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| Document | Datasheet |
| Type | Ceramic Patch Antenna |
| Application | GPS L1 |
| Part No. | YDRA-A25-1575 |
| Revision | 0 |

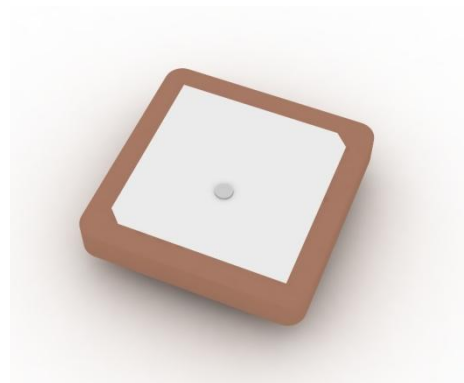
DATASHEET

Application

Navigation
DSC

Features

High efficiency, High directivity
Pin type
Pb-free Condition
RoHS Compliant



AMOTECH

Notes

The contents of this datasheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Revision History

| Rev. No | Date | Title | Contents | Page |
|---------|------------|-------|-------------------|------|
| 0 | 2008.01.14 | | First, documented | - |
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1. Specifications

1.1 Electrical Specifications

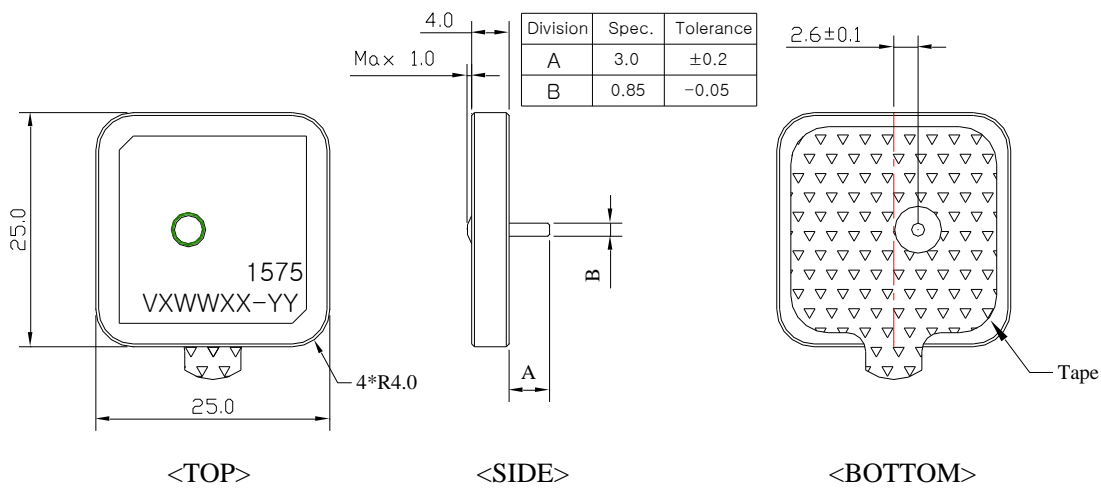
| No | Item | Spec. | Remark |
|----|----------------------------|------------|--------|
| 1 | Center Frequency(fc) [MHz] | 1575.0 ± 3 | |
| 2 | Return Loss [dB] | Min .15 | |
| 3 | Axial Ratio @ fc | Typ. 3.0 | |
| 4 | Zenith Gain@fc [dBic] | Typ. 5.0 | |
| 5 | Polarization | RHCP | |
| 6 | Impedance [Ω] | Nominal 50 | |

- ✓ fc is mid point of loop/cusp in smith chart
- ✓ Measured on 70x70mm FR4 ground plane

1.2 Mechanical Specifications

| No | Item | Spec. | Remark |
|----|------------------------|-------------------------|--------|
| 1 | Dimensions (L x W x H) | 25x25x4 mm ³ | |
| 2 | Unit Weight | Typ. 9g | |
| 3 | Operating Temperature | -40 ~ +90 °C | |

1.3 Drawing and Marking

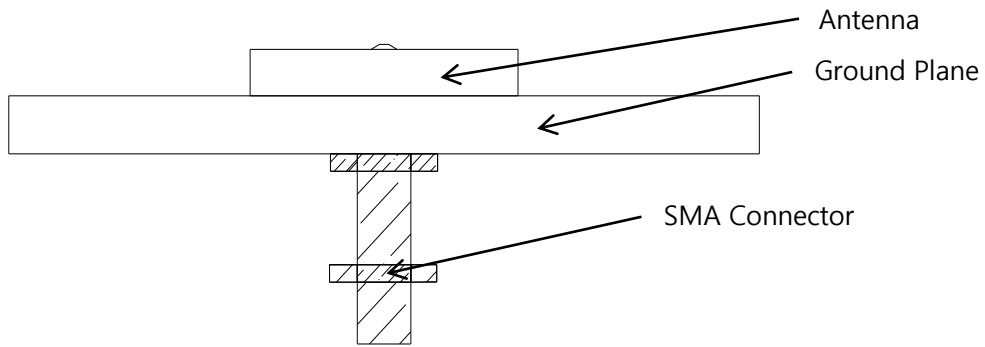


* NOTE
 1. UNIT : mm
 2. X.X : ±0.2mm
 3. All Around 0.3 Chamfer

- V : Line section
- W : Year
- XX : Month
- YY : Day
- ZZ : Serial number of daily

