Multilayer Antenna (Dual Band type)
For 2400-2484MHz / 5150-5850MHz

ANT016008LCD2442MA1

1.6x0.8mm [EIA 0603]*
* Dimensions Code JIS[EIA]
Multilayer Antenna
For 2400-2484MHz / 5150-5850MHz

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SHAPES AND DIMENSIONS

[Top view]

Terminal functions
1 Radiator electrode for 2.4GHz ISM
2 Feed point
3 Feed point
4 Radiator electrode for 5.5GHz
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


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

PCB size: 120mm x 65mm x 1mm
Antenna area: 8 x 5 mm

Measurement condition for Radiation Pattern

Component P/N

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ft 2.4GHz</td>
<td>2.5pF</td>
</tr>
<tr>
<td>Ft 5.5GHz</td>
<td>0.3pF</td>
</tr>
<tr>
<td>Mt Common</td>
<td>1.5nH (MQ100SP1NSB:TDK)</td>
</tr>
</tbody>
</table>

PCB

Chip antenna

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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>2400 to 2484</td>
<td>—</td>
<td>3.81</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td>5150 to 5850</td>
<td>—</td>
<td>2.65</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>120x65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antenna keep-out area (mm)</td>
<td>8x5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Characteristic Impedance (Ω)</td>
<td>50 (Nominal)</td>
<td></td>
<td></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

IEEE802.11b/g/n

IEEE802.11a

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

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RADIATION PATTERNS

2.4GHz ISM BAND

![Graphs showing radiation patterns for 2.400GHz, 2.442GHz, and 2.485GHz.]

- **Horizontal polarization**
  - Frequency (GHz): 2.400, 2.442, 2.485
  - Average (dBi): -17.1, -15.7, -17.5
  - Maximum (dBi): -11.2, -9.6, -11.5
  - Minimum (dBi): -48.2, -51.8, -40.5

- **Vertical polarization**
  - Frequency (GHz): 2.400, 2.442, 2.485
  - Average (dBi): -3.2, -1.7, -3.2
  - Maximum (dBi): -0.5, 1.0, -0.2
  - Minimum (dBi): -7.9, -6.3, -8.0

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

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### RADIATION PATTERNS

#### 5.5GHz BAND

- **Horizontal polarization**
  - Frequency (GHz): 5.150, 5.500, 5.850
  - Average (dBi): -11.7, -14.0, -15.0
  - Maximum (dBi): -3.8, -5.7, -6.2
  - Minimum (dBi): -31.1, -33.0, -38.4

- **Vertical polarization**
  - Frequency (GHz): 5.150, 5.500, 5.850
  - Average (dBi): -5.6, -4.8, -4.2
  - Maximum (dBi): -2.2, -2.0, -1.6
  - Minimum (dBi): -16.0, -29.7, -16.9

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- **Tested antenna has been soldered. Evaluation board size is 120×65×1 mm.**

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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>

T: Temperature
t: Time

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**PACKAGING STYLE**

**REEL DIMENSIONS**

Dimensions in mm

**TAPE DIMENSIONS**

Material of carrier the tape: PS

Dimensions in mm

<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>

**PACKAGE QUANTITY**

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.