



**THE DATASHEET OF  
3700BL15B100E**



# High Frequency Ceramic Solutions


**3.7 GHz 1:2 RF Balun**

**P/N 3700BL15B100**

Detail Specification: 8/11/2017

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## General Specifications

<b>Part Number</b>	3700BL15B100			
<b>Frequency (MHz)</b>	3400 ~ 4000			
<b>Unbalanced Impedence</b>	50 $\Omega$			
<b>Differential Balanced Imp.</b>	100 $\Omega$			
<b>Insertion Loss</b>	1.0 dB max.			
<b>Return Loss</b>	9.5 dB min.			
<b>Phase Difference (degree)</b>	180 $\pm$ 20			
<b>Amplitude Difference</b>	1.0 dB max.		<b>Operating Temperature</b>	-40 to +85°C
<b>Impedence</b>	50 / 50 $\Omega$		<b>Recommended Storage Conditions of unused product on T&amp;R</b>	+5 to +35°C, 18 mos. max. Humidity 45~75% RH
<b>Power Capacity</b>	3W max. (CW)			
<b>Reel Quantity</b>	4,000 pcs			

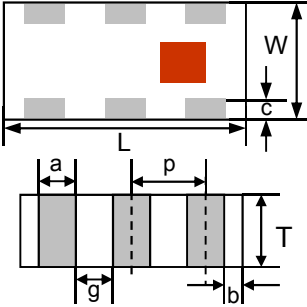
You can download measured s-parameters of this component at: <https://www.johansontechnology.com/baluns>

## Part Number Explanation

<b>P/N Suffix</b>	<b>Packing Style</b>	Bulk	Suffix = S	Eg. 3700BL15B100S
		T & R	Suffix = E	Eg. 3700BL15B100E
	<b>Termination style</b>	100% Tin	Suffix = None	Eg. 3700BL15B100 (E or S)
	<b>Evaluation Board</b>	3700BL15B100-EB2SMA (3 female SMA connectors)		

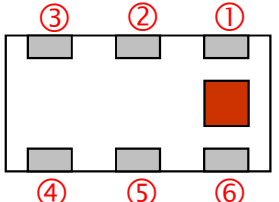
## Mechanical Dimensions

	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>	0.037 $\pm$ 0.004	0.95 $\pm$ 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 (IN)
<b>2</b>	GND or DC feed + RF GND
<b>3</b>	Balanced Port (OUT1)
<b>4</b>	Balanced Port (OUT2)
<b>5</b>	GND
<b>6</b>	NC



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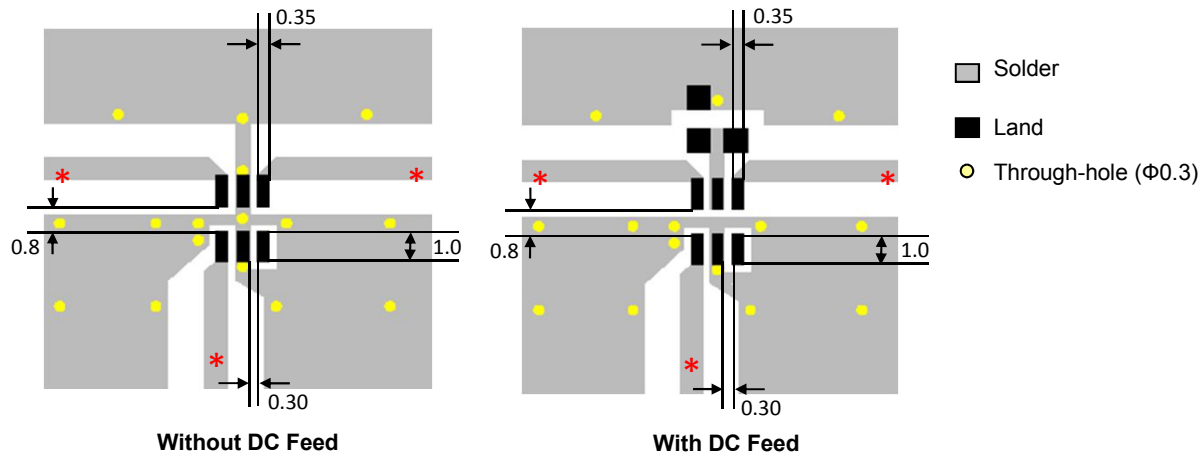
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## Mounting Considerations

Mount these devices with colored mark facing up.

