ETC1-1-13

E-Series RF 1:1 Transmissions Line Transformer 4.5 - 3000 MHz

Features
- 1:1 Impedance
- Surface Mount
- RoHS compliant and 260° reflow compatible
- Available on Tape and Reel

Description
The ETC1-1-13TR is a 1:1 RF transmission line transformer in a low cost surface mount package. Ideally suited for high volume cellular and wireless applications.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETC1-1-13TR</td>
<td>2000 piece reel</td>
</tr>
</tbody>
</table>

Pin Configuration

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Secondary Dot</td>
</tr>
<tr>
<td>2</td>
<td>Not Connected</td>
</tr>
<tr>
<td>3</td>
<td>Secondary</td>
</tr>
<tr>
<td>4</td>
<td>Primary</td>
</tr>
<tr>
<td>5</td>
<td>Primary Dot</td>
</tr>
</tbody>
</table>

E-Series RF 1:1 Transmissions Line Transformer
4.5 - 3000 MHz

Electrical Specifications: 
Freq = 4.5 - 3000 MHz, \( T_A = 25^\circ C \), \( Z_0 = 75 \, \Omega \), \( P_{in} = 0 \, dBm \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impedance</td>
<td>—</td>
<td>( \Omega )</td>
<td>—</td>
<td>50</td>
<td>—</td>
</tr>
<tr>
<td>Impedance Ratio</td>
<td>—</td>
<td>ratio</td>
<td>—</td>
<td>1:1</td>
<td>—</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>4.5 - 1000</td>
<td>dB</td>
<td>—</td>
<td>0.32</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>1000 - 2000</td>
<td></td>
<td>—</td>
<td>—</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>2000 - 3000</td>
<td></td>
<td>—</td>
<td>—</td>
<td>3.5</td>
</tr>
<tr>
<td>Amplitude Balance</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>—</td>
<td>1.0</td>
</tr>
<tr>
<td>Phase Balance</td>
<td>—</td>
<td>deg.</td>
<td>—</td>
<td>—</td>
<td>20</td>
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</table>

Recommended Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF Input Power</td>
<td>250 mW</td>
</tr>
<tr>
<td>DC Current</td>
<td>30 mA</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55°C to +85°C</td>
</tr>
</tbody>
</table>
PCB Layout

Outline Drawing\(^1,2,3,4\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qty per reel</td>
<td>-</td>
<td>2000</td>
</tr>
<tr>
<td>Reel Size</td>
<td>mm</td>
<td>330</td>
</tr>
<tr>
<td>Tape Width</td>
<td>mm</td>
<td>12.00</td>
</tr>
<tr>
<td>Pitch</td>
<td>mm</td>
<td>8.00</td>
</tr>
<tr>
<td>Ao</td>
<td>mm</td>
<td>4.00</td>
</tr>
<tr>
<td>Bo</td>
<td>mm</td>
<td>4.00</td>
</tr>
<tr>
<td>Ko</td>
<td>mm</td>
<td>2.90</td>
</tr>
<tr>
<td>Orientation</td>
<td>-</td>
<td>F5</td>
</tr>
</tbody>
</table>

Reference Application Note ANI-019 for orientation

1. Dimensions in mm.
2. Tolerance: ±0.2 mm unless otherwise noted.
3. Model number and lot code are printed on the reel.
4. Lead plating: Ceramic.
Typical Performance Curves

Insertion Loss

Input Impedance

Phase Unbalance

Amplitude Unbalance
MACOM:
ETC1-1-13TR