Description: 2.4GHz SMT PIFA Antenna

PART NUMBER: W3613

Features:
- Frequency: 2.4-2.5GHz
- Gain: 4dBi
- Size: 14.2 x 13.3 x 3.2 mm
- SMT compatible
- Packing: Tape&Reel
- RoHS compliant

Applications:
- WiFi, ISM 2.4-2.5GHz
- Tablets, Notebooks
- IoT and M2M devices
- Portable Electronics
- Security, Transportation

All dimensions are in mm / inches

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  USA
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  99 Huo Ju Road/#29 Bldg,4th Phase
  Suzhou New District
  Jiangsu Province, Suzhou 215009 PR China
  Tel: 86 512 6807 9998
### Series: Embedded Antenna

**Description:** 2.4GHz SMT PIFA Antenna

**PART NUMBER:** W3613

#### ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2.4-2.5GHz</td>
</tr>
<tr>
<td>Nominal Impedance</td>
<td>50Ω</td>
</tr>
<tr>
<td>VSWR</td>
<td>2:1</td>
</tr>
<tr>
<td>Peak Gain</td>
<td>4dBi +/- 1 dB</td>
</tr>
<tr>
<td>Radiation Pattern</td>
<td>Omni</td>
</tr>
<tr>
<td>Polarization:</td>
<td>Linear</td>
</tr>
<tr>
<td>Power withstanding</td>
<td>5W</td>
</tr>
</tbody>
</table>
Series: Embedded Antenna

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### MECHANICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic frame</td>
<td>LCP</td>
</tr>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Weight</td>
<td>1 g</td>
</tr>
<tr>
<td>Size (LXWXT)</td>
<td>14.2(0.56)X13.3(0.52)X3.2(0.13) mm(inch)</td>
</tr>
<tr>
<td>Fixing system</td>
<td>SMT</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/+85 °C</td>
</tr>
</tbody>
</table>
Series: Embedded Antenna

Description: 2.4GHz SMT PIFA Antenna

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MECHANICAL DRAWING

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Description: 2.4GHz SMT PIFA Antenna

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Series: Embedded Antenna

OTHER SPECIFICATIONS

PCB LAYOUT:
1. PCB material, FR4, size, 80X50X0.8mm

2. Clearance area (Top)
Series: Embedded Antenna

Description: 2.4GHz SMT PIFA Antenna

PART NUMBER: W3613

OTHER SPECIFICATIONS

3. Clearance area (Bottom)

4. PCB Features
Series: Embedded Antenna

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OTHER SPECIFICATIONS

5. Antenna on test board
Series: Embedded Antenna

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OTHER SPECIFICATIONS

Recommendation for reflow soldering process

Printing stencil thickness 0.15 - 0.25 mm is recommended for the solder paste. The maximum soldering temperature should not exceed 260°C. The temperature profile recommendations for reflow soldering process is presented in the Figures 1 and 2. The reflow profile presented in figure 1 describes minimum reflow temperatures. The reflow profile presented in figure 2 describes maximum reflow temperatures, located at the center of the coverage area.

<table>
<thead>
<tr>
<th>Method of heat transfer</th>
<th>Controlled hot air convection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Average temperature gradient in preheating</td>
<td>2.5 °C/s</td>
</tr>
<tr>
<td>2 Soak time</td>
<td>2-3 minutes</td>
</tr>
<tr>
<td>3 Max temperature gradient in reflow</td>
<td>3 °C/s</td>
</tr>
<tr>
<td>4 Time above 217 °C</td>
<td>Max 30 sec</td>
</tr>
<tr>
<td>5 Peak temperature in reflow</td>
<td>230 °C for 10 seconds</td>
</tr>
<tr>
<td>6 Temperature gradient in cooling</td>
<td>Max -5 °C/s</td>
</tr>
</tbody>
</table>

Figure 1: Minimum temperature profile recommendation for reflow soldering process

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<td>2.3 minutes</td>
</tr>
<tr>
<td>3 Max temperature gradient in reflow</td>
<td>3 °C/s</td>
</tr>
<tr>
<td>4 Time above 217 °C</td>
<td>Max 60 sec</td>
</tr>
<tr>
<td>5 Time above 230 °C</td>
<td>Max 50 sec</td>
</tr>
<tr>
<td>6 Time above 250 °C</td>
<td>Max 10 sec</td>
</tr>
<tr>
<td>7 Peak temperature in reflow</td>
<td>260 °C for 5 seconds</td>
</tr>
<tr>
<td>8 Temperature gradient in cooling</td>
<td>Max -5 °C/s</td>
</tr>
</tbody>
</table>

Figure 2: Maximum temperature profile recommendation for reflow soldering process

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CHARTS

VSWR

VSWR Spec

Frequency (MHz)

0 1 2 3 4 5

0 2020 2045 2070 2095 2120 2145 2170 2195 2220 2245 2270 2295 2320 2345 2370 2395 2420 2445 2470 2495 2520 2545 2570 2595 2620 2645 2670 2695 2720 2745 2770 2795 2820 2845 2870 2895 2920 2945 2970 2995
Series: Embedded Antenna

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CHARTS

Efficiency (%)
Series: Embedded Antenna

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CHARTS

Peak Gain (dBi)

![Graph showing peak gain (dBi) vs frequency]
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CHARTS

Free Space Radiation Pattern

Elevation Plane

Horizontal Plane

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PACKAGING

Tray packing
500PCS/Tray
1000PCS/ Carton box