Multilayer Balun
For 758-821MHz

HHM1944A1

1.0x0.5mm [EIA 0402]*
* Dimensions Code JIS[EIA]
Multilayer Balun
For 758-821MHz

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**SHAPES AND DIMENSIONS**

[Top view]

- 1 Balanced port
- 2 Unbalanced port
- 3 Balanced port
- 4 GND

Dimensions in mm:
- 0.12 ± 0.07
- 0.30 ± 0.10
- 0.50 max.
- 1.00 ± 0.05
- 0.30 ± 0.10
- 0.50 ± 0.05
- 0.12 ± 0.07

[Bottom view]

Terminal functions:
1. Balanced port
2. Unbalanced port
3. Balanced port
4. GND

Dimensions in mm:
- 0.35 ± 0.10
- 0.30 ± 0.10

**RECOMMENDED LAND PATTERN**

Dimensions in mm:
- 0.70
- 0.45
- 0.30
- 0.20


• All specifications are subject to change without notice.
• Before using these products, be sure to request the delivery specifications.
# HHM1944A1

## 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>Unbalanced Port Characteristic Impedance (Ω)</td>
<td>50 (Nominal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balanced Port Characteristic Impedance (Ω)</td>
<td>100 (Nominal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Return Loss at Unbalanced Port (dB)</td>
<td>758 to 821</td>
<td>20</td>
<td>27.2</td>
<td>—</td>
</tr>
<tr>
<td>Phase Balance (deg.)</td>
<td>758 to 821</td>
<td>168</td>
<td>181</td>
<td>192</td>
</tr>
<tr>
<td>Amplitude Balance (dB)</td>
<td>758 to 821</td>
<td>–2.0</td>
<td>0.59</td>
<td>2.0</td>
</tr>
<tr>
<td>Insertion Loss (dB)</td>
<td>758 to 821</td>
<td>—</td>
<td>0.48</td>
<td>0.80</td>
</tr>
<tr>
<td>Power Handling (W)</td>
<td>758 to 821</td>
<td>—</td>
<td>—</td>
<td>0.85 (–40 to +85°C)</td>
</tr>
</tbody>
</table>

## 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**

- **INSERTION LOSS**
  - Frequency (MHz): 650, 700, 800, 900, 750, 850
  - Insertion Loss (dB): 0.0 to 3.0

- **AMPLITUDE BALANCE**
  - Frequency (MHz): 650, 700, 800, 900, 750, 850
  - Amplitude Balance (dB): -2.0 to 4.0

- **RETURN LOSS**
  - Frequency (MHz): 650, 700, 800, 900, 750, 850
  - Return Loss (dB): 0 to 40

- **PHASE BALANCE**
  - Frequency (MHz): 650, 700, 800, 900, 750, 850
  - Phase Balance (deg): 160 to 200

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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>T2</td>
<td>T3</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.

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REMINDERS FOR USING THESE PRODUCTS

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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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