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*ELECTRONICS*

**THE DATASHEET OF  
1850BL15B0050001E**

# High Frequency Ceramic Solutions

1850 MHz EIA 0805 1:1 RF Balun

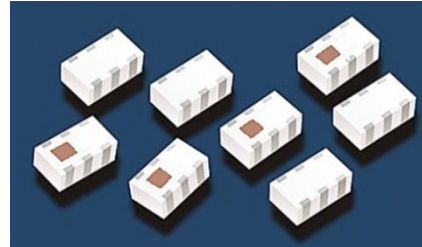
P/N 1850BL15B050

Detail Specification: 1/18/2019

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## General Specifications

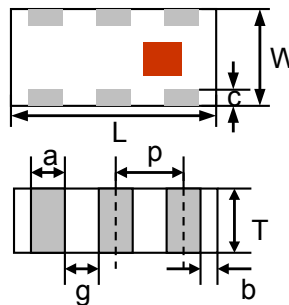
|  |                   |                                  |               |
|--|-------------------|----------------------------------|---------------|
| <b>Part Number</b>                         | 1850BL15B050      |                                  |               |
| <b>Unbalanced Impedance</b> (single ended) | 50 $\Omega$       |                                  |               |
| <b>Differential Balanced Imp.</b>          | 50 $\Omega$       |                                  |               |
| <b>Operating Frequency 1 (MHz)</b>         | 1700 ~ 2000       |                                  |               |
| <b>Insertion Loss, Oper Freq 1</b>         | 1.0 dB max.       |                                  |               |
| <b>Return Loss, Oper Freq 1</b>            | 9.5 dB min.       |                                  |               |
| <b>Operating Frequency 2 (MHz)</b>         | 1700 ~ 2300       |                                  |               |
| <b>Insertion Loss, Oper Freq 2</b>         | 1.1 dB max.       | <b>Power Capacity</b>            | 3 W max. (CW) |
| <b>Return Loss, Oper Freq 2</b>            | 9.0 dB min.       | <b>Operating Temperature</b>     | -40 to +105°C |
| <b>Phase Difference (1&amp;2)</b>          | 180 $\pm$ 10 deg. | <b>Storage Temperature Range</b> | -40 to +105°C |
| <b>Amplitude Difference (1&amp;2)</b>      | 2 dB max.         | <b>Reel Quantity</b>             | 4,000 pcs     |



You can download measured s-parameters of this component at: <http://www.johansontechnology.com/rfbaluns>

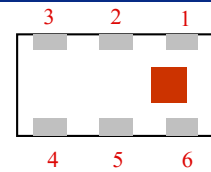
## Mechanical Dimensions

|          | In                 | mm              |
|----------|--------------------|-----------------|
| <b>L</b> | 0.079 $\pm$ 0.004  | 2.00 $\pm$ 0.10 |
| <b>W</b> | 0.049 $\pm$ 0.004  | 1.25 $\pm$ 0.10 |
| <b>T</b> | 0.033 $\pm$ 0.004  | 0.85 $\pm$ 0.10 |
| <b>a</b> | 0.012 $\pm$ 0.004  | 0.30 $\pm$ 0.10 |
| <b>b</b> | 0.008 $\pm$ 0.004  | 0.20 $\pm$ 0.10 |
| <b>c</b> | 0.012 +0.004/0.008 | 0.30 +0.1/-0.2  |
| <b>g</b> | 0.014 $\pm$ 0.004  | 0.35 $\pm$ 0.10 |
| <b>p</b> | 0.026 $\pm$ 0.002  | 0.65 $\pm$ 0.05 |

