Surface Mount
RF Transformer

TC4-1W+
50Ω 3 to 800 MHz

Maximum Ratings
- Operating Temperature: -40°C to 85°C
- Storage Temperature: -55°C to 100°C
- RF Power: 0.25W
- DC Current: 30mA

Permanent damage may occur if any of these limits are exceeded.

Pin Connections
- PRIMARY DOT: 6
- PRIMARY: 4
- SECONDARY DOT: 1
- SECONDARY: 3
- SECONDARY CT: 2

Outline Drawing: AT224-1
- Lead #1 identifier shall be located in the cross-hatched area shown.
- Identifier may be a molded or marked feature.

Outline Dimensions (inch/mm)
- Lead 1:
  - Width: 0.028"/0.71 mm
  - Height: 0.065"/1.66 mm
  - Length: 0.190"/4.83 mm
  - Thickness: 0.030"/0.76 mm

- Weight: 0.15 grams

Features
- Wideband: 3-800 MHz
- Good return loss
- Plastic base with leads
- Aqueous washable

Applications
- Impedance matching
- Push-pull amplifiers

Transformer Electrical Specifications

<table>
<thead>
<tr>
<th>Ω</th>
<th>FREQUENCY (MHz)</th>
<th>INSERTION LOSS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3-800</td>
<td>5-400</td>
</tr>
<tr>
<td>2</td>
<td>3-800</td>
<td>10-100</td>
</tr>
</tbody>
</table>

* Insertion Loss is referenced to mid-band loss, 0.8 dB typ.

PCB Land Pattern
- Suggested Layout: Tolerance to be within ±0.002

Outline Dimensions (inch/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>wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>.150</td>
<td>.150</td>
<td>.160</td>
<td>.060</td>
<td>.040</td>
<td>.025</td>
<td>.381</td>
<td>.381</td>
<td>4.06</td>
<td>1.27</td>
<td>1.02</td>
</tr>
</tbody>
</table>

<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>wt</th>
</tr>
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<tbody>
<tr>
<td>.028</td>
<td>.065</td>
<td>.190</td>
<td>.030</td>
<td>grams</td>
<td>0.71</td>
<td>1.66</td>
<td>4.83</td>
<td>0.76</td>
<td>0.15</td>
<td></td>
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</tbody>
</table>

Typical Performance Data

<table>
<thead>
<tr>
<th>FREQUENCY (MHz)</th>
<th>INSERTION LOSS (dB)</th>
<th>INPUT RETURN LOSS (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>1.09</td>
<td>11.58</td>
</tr>
<tr>
<td>4.00</td>
<td>0.98</td>
<td>12.35</td>
</tr>
<tr>
<td>5.00</td>
<td>0.93</td>
<td>13.11</td>
</tr>
<tr>
<td>7.50</td>
<td>0.86</td>
<td>14.21</td>
</tr>
<tr>
<td>10.00</td>
<td>0.83</td>
<td>14.49</td>
</tr>
<tr>
<td>100.00</td>
<td>0.88</td>
<td>15.77</td>
</tr>
<tr>
<td>250.00</td>
<td>0.96</td>
<td>16.17</td>
</tr>
<tr>
<td>400.00</td>
<td>1.13</td>
<td>16.72</td>
</tr>
<tr>
<td>600.00</td>
<td>1.36</td>
<td>15.59</td>
</tr>
<tr>
<td>800.00</td>
<td>2.21</td>
<td>9.07</td>
</tr>
</tbody>
</table>

Notes:
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit’s applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, “Standard Terms”); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits’ website at www.minicircuits.com/MCLStore/terms.jsp

Addition of Top hat™ feature benefits:
- Allows faster pick-and-place
- Enables visual identification marking

+RoHS Compliant

RoHS Compliance methodologies and qualifications:

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TC4-1WX+
Upgraded Version*

CASE STYLE: AT224-1A

Addition of Top hat™ feature benefits:
- Allows faster pick-and-place
- Enables visual identification marking

+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

CONFIG. A

Available Tape and Reel at no extra cost

<table>
<thead>
<tr>
<th>Size</th>
<th>Devices/Reel</th>
</tr>
</thead>
<tbody>
<tr>
<td>7&quot;</td>
<td>20, 50, 100, 200, 500</td>
</tr>
<tr>
<td>13&quot;</td>
<td>1000, 2000</td>
</tr>
</tbody>
</table>