WiFi + GPS Multiband Ceramic Chip Antenna

ACAG0301-15752450-T

FEATURES
- Made using LTCC (low temperature co-fired ceramic) technology
- Gain of 1.21dBi | 3.18dBi
- 1575MHz and 2450MHz frequency bands
- Small form factor 3.2 x 1.6 x 1.2mm
- Omni-directional

APPLICATIONS
- IoT and wearable
- GPS devices
- Wifi
- Bluetooth
- ISM applications

ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>1575 MHz</td>
</tr>
<tr>
<td></td>
<td>2450 MHz</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>20 MHz typ (1565~1585 MHz)</td>
</tr>
<tr>
<td></td>
<td>100 MHz (2400~2500 MHz)</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>1.21 dBi</td>
</tr>
<tr>
<td></td>
<td>3.18 dBi</td>
</tr>
<tr>
<td>Return Loss</td>
<td>≥10 dB</td>
</tr>
<tr>
<td>Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

MECHANICAL DIMENSION (mm)

<table>
<thead>
<tr>
<th>Number</th>
<th>Terminal Name</th>
<th>Number</th>
<th>Terminal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>INPUT-GPS</td>
<td>①</td>
<td>GND</td>
</tr>
<tr>
<td>②</td>
<td>INPUT-2.4GHz</td>
<td>②</td>
<td>GND</td>
</tr>
</tbody>
</table>

Symbols: L, W, T, A, B, C
Dimensions: 3.2±.02, 1.6±.02, 1.2±.15, 0.2±.15, 0.95±.15, 0.47±.15

REVISED: 04.02.2019
MECHANICAL DIMENSIONS (mm)

Layout Dimension

EVALUATION BOARD AND MATCHING CIRCUITS

Unit: mm

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RoHS/RoHS II Compliant

Pb-Free

3.2 x 1.6 x 1.2mm

MECHANICAL DIMENSIONS (mm)

Top

Bottom

Unit: mm
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3.2 x 1.6 x 1.2mm
RoHS/RoHS II Compliant
MSL = 1

ANTENNA RESPONSE – RETURN LOSS S11

RADIATION PATTERNS

Coordinates
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RADIATION PATTERNS

GPS X-Z Plane

GPS Y-Z Plane

GPS X-Y Plane

2.45G X-Z Plane

2.45G Y-Z Plane

2.45G X-Y Plane
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3D PATTERNS

GPS

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>1565</th>
<th>1575</th>
<th>1585</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Gain (dBi)</td>
<td>-1.5</td>
<td>-1.13</td>
<td>-1.65</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>1.05</td>
<td>1.21</td>
<td>1.13</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>53</td>
<td>57</td>
<td>52</td>
</tr>
</tbody>
</table>

2.45 GHz

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>2400</th>
<th>2450</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Gain (dBi)</td>
<td>-1.42</td>
<td>-1.19</td>
<td>-1.57</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>2.87</td>
<td>3.18</td>
<td>2.96</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>66</td>
<td>73</td>
<td>67</td>
</tr>
</tbody>
</table>
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REFLOW SOLDERING STANDARD CONDITION

![Soldering Diagram](image)

PACKAGING

Reel (3000 pcs/Reel)
Size of the carton: 330 x 210 x 210 mm

Storage Temperature Range: <30 degree C, Humidity: <60%RH
MSL - 3
Oxidizable, 12 months in a vacuum sealed bag.
Once opened, please repack the unused items within 168 hours by re-seal package treatment.
CAUTIONS

1. Static voltage
   Static voltage between signal & ground may cause deterioration & destruction of the component. Please avoid static voltage.

2. Ultrasonic cleaning
   Ultrasonic vibration may cause deterioration & destruction of the component. Please avoid ultrasonic cleaning.

3. Soldering
   Only leads of the component may be soldered. Please avoid soldering to any other part of the component, such as on the patterns as this will change the performance of the antenna.