Description: Bluetooth, WiFi Antenna

Series: The Blue Dot

PART NUMBER: W3092

Features:

• Chip Antenna
• Frequency: 2400MHz ~ 2483MHz
• Low profile
  2.0mm(Length) x 1.2mm(Width) x 0.55mm(Thickness)

Applications:

• WLAN
• 802.11b/g
• Bluetooth
• Zigbee, ISM 2.4GHz

All dimensions are in mm / inches
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## ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2400-2483 MHz</td>
</tr>
<tr>
<td>Nominal Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>VSWR</td>
<td>3 max</td>
</tr>
<tr>
<td>Gain (Typ.)</td>
<td>0.89 dBi</td>
</tr>
<tr>
<td>Efficiency (Typ.)</td>
<td>50 %</td>
</tr>
<tr>
<td>Polarization</td>
<td>Linear</td>
</tr>
</tbody>
</table>
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### MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>0.005 g</td>
</tr>
<tr>
<td>Size</td>
<td>2.0x1.2x0.55 mm</td>
</tr>
</tbody>
</table>

### ENVIRONMENTAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating temperature</td>
<td>-40/+105 ° C</td>
</tr>
<tr>
<td>High temperature resistance</td>
<td>150 ° C, 1000 hours</td>
</tr>
<tr>
<td>Low temperature resistance</td>
<td>-40 ° C, 1000 hours</td>
</tr>
<tr>
<td>Humidity</td>
<td>85%R.H. 85±5 ° C, 1000 cycles</td>
</tr>
<tr>
<td>Soldering heat resistance</td>
<td>260 ° C 10s</td>
</tr>
<tr>
<td>Thermal shock</td>
<td>-40/+105 ° C</td>
</tr>
<tr>
<td>Storage condition</td>
<td>At warehouse 0-30 ° C, &lt;60%R.H., should be used &lt; 1 year</td>
</tr>
<tr>
<td></td>
<td>On board -40 ~85 ° C, &lt;85%R.H</td>
</tr>
</tbody>
</table>
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MECHANICAL DRAWING

Pad for SMT process
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OTHER SPECIFICATIONS

Recommended PCB layout (Unit:mm)

PCB size (L X W X T): 110 X 55 X 1mm
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OTHER SPECIFICATIONS

PCB top side layout

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**OTHER SPECIFICATIONS**

PCB bottom side layout

*Clearance 8mm × 2.7mm: All metallization should be removed from all PCB layers.

**Recommended matching circuit**
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OTHER SPECIFICATIONS

Recommended reflow soldering

![Graph of temperature profiles](image)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Time</th>
<th>1st rising temperature</th>
<th>Preheating to 200°C</th>
<th>140°C to 160°C</th>
<th>30s to 60s</th>
<th>60s to 120s</th>
<th>20s to 40s</th>
<th>50s~60s</th>
<th>40s~50s</th>
<th>30s~40s</th>
<th>20s~40s</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1st rising temperature</td>
<td>The normal to Preheating temperature</td>
<td>30s to 60s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Preheating</td>
<td>140°C to 160°C</td>
<td>60s to 120s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>2nd rising temperature</td>
<td>Preheating to 200°C</td>
<td>20s to 40s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Main heating</td>
<td>if 220°C</td>
<td>50s~60s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>if 230°C</td>
<td>40s~50s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>if 240°C</td>
<td>30s~40s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>if 250°C</td>
<td>20s~40s</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>if 260°C</td>
<td>20s~40s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Regular cooling</td>
<td>200°C to 100°C</td>
<td>1°C/s ~ 4°C/s</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

*reference: J-STD-020C

(1) Soldering gun procedure
Note the follows, in case of using solder gun for replacement.
(a) The tip temperature must be less than 350°C for the period within 3 seconds by using soldering gun under 30 W.
(b) The soldering gun tip shall not touch this product directly.

(2) Soldering volume
Note that excess of soldering volume will easily get crack the body of this product.
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CHARTS

Efficiency vs Frequency measured with demo board

Efficiency vs Frequency measured with demo board

Frequency, MHz

Efficiency, %

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**Peak Gain**

Peak Gain vs Frequency measured with demo board

- **Graph:**
  - Frequency, MHz:
    - 2380
    - 2400
    - 2420
    - 2440
    - 2460
    - 2480
    - 2500
    - 2520
  - Peak Gain, dBi:
    - -1
    - -0.5
    - 0
    - 0.5
    - 1
    - 1.5
    - 2

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CHARTS

Radiation pattern

XY Plane

2400MHz
Avg (dBi) = -4.07
Peak (dBi) = -2.05
Avg -3 (deg) = 285

2450MHz
Avg (dBi) = -3.89
Peak (dBi) = -1.39
Avg -3 (deg) = 265

2480MHz
Avg (dBi) = -3.32
Peak (dBi) = -1.32
Avg -3 (deg) = 265

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Radiation pattern

ZX Plane

Power (dBm)

Theta Angle (°)

2400MHz
Avg (dBi) = -4.38
Peak (dBi) = 1.16
Avg -3 (deg) = 110

2450MHz
Avg (dBi) = -4.99
Peak (dBi) = -0.27
Avg -3 (deg) = 165

2480MHz
Avg (dBi) = -4.66
Peak (dBi) = 0.27
Avg -3 (deg) = 140
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Radiation pattern

YZ Plane

2400MHz
Avg (dBi) = -5.51
Peak (dBi) = 1.17
Avg -3 (deg) = 55

2450MHz
Avg (dBi) = -5.79
Peak (dBi) = 1.17
Avg -3 (deg) = 40

2480MHz
Avg (dBi) = -5.37
Peak (dBi) = 0.76
Avg -3 (deg) = 60
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### PACKAGING

**Taping Package and Label Marking:** (unit: mm)

1. **Quantity/Reel:** 5000pcs/Reel
2. **Carrier tape dimensions**

   - **Type:** ACA2012
   - **Dimensions:**
     - A: 8.00±0.30
     - B: 3.50±0.05
     - C: 1.75±0.10
     - D: 2.00±0.05
     - E: 4.00±0.10
     - F: 1.50±0.10
     - L: 2.30±0.10
     - W: 1.55±0.10

3. **Taping reel dimensions**