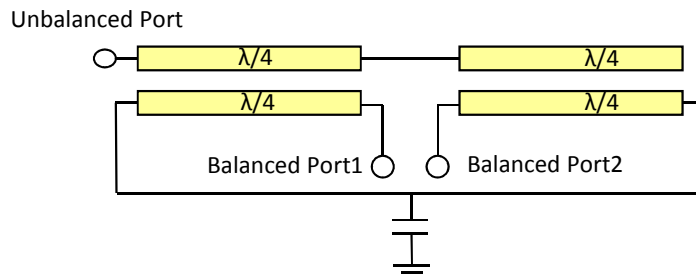
\* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

\*\* By-pass capacitor should be connected when feeding DC power.



Need our help laying this out for you? Need the layout file? Send us a message at:  
<https://www.johansontechnology.com/ask-a-question>

## Equivalent Circuit



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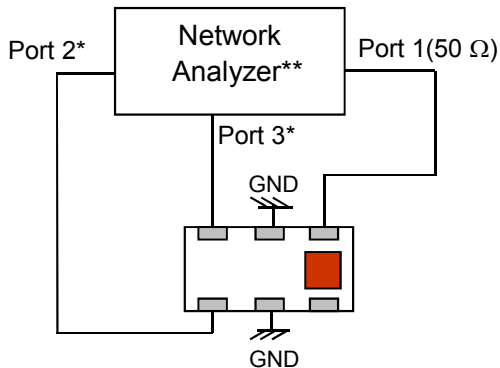
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## Measuring Diagram

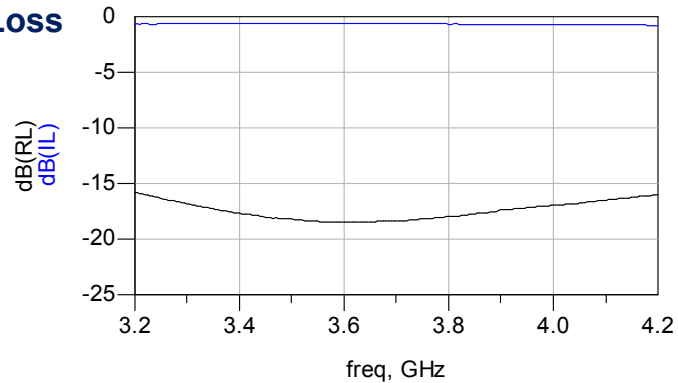


Port 1: Unbalanced Port  
 Ports 2 and 3: Balanced Port  
 $IL = S_{ds21}$   
 $RL = S_{ss11}$   
 $Amp\_balance = dB(S(2,1)/S(3,1))$   
 $Phase\_balance = Phase(S(2,1)/S(3,1))$

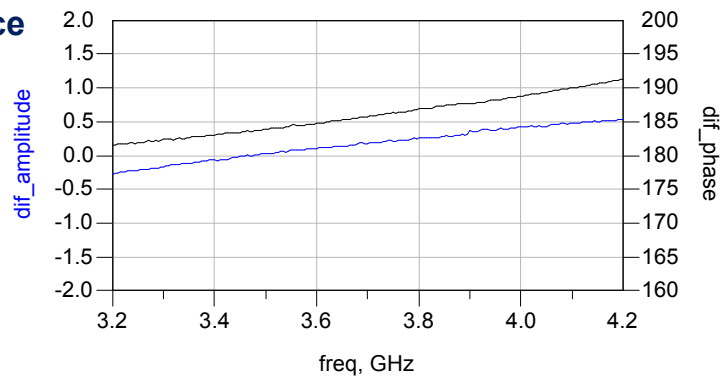
\*Impedance for ports 2 and 3 = Balanced Impedance/2  
 \*\*E5071B from Agilent

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

### Insertion Loss and Return Loss



### Amplitude and Phase Balance



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## More Baluns

[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 (i.e. recommended profile)

[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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