2. PCB Design for Test

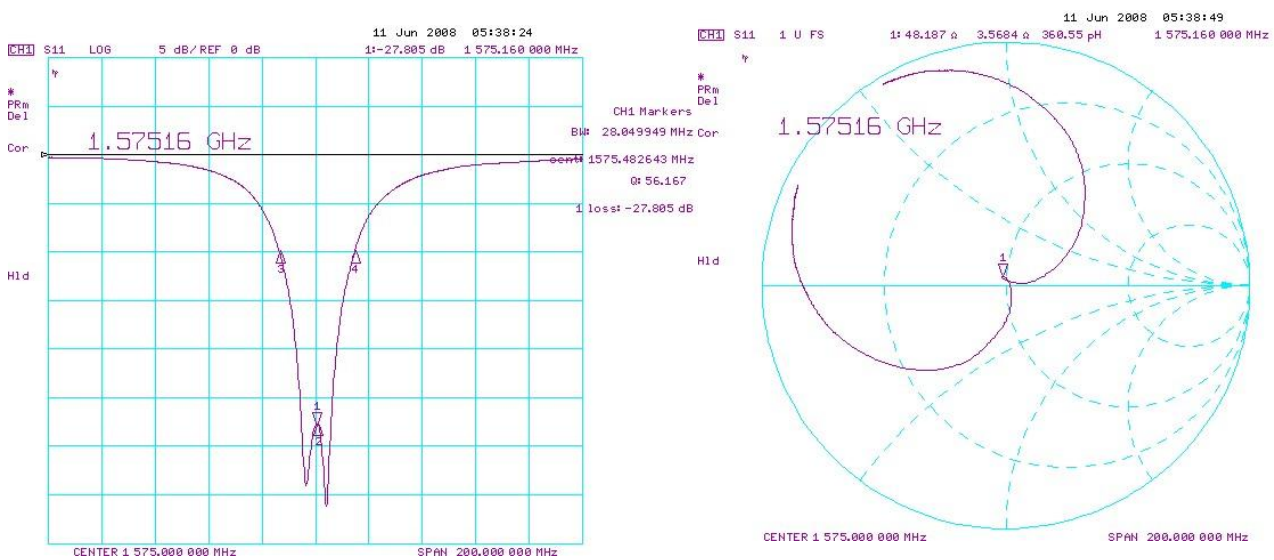
2.1 Evaluation Board Dimension



✓ Evaluation board size ~ 70x70mm²

3. Measurement Result

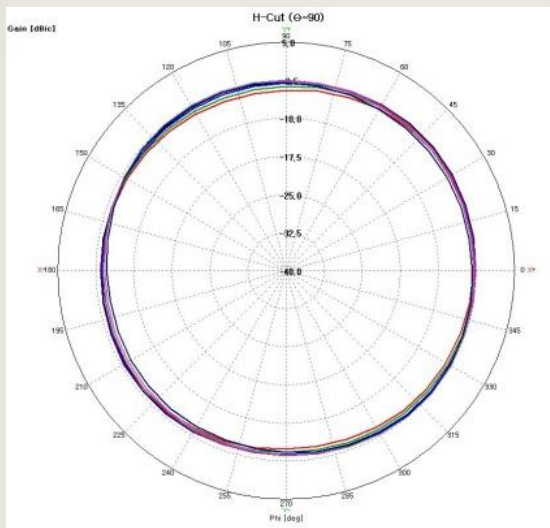
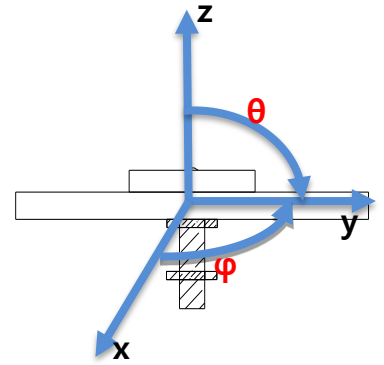
3.1 Typical Measurement Result (RL, Smith chart)



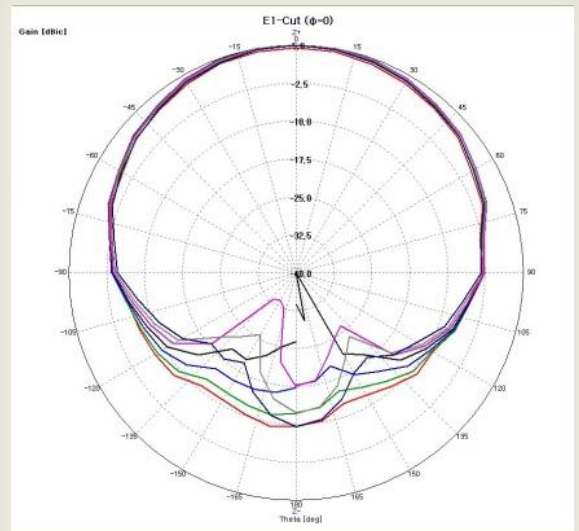
✓ The results are measured on the 70x70mm² ground plane.

