4) (5) (6)

**(1) PRODUCT**

ANT = Antenna

**(2) SIZE**

I204=12 × 4 mm

**(3) ANTENNA TYPE**

L, F, A=Chip antenna

**(4) SERIAL NO.**

007

**(5) PACKING STYLE**

R = Tape and Reel

**(6) WORKING FREQUENCY**

0870 = UHF 870MHz

**PHYCOMP CTC**

CAN4311059070871K

**I2NC**

431105907087

**SPECIFICATION**

Table I

| DESCRIPTION                   | VALUE                                       |
|-------------------------------|---------------------------------------------|
| Centre Frequency              | 870MHz                                      |
| Bandwidth                     | 30 MHz (Typ.)                               |
| Return Loss                   | 10 dB min                                   |
| Polarization                  | Linear                                      |
| Azimuth Beamwidth             | Omni-directional                            |
| Peak Gain                     | 1.67 dBi (Typ.)                             |
| Impedance                     | 50Ω                                         |
| Operating Temperature         | - 40~85 °C                                  |
| Maximum Power                 | 1 W                                         |
| Termination                   | Cu / Au (Environmentally-Friendly Leadless) |
| Resistance to Soldering Heats | 260°C / 10 sec                              |

**NOTE**

The specification is defined on Yageo evaluation board

**DIMENSION**

S Table 2 Machinical Dimension

|        | DIMENSION  |
|--------|------------|
| L (mm) | 12.20±0.20 |
| W (mm) | 4.00±0.20  |
| T (mm) | 1.60±0.20  |

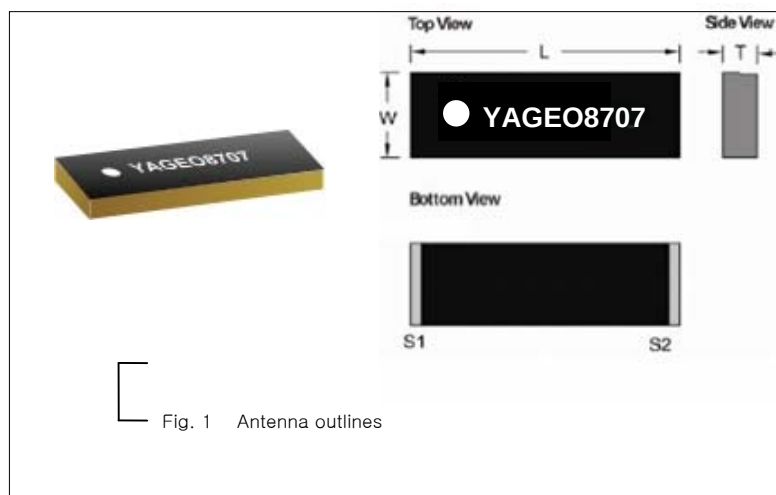
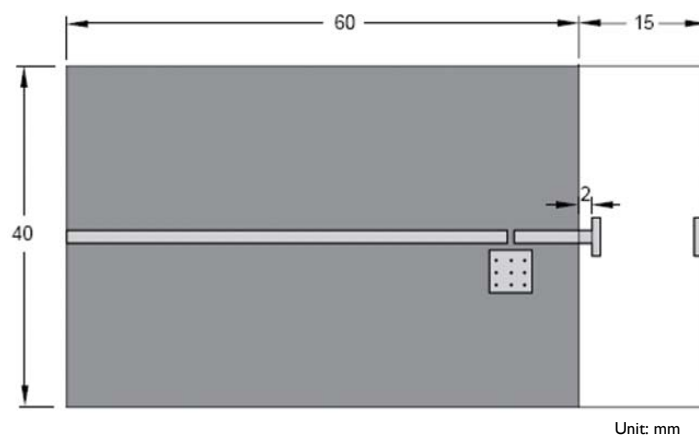
**OUTLINES**

Table 3 Termination configuration

| TERMINAL NAME | Function        |
|---------------|-----------------|
| S1            | Feeding Point   |
| S2            | Soldering Point |

