

# APPROVAL SHEET

MULTILAYER CERAMIC ANTENNA

**RFANT Pb free Series – RoHS Compliance**

2.4 GHz ISM Band Working Frequency

**P/N: RFANT5220110A0T**

**Customer: Panasonic Taiwan Co., Ltd.**

\*Contents in this sheet are subject to change without prior notice.

## FEATURES

- Surface Mounted Devices with a small dimension of 5.2 x 2.0 x 1.1 mm<sup>3</sup> meet future miniaturization trend.
- Embedded and LTCC (Low Temperature Co-fired Ceramic) technology is able to future integrate with system design as well as beautifying the housing of final product.
- High Stability in Temperature / Humidity Change

## APPLICATIONS

- Bluetooth
- Wireless LAN
- HornRF
- ISM band 2.4GHz wireless applications

## DESCRIPTION

Walsin Technology Corporation develops a new ceramic embedded antenna specified for 2.4 GHz ISM Band application, as shown in below "CONSTRUCTION". Both of Wireless LAN IEEE 802.11b and Bluetooth™ typically located on this unlicensed frequency band which range covers from 2.4GHz to 2.4835GHz. To fulfil the friendly usage for antenna, this antenna has been designed to a typical 150MHz bandwidth through Walsin's advanced LTCC (Low Temperature Co-fired Ceramic) technology and superior product design via 3D EM Simulation Skill.

This antenna has a rectangular ceramic body with a tiny dimension of 5.2x 2.0 x 1.1 mm<sup>3</sup> meet the future SMT automation and miniaturization requirements on modern portable devices.

## CONSTRUCTION

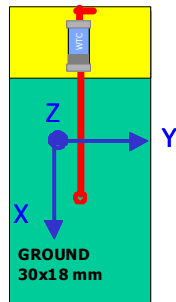
**SOLDER LAND PATTERN DESIGN****ELECTRICAL CHARACTERISTICS**

| <b>RFANT5220110A0T</b>  | <b>Specification</b>  |
|-------------------------|-----------------------|
| Working Frequency Range | 2.4 GHz ~ 2.5GHz      |
| Gain                    | 2 dBi (Typical)       |
| VSWR                    | 2 max.                |
| Polarization            | Linear                |
| Azimuth Bandwidth       | Omni-directional      |
| Impedance               | 50Ω                   |
| Rated Power (max.)      | 3 Watts               |
| Maximum Input Power     | 5 Watts for 5 minutes |
| Operation Temperature   | -40°C ~ +85°C         |

**Remark: The specification is defined based on the test board dimension as in below**

**RADIATION PATTERN**

Radiation Pattern and Gain were dependent on measurement board design. The specification of RFANT5220110A0T antenna was measured based on the PCB size and installation position as shown in the below figure Test Board



|  | Vertical  | Horizontal  |
|--|---|---|
| <b>Y - Z Plane</b><br><br>Average Gain = -0.82 dBi | <p>Peak Gain = 1.69 dBi<br/>Average Gain = -3.22 dBi</p>  | <p>Peak Gain = -5.42 dBi<br/>Average Gain = -8.98 dBi</p> |
| <b>X - Z Plane</b><br><br>Average Gain = -0.91 dBi | <p>Peak Gain = -5.97 dBi<br/>Average Gain = -3.24 dBi</p> | <p>Peak Gain = 2.66 dBi<br/>Average Gain = -8.61 dBi</p>  |
| <b>X - Y Plane</b><br><br>Average Gain = -0.68 dBi | <p>Peak Gain = -5.97 dBi<br/>Average Gain = -3.12 dBi</p> | <p>Peak Gain = 2.59 dBi<br/>Average Gain = -9.24 dBi</p>  |