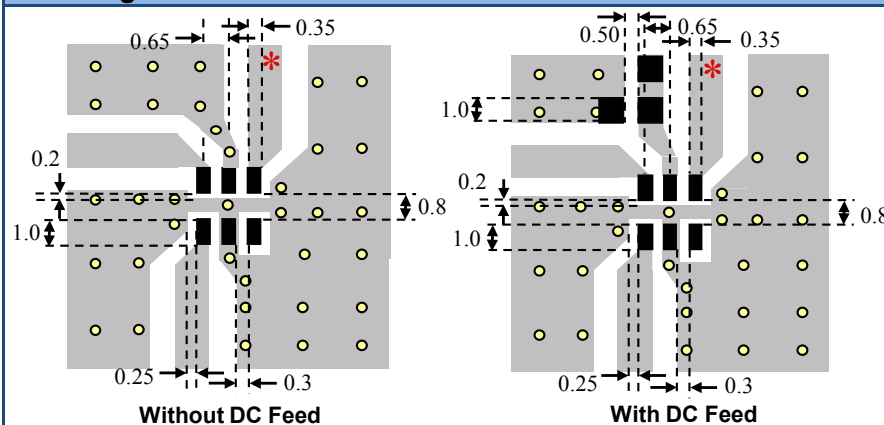


## Terminal Configuration

|          |                       |          |               |
|----------|-----------------------|----------|---------------|
| <b>1</b> | Unbalanced Port       | <b>4</b> | Balanced Port |
| <b>2</b> | GND or DC Feed+RF GND | <b>5</b> | GND           |
| <b>3</b> | Balanced Port         | <b>6</b> | NC            |



## Mounting Considerations



Mount these devices with

- Solder
- Land
- Through-hole ( $\Phi$ 0.3)

\*Line width should be designed to provide 50ohm impedance

Need our help laying this out for you? Need the layout file? Send us a message at: [www.johansontechnology.com/component/techquestion](http://www.johansontechnology.com/component/techquestion)

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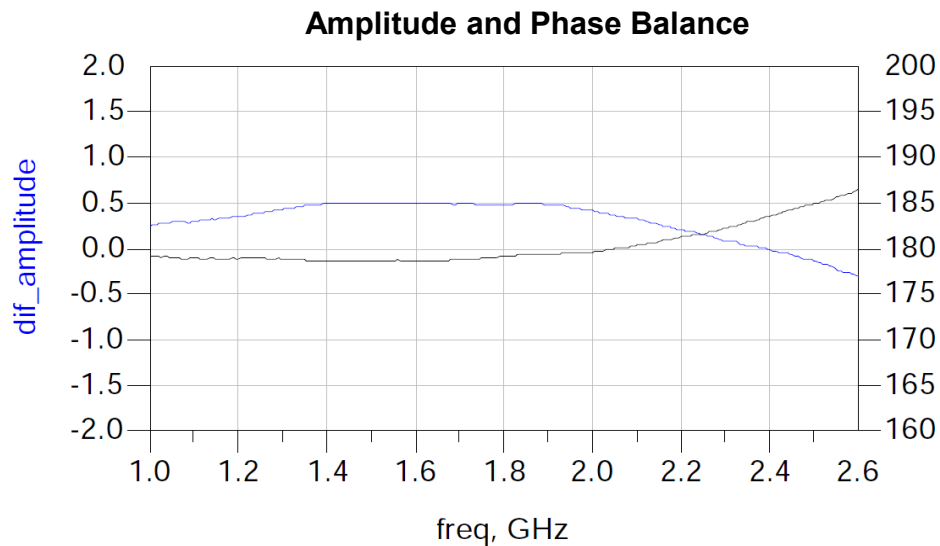
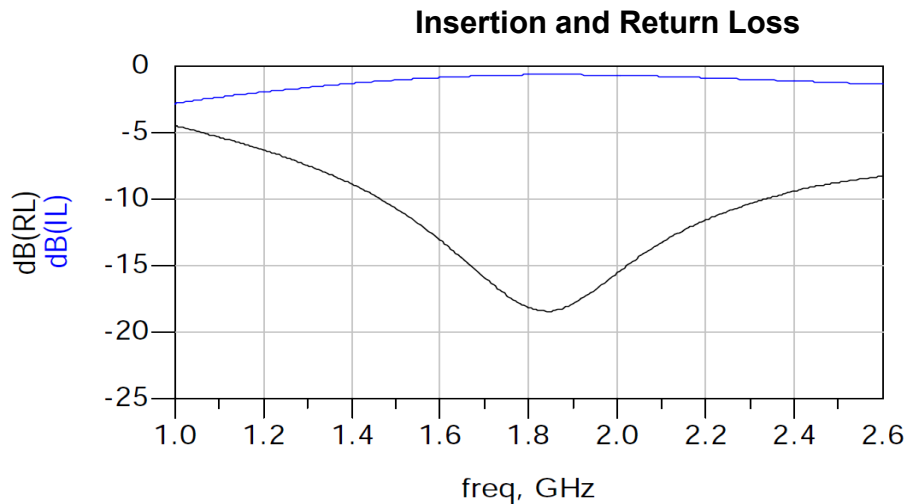
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P/N 1850BL15B050