3.2 Typical Measurement Result (Gain, Radiation Pattern)

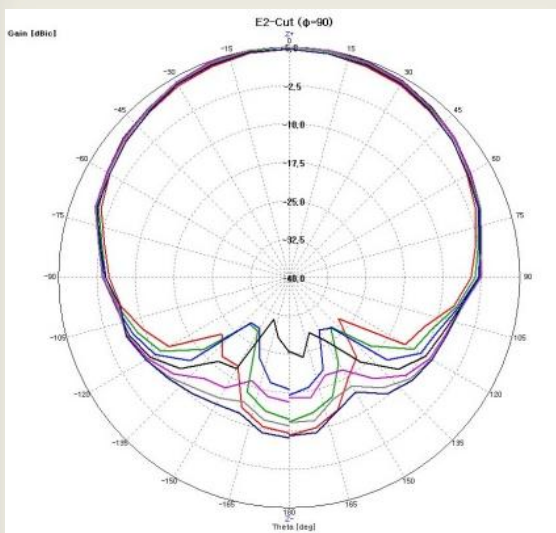
| Frequency (MHz) | Peak Gain (dBic) | AR (dB) |
|-----------------|------------------|---------|
| 1572.0 | 5.4 | 3.0 |
| 1575.0 | 5.5 | 0.9 |
| 1578.0 | 5.5 | 2.7 |



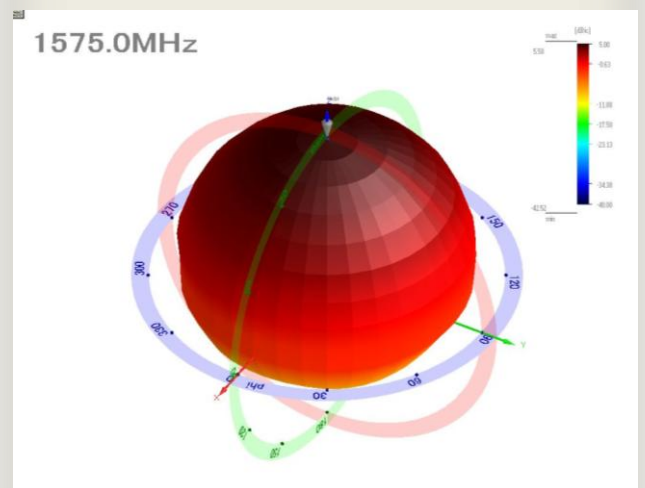
[Theta 90°]



[Phi 0°]



[Phi 90°]



[3D Radiation Pattern]

4. Reliability

| No | Item | Test condition | Requirement |
|----|--------------------------------|--|--|
| 1 | Drop Test | 1. Place antenna on set 2. 1.5m height 3. Drop 5 times | 1. No Visible defect 2. S11 satisfy |
| 2 | Vibration Test | 1. 5-55-5Hz, 1 Octave/min, Amp.=1.5mm, acceleration=2g, Crossover Freq.=18Hz, Hold time = 2H.R | 1. No Visible defect 2. S11 satisfy |
| 3 | Humidity | 1. 60°C, 95%RH, 96Hr | 1. No Visible defect 2. S11 satisfy |
| 4 | Thermal Shock | 1. +80°C(30min)→5min →-40°C (30min) 2. 10 cycle | 1. No Visible defect 2. S11 satisfy |
| 5 | High Temperature Resistance | 1. +90°C, 96Hr | 1. No Visible defect 2. S11 satisfy |
| 6 | Low Temperature Resistance | 1. -40°C, 96Hr | 1. No Visible defect 2. S11 satisfy |
| 7 | Adhesion Strength of Soldering | 1. Used of pull push gauge. | 1. Spec(min. 5kgf) |

※ The sample must satisfy Requirement after 24 hours of test

※ Be base on IEC Climatic category (IEC68-1) -40°C / +90°C / 56h

5. Soldering

- Wettability to IEC 68-2-58 :≥75%(After Aging)
- Manual Soldering(By Iron) – Pb free
- Soldering Temperature : 300°C ± 5°C, 5sec max. (Solder : Sn/Ag/Cu:96.5/3.0/0.5)
- Must comply with above soldering condition to prevent from degradation of antenna performance.

6. Packaging

6.1 Packaging Quantity

| Item | Quantity | Dimension |
|-----------|-----------------------|------------------------------------|
| Tray | 50 ea | 334 * 174 (mm ³) |
| Inner Box | 500 ea (10 Tray) | 370 * 195 * 130 (mm ³) |
| Outer Box | 1500 ea (3 Inner Box) | 390 * 620 * 150 (mm ³) |