# REFERENCE DESIGN OF EVALUATION BOARD



Unit: mm

Fig. 2 Outlook and dimension of evaluation board

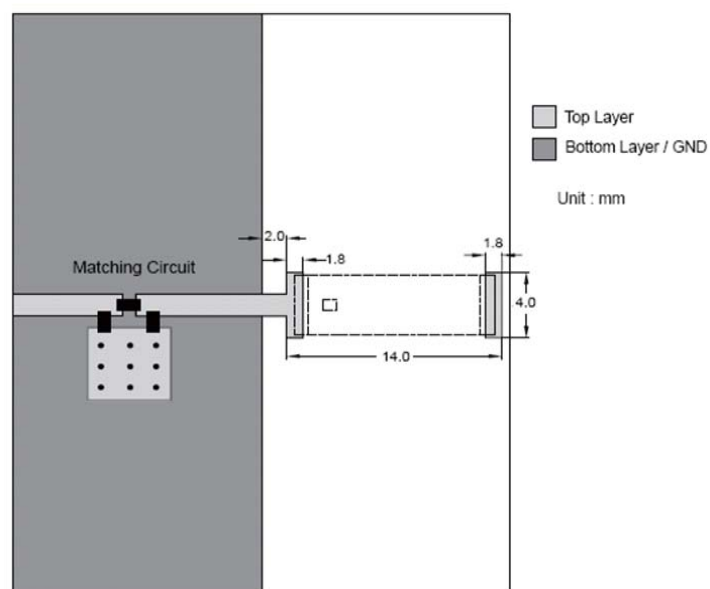


Fig. 3 Details of soldering Pad

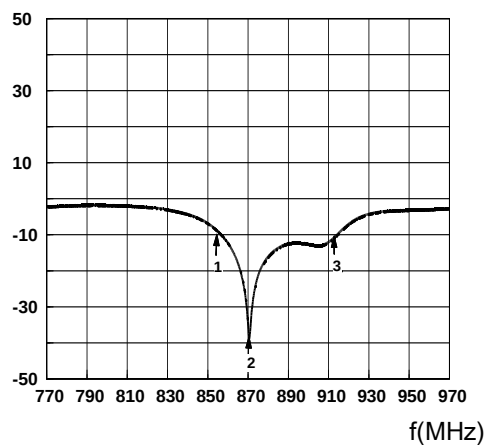
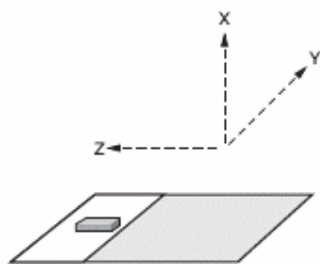
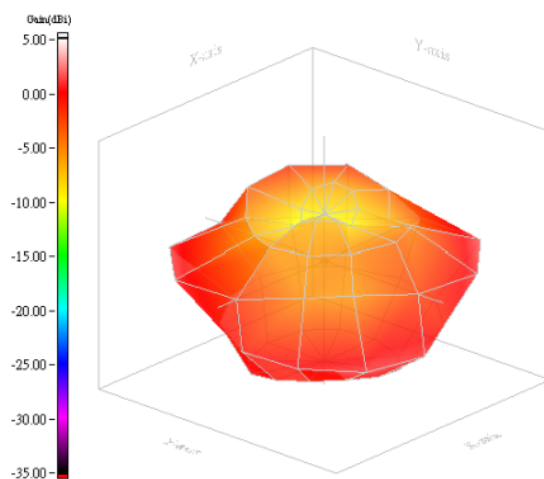
ELECTRICAL PERFORMANCEReturn loss  
(dB)

Fig. 4 Return loss



Evaluation board and XYZ direction



Max gain= 1.67dBi, at (90, 150)  
MEG (mean effective gain)= -2.69dBi  
Directivity(dB)= 3.87  
Efficiency= -2.20dB, 60.30%

Fig. 5 Radiation pattern

REVISION HISTORY

| REVISION    | DATE           | CHANGE NOTIFICATION | DESCRIPTION                                               |
|-------------|----------------|---------------------|-----------------------------------------------------------|
| Preliminary | Sept. 11, 2013 |                     | - New data sheet antenna, 870MHz application, 1204 series |