# High Frequency Ceramic Solutions

## 625 - 2815MHz Wideband Balun, 1:2 Impedance Ratio, EIA 0805

**P/N 1720BL15A0100**

**Detail Specification:** 2/21/2020

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## General Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>1720BL15A0100</td>
</tr>
<tr>
<td>Frequency (MHz)</td>
<td>625 - 2815</td>
</tr>
<tr>
<td>Unbalanced Impedance</td>
<td>50 Ω</td>
</tr>
<tr>
<td>Balanced Impedance</td>
<td>100 Ω</td>
</tr>
<tr>
<td>Insertion Loss</td>
<td>1.5 dB max.</td>
</tr>
<tr>
<td>Return Loss</td>
<td>9.5 dB min.</td>
</tr>
<tr>
<td>Phase Difference</td>
<td>180 ± 10 deg.</td>
</tr>
<tr>
<td>Amplitude Difference</td>
<td>1.0 dB max.</td>
</tr>
<tr>
<td>CMRR</td>
<td>20 dB min.</td>
</tr>
<tr>
<td>Power Capacity</td>
<td>3W max. (CW)</td>
</tr>
<tr>
<td>Reel Quantity</td>
<td>4,000 pcs</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 to +105°C</td>
</tr>
<tr>
<td><strong>Recommended Storage</strong></td>
<td></td>
</tr>
<tr>
<td>Conditions of unused product on T&amp;R</td>
<td>+5 to +35°C, 18 mos. max. Humidity 45-75% RH</td>
</tr>
</tbody>
</table>

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## Part Number Explanation

<table>
<thead>
<tr>
<th>P/N Suffix</th>
<th>Packing Style</th>
<th>Termination style</th>
<th>Evaluation Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk</td>
<td>Suffix = S</td>
<td>100% Tin</td>
<td>1720BL15A0100-EB1SMA (3 female SMA connectors)</td>
</tr>
<tr>
<td>T &amp; R</td>
<td>Suffix = E</td>
<td>Suffix = None</td>
<td></td>
</tr>
</tbody>
</table>

## Mechanical Dimensions

<table>
<thead>
<tr>
<th>In</th>
<th>mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>0.079 ± 0.004</td>
</tr>
<tr>
<td>W</td>
<td>0.049 ± 0.004</td>
</tr>
<tr>
<td>T</td>
<td>0.037 ± 0.004</td>
</tr>
<tr>
<td>a</td>
<td>0.012 ± 0.004</td>
</tr>
<tr>
<td>b</td>
<td>0.008 ± 0.004</td>
</tr>
<tr>
<td>c</td>
<td>0.012 +0.004/0.008</td>
</tr>
<tr>
<td>g</td>
<td>0.014 ± 0.004</td>
</tr>
<tr>
<td>p</td>
<td>0.026 ± 0.002</td>
</tr>
</tbody>
</table>

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## Terminal Configuration

1. Unbalanced Port (IN)
2. GND or DC feed + RF GND
3. Balanced Port (OUT1)
4. Balanced Port (OUT2)
5. GND
6. NC

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You can download measured s-parameters of this component at: [https://www.johansontechnology.com/baluns](https://www.johansontechnology.com/baluns)
Mounting Considerations

Mount these devices with colored mark facing up.

* Line width should be designed to provide 50ohm impedance matching characteristics.

![Without DC Feed](image1)

![With DC Feed](image2)

- 0.25
- 0.3
- 0.25
- 0.3
- 0.35
- 0.35
- 0.65
- 0.65
- 0.5
- 0.5
- 0.8
- 0.8

RF Bypass (DC block) cap recommended value: 68pF when DC-Feed feature used

Measuring Diagram

Port 1: Unbalanced Port
Port 2 and 3: Balanced Port
IL = Sds21
RL = Sss11
Amp_balance = dB(S(2,1)/S(3,1))
Phase_balance = Phase(S(2,1)/S(3,1))

*Impedance for ports 2 and 3 = Balanced Impedance/2

**E5071B from Agilent
Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss

Amplitude and Phase Balance
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P/N Explanation and Breakdown
https://www.johansontechnology.com/ipc-pn-explained

Application Notes, Layout Files, and more
https://www.johansontechnology.com/baluns

Packaging information
https://www.johansontechnology.com/tape-reel-packaging

Soldering Information
https://www.johansontechnology.com/ipcsoldering-profile

MSL Info
https://www.johansontechnology.com/msl-rating

Recommended Storage Condition and Max Shelf Life
https://www.johansontechnology.com/recommended-storage-conditions

RoHS Compliance
https://www.johansontechnology.com/rohs-compliance

Antenna layout and tuning techniques
https://www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services
https://www.johansontechnology.com/ipc-antenna-services

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