433 MHz Ceramic Chip Antenna

ACAG1204-433-T

FEATURES
- Made using LTCC (low temperature co-fired ceramic) technology
- Low frequency of 433 MHz
- VSWR ≤ 2
- Compact profile 12.0 x 4.0 x 1.6mm
- Omni-directional

APPLICATIONS
- ISM Band
- RFID
- SigFox
- LoRa
- Wireless
- Home Automation
- IoT
- Medical Devices
- Smart Meters
- Remote Technology/Monitoring
- M2M

ELECTRICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Item</th>
<th>Spec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>433 MHz</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>10 MHz typ</td>
</tr>
<tr>
<td>Return Loss</td>
<td>-6.5 dB</td>
</tr>
<tr>
<td>VSWR</td>
<td>&lt;2.0</td>
</tr>
<tr>
<td>Impedance</td>
<td>50Ω</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>-1.72 dBi</td>
</tr>
<tr>
<td>Azimuth</td>
<td>Omni-directional</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40°C ~ + 85°C</td>
</tr>
</tbody>
</table>

MECHANICAL DIMENSIONS

Antenna Dimensions

Layout Dimensions

Dimensions (mm)

ABRACON IS
ISO9001-2015
CERTIFIED

ABRACON LLC
The Power of Connecting Together

5101 Hidden Creek Ln Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sales, please visit:
www.abracon.com
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EVALUATION BOARD AND MATCHING CIRCUITS

ANTENNA RESPONSE – SMITH CHART AND RETURN LOSS S11

1 Active Ch/Trace  2 Response  3 Stimulus  4 Mag/Analysis  5 Instr Scale

1  433.00000 MHz  62.446  17.276-0°  6.3019 mS

RoHS/RoHS II Compliant
MSL = 1

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RADIATION PATTERNS

Coordinates

RADIATION PATTERNS

X-Z Plane

Y-Z Plane

X-Y Plane
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3D PATTERNS

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>428</th>
<th>433</th>
<th>438</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg. Gain (dBi)</td>
<td>-5.55</td>
<td>-4.84</td>
<td>-6.37</td>
</tr>
<tr>
<td>Peak Gain (dBi)</td>
<td>-1.85</td>
<td>-1.72</td>
<td>-1.93</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>33</td>
<td>35</td>
<td>33</td>
</tr>
</tbody>
</table>

REFLOW SOLDERING STANDARD CONDITION

![Reflow Soldering Chart]

- Temperature: 250 °C ± 10 °C
- Time: 60-120 sec
- Peak: 265 °C
- 30-40 sec

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**PACKAGING**

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Quantity/Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inner Box</td>
<td>3000 pcs/reel</td>
</tr>
<tr>
<td>Size of the carton</td>
<td>345 x 250 x 360 mm</td>
</tr>
</tbody>
</table>

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**Storage Temperature Range**: <30 degree C, **Humidity**: <60%RH

**MSL**: 1

Oxidizable, 12 months in a vacuum sealed bag.

Once opened, please repack the unused items within 168 hours by re-seal package treatment.

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**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.