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## Typical Electrical Characteristics (T=25°C)



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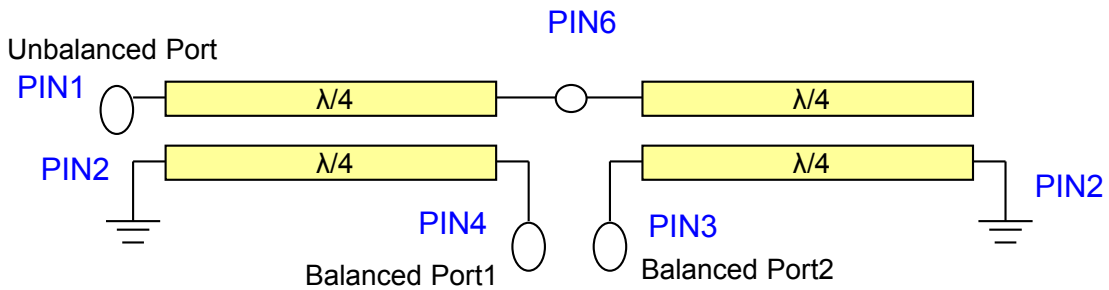
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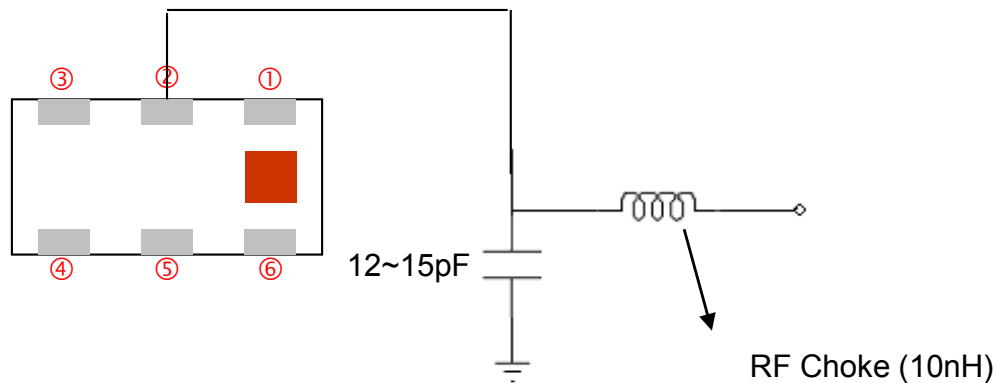
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## Equivalent Circuit



## Recommended Circuit when using DC-Feed (Pin 2) feature



Note: The by-pass capacitor and RF choke should be placed as *close as possible* to Pin2 of balun!

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## Part Number Explanation

|            |                   |                    |               |                           |
|------------|-------------------|--------------------|---------------|---------------------------|
| P/N Suffix | Packing Style     | Bulk               | Suffix = S    | Eg. 1850BL15B050S         |
|            |                   | T & R              | Suffix = E    | Eg. 1850BL15B050E         |
|            | Termination style | 100% Tin           | Suffix = None | Eg. 1850BL15B050 (E or S) |
|            | Evaluation Board  | 1850BL15B050-EBSMA |               |                           |

## Recommended Storage Conditions of unused product on T&R

+5 to +35°C, 18 mos. max. Humidity 45~75% RH

## More Balun info at:

[www.johansontechnology.com/baluns](http://www.johansontechnology.com/baluns)

## RoHS Compliance

[www.johansontechnology.com/rohs-compliance](http://www.johansontechnology.com/rohs-compliance)

## Packaging information

[www.johansontechnology.com/tape-reel-packaging](http://www.johansontechnology.com/tape-reel-packaging)

## Soldering Information

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

## Layout Files, s-parameters and any other technical questions

[www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

## MSL Info

[www.johansontechnology.com/msl-rating](http://www.johansontechnology.com/msl-rating)

## Recommended Storage Condition and Max Shelf Life

[www.johansontechnology.com/recommended-storage-conditions](http://www.johansontechnology.com/recommended-storage-conditions)

## Antenna layout and tuning techniques

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

## Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipc-antenna-services](http://www.johansontechnology.com/ipc-antenna-services)

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