MABA-009298-CT48A0

Transformer, 4:1 Flux Coupled Balun Transformer
1 to 650 MHz

Features
- Surface mount
- 4:1 Impedance ratio
- Can be used in both 50Ω and 75Ω systems
- RoHS* compliant and lead-free
- RoHS version of the MABAES0031
- Available on tape and reel.

Description
MABA-009298-CT48A0 is a 4:1 RF flux coupled step up transformer in a low cost, surface mount package. Ideally suited for high volume CATV/Broadband applications.

Ordering information

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MABA-009298-CT48A0</td>
<td>2000 piece reel</td>
</tr>
<tr>
<td>MABA-009298-CT48TB</td>
<td>Customer Test Board</td>
</tr>
</tbody>
</table>

Note: Reference Application Note M513 for reel size information.

Pin configuration

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secondary (output 2)</td>
</tr>
<tr>
<td>2</td>
<td>Centre Tap (ground)</td>
</tr>
<tr>
<td>3</td>
<td>Secondary Dot (output 1)</td>
</tr>
<tr>
<td>4</td>
<td>Primary (Input)</td>
</tr>
<tr>
<td>5</td>
<td>Primary Dot (Ground)</td>
</tr>
</tbody>
</table>

Transformer, 4:1 Flux Coupled Balun Transformer  
1 to 650 MHz

Electrical Specifications:  \( T_A = 25^\circ C, \ Z_0 = 50\Omega \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
</table>
| Insertion Loss 1  
(pin 4 - pin 3) | 1 - 10 MHz  
10 - 250 MHz  
250 - 520 MHz  
520 - 650 MHz | dB | 1.43 | 1.12 | 1.49 | 2.23 | 3.6 | 1.6 | 2.5 | 3.9 |
| Insertion Loss 2  
(pin 4 - pin 1) | 1 - 10 MHz  
10 - 250 MHz  
250 - 450 MHz  
450 - 650 MHz | dB | 1.44 | 1.14 | 1.55 | 2.43 | 3.6 | 1.6 | 2.5 | 3.9 |
| Input Return Loss | 1 - 10 MHz  
10 - 170 MHz  
170 - 320 MHz  
320 - 650 MHz | dB | 14.6 | 18.8 | 14.1 | 8.4 | — |
| Amplitude Unbalance  
(Nominal 0dB) | 1 - 300 MHz  
300 - 650 MHz | dB | 0.03 | 0.24 | ±0.2 | ±0.8 |
| Phase Unbalance  
(Nominal 180º) | 1 - 100 MHz  
100 - 400 MHz  
400 - 600 MHz  
600 - 650 MHz | — | 0.34 | 1.25 | 0.79 | 2.91 | ±2 | ±5 | ±15 | ±20 |

Absolute maximum ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max input power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC current</td>
<td>200 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40°C to +85°C</td>
</tr>
</tbody>
</table>

Case style: SM-138
Transformer, 4:1 Flux Coupled Balun Transformer
1 to 650 MHz

Typical Performance Curves: \( T_A = 25^\circ\text{C}, Z_0 = 50\Omega \)

**Insertion Loss 1:** through pin 4 to pin 3

**Insertion Loss 2:** coupled pin 4 to pin 1

**Amplitude Balance**

**Phase Balance**

**Input Return Loss**
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