Multilayer Diplexer
For 2400-2500MHz / 4900-5950MHz

DPX105950DT-6112A2

1.0x0.5mm [EIA 0402]*
* Dimensions Code JIS[EIA]
Multilayer Diplexer
For 2400-2500MHz / 4900-5950MHz

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■ SHAPES AND DIMENSIONS

[Top view]

[Bottom view]

Terminal functions
1. GND
2. Common Port
3. Low-band Port
4. High-band Port

Dimensions in mm

- Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

■ RECOMMENDED LAND PATTERN

Dimensions in mm

■ EVALUATION BOARD

Material, Layer | Thickness
---|---
Top Resist | Resist
Copper Surface Pattern | 0.035mm
FR-4 | 0.10mm
Copper Inner GND | 0.016mm
FR-4 | 0.30mm
Copper Bottom GND | 0.035mm


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**ELECTRICAL CHARACTERISTICS**

**LOW-BAND**

<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>Insertion Loss (dB)</td>
<td>2400 to 2500</td>
<td>—</td>
<td>0.37</td>
<td>0.50</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>2400 to 2500</td>
<td>10</td>
<td>0.60 (-40 to +85°C)</td>
<td></td>
</tr>
<tr>
<td>Attenuation (dB)</td>
<td>4800 to 6000</td>
<td>23</td>
<td>29</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>7200 to 7500</td>
<td>23</td>
<td>29</td>
<td>—</td>
</tr>
<tr>
<td>Characteristic Impedance (Ω)</td>
<td>50 (Nominal)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- Ta: +25±5°C

**HIGH-BAND**

<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>Insertion Loss (dB)</td>
<td>4900 to 5950</td>
<td>—</td>
<td>0.56</td>
<td>0.80</td>
</tr>
<tr>
<td>Return Loss (dB)</td>
<td>4900 to 5950</td>
<td>10</td>
<td>1.00 (-40 to +85°C)</td>
<td></td>
</tr>
<tr>
<td>Attenuation (dB)</td>
<td>30 to 2400</td>
<td>25</td>
<td>29</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>2400 to 2500</td>
<td>32</td>
<td>41</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>2500 to 2690</td>
<td>23</td>
<td>29</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>9800 to 11900</td>
<td>20</td>
<td>30</td>
<td>—</td>
</tr>
<tr>
<td>Characteristic Impedance (Ω)</td>
<td>50 (Nominal)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- Ta: +25±5°C

**COMMON**

<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>Return Loss (dB)</td>
<td>2400 to 2500</td>
<td>10</td>
<td>22</td>
<td>—</td>
</tr>
<tr>
<td>Power Handling (W)</td>
<td>4900 to 5950</td>
<td>10</td>
<td>15</td>
<td>—</td>
</tr>
<tr>
<td>Characteristic Impedance (Ω)</td>
<td>50 (Nominal)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

- Ta: +25±5°C

**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>

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FREQUENCY CHARACTERISTICS

LOW-BAND
Insertion Loss

Return Loss

Attenuation

HIGH-BAND
Insertion Loss

Return Loss

Attenuation

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FREQUENCY CHARACTERISTICS

COMMON

Return Loss

Isolation

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RECOMMENDED REFLOW PROFILE

<table>
<thead>
<tr>
<th>Preheating</th>
<th>Soldering Critical zone (T3 to T4)</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp.</td>
<td>Time</td>
<td>Temp.</td>
</tr>
<tr>
<td>T1</td>
<td></td>
<td>T3</td>
</tr>
<tr>
<td>T2</td>
<td></td>
<td>t2</td>
</tr>
<tr>
<td>150°C</td>
<td>200°C</td>
<td>217°C</td>
</tr>
</tbody>
</table>

* t3 : Time within 5°C of actual peak temperature

The maximum number of reflow is 3.
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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