Multilayer Antenna (Dual Band type)
For 1574-1576MHz / 2400-2484MHz

ANT016008LCD1575MA1

1.6x0.8mm [EIA 0603]*
* Dimensions Code JIS[EIA]
RF Components

Multilayer Antenna
For 1574-1576MHz / 2400-2484MHz

ANT016008LCD1575MA1

■ SHAPES AND DIMENSIONS

[Top view] 1.60±0.10 0.40max

[Bottom view] 0.20±0.10 (0.1)

Terminal functions
1 Radiator electrode for GPS
2 Feed point
3 Feed point
4 Radiator electrode for 2.4GHz ISM
5 Feed point
6 Feed point
* Terminal 2, 3, 5 and 6: Connected in inner structure

Dimensions in mm

■ RECOMMENDED LAND PATTERN

Dimensions in mm

■ SOLDER RESIST PATTERN

Dimensions in mm

RoHS Directive Compliant Product: See the following for more details: https://product.tdk.com/info/en/environment/rohs/index.html

• All specifications are subject to change without notice.
• Before using these products, be sure to request the delivery specifications.
EVALUATION BOARD

PCB size: 120mm x 65mm x 1mm
Antenna area: 10.5 x 6 mm

Measurement condition for Radiation Pattern

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Component P/N
- Ft GPS 15pF
- Ft 2.4GHz 2.2pF
- Mt Common 1.5nH (MHQ100SP1N5B TDK)

20160926 / rf_ant016008lcd1575ma1_summary
ANT016008LCD1575MA1

**ELECTRICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Frequency Range (MHz)</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VSWR</td>
<td>1574 to 1576</td>
<td>—</td>
<td>1.50</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td>2400 to 2484</td>
<td>—</td>
<td>2.50</td>
<td>4.0</td>
</tr>
<tr>
<td>Polarization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCB size (mm)</td>
<td>120×65×1.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antenna keep-out area (mm)</td>
<td>10.5×6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristic Impedance (Ω)</td>
<td></td>
<td>50</td>
<td>(Nominal)</td>
<td></td>
</tr>
</tbody>
</table>

* This is typical antenna performance with the standard PCB.

**TEMPERATURE RANGE**

<table>
<thead>
<tr>
<th>Operating temperature (°C)</th>
<th>Storage temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>−40 to +85</td>
<td>−40 to +85</td>
</tr>
</tbody>
</table>

**FREQUENCY CHARACTERISTICS**

**GPS BAND**

![GPS Band Efficiency and VSWR Graph]

**2.4GHz ISM BAND**

![2.4GHz ISM Band Efficiency and VSWR Graph]

* Tested antenna has been soldered. Evaluation board size is 120x65x1 mm.
ANT016008LCD1575MA1

RADIATION PATTERNS

GPS BAND
RHCP

<table>
<thead>
<tr>
<th>Frequency (GHz)</th>
<th>Average (dBic)</th>
<th>Maximum (dBic)</th>
<th>Minimum (dBic)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.575</td>
<td>-6.3</td>
<td>-2.9</td>
<td>-12.2</td>
</tr>
<tr>
<td>1.575</td>
<td>-5.5</td>
<td>-3.7</td>
<td>-6.7</td>
</tr>
<tr>
<td>1.575</td>
<td>-5.3</td>
<td>-3.7</td>
<td>-6.7</td>
</tr>
</tbody>
</table>

Tested antenna has been soldered. Evaluation board size is 120x65x1 mm.
ANT016008LCD1575MA1

**RADIATION PATTERNS**

**2.4GHz BAND**

<table>
<thead>
<tr>
<th>Frequency(GHz)</th>
<th>2.400</th>
<th>2.442</th>
<th>2.485</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Horizontal polarization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average(dBi)</td>
<td>-4.9</td>
<td>-4.6</td>
<td>-4.9</td>
</tr>
<tr>
<td>Maximum(dBi)</td>
<td>-0.5</td>
<td>-0.2</td>
<td>-0.5</td>
</tr>
<tr>
<td>Minimum(dBi)</td>
<td>-32.2</td>
<td>-27.5</td>
<td>-32.8</td>
</tr>
<tr>
<td><strong>Vertical polarization</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average(dBi)</td>
<td>-16.2</td>
<td>-16.4</td>
<td>-16.7</td>
</tr>
<tr>
<td>Maximum(dBi)</td>
<td>-11.3</td>
<td>-11.0</td>
<td>-11.7</td>
</tr>
<tr>
<td>Minimum(dBi)</td>
<td>-44.5</td>
<td>-43.1</td>
<td>-42.8</td>
</tr>
</tbody>
</table>

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**RECOMMENDED REFLOW PROFILE**

<table>
<thead>
<tr>
<th>Soaking</th>
<th>Working</th>
<th>Soldering Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>T2</td>
<td>t1</td>
</tr>
<tr>
<td>150°C</td>
<td>180°C</td>
<td>60 to 120s</td>
</tr>
</tbody>
</table>

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PACKAGING STYLE

REEL DIMENSIONS

Dimensions in mm

TAPE DIMENSIONS

Dimensions in mm

PACKAGE QUANTITY

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.97±0.05</td>
<td>1.8±0.05</td>
<td>8.0±0.2</td>
<td>3.5±0.05</td>
<td>1.75±0.1</td>
<td>4.0±0.1</td>
<td>2.0±0.05</td>
<td>4.0±0.1</td>
<td>1.5±0.1/-0</td>
<td>0.55max</td>
<td>0.25±0.05</td>
</tr>
</tbody>
</table>

Standard package quantity (pieces/reel) 4,000

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REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

⚠️ REMINDERS

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this catalog.

(1) Aerospace/Aviation equipment
(2) Transportation equipment (cars, electric trains, ships, etc.)
(3) Medical equipment
(4) Power-generation control equipment
(5) Atomic energy-related equipment
(6) Seabed equipment
(7) Transportation control equipment
(8) Public information-processing equipment
(9) Military equipment
(10) Electric heating apparatus, burning equipment
(11) Disaster prevention/crime prevention equipment
(12) Safety equipment
(13) Other applications that are not considered general-purpose applications

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.

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