



**THE DATASHEET OF**  
**1600BL15B050E**



# High Frequency Ceramic Solutions

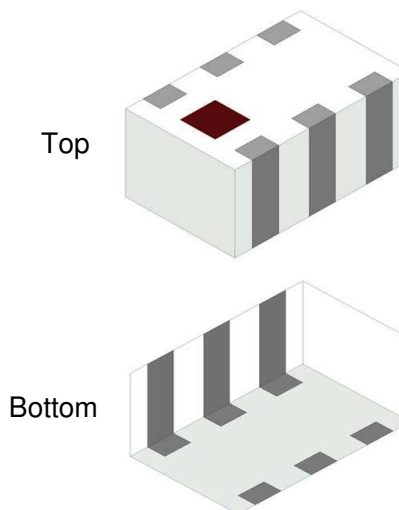
1.6 GHz Balun, 1:1 Impedance Ratio, EIA 0805

P/N 1600BL15B050

Detail Specification: 3/4/2022

Page 1 of 4

General Specifications	
Part Number	1600BL15B050
Frequency (MHz)	1500 - 1700
Unbalanced Impedance ( $\Omega$ )	50
Balanced Impedance ( $\Omega$ )	50
Insertion Loss (dB)	1.0 max.
Return Loss (dB)	9.5 min.
Phase Difference (deg.)	180 $\pm$ 10
Amplitude Difference (dB)	2.0 max.
Power Capacity (W)	2 max. (CW)
Reel Quantity (pcs./reel)	4,000
Operating Temperature	-40 to +85°C
Recommended Storage Conditions and Period for unused Product on T&R	+5 to +35°C Humidity 45 - 75% RH 18 months max.



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

Part Number Explanation				
P/N Suffix	Packing Style	Bulk (loose pcs.)	Suffix = S	E.g. 1600BL15B050S
		T & R	Suffix = E	E.g. 1600BL15B050E
	Termination Style	Ni/Sn	Suffix = None	E.g. 1600BL15B050(E or S)
	Evaluation Board	1600BL15B050-EB2SMA (3 female SMA connectors)		

Mechanical Dimensions		
	In	mm
L	0.079 $\pm$ 0.004	2.00 $\pm$ 0.10
W	0.049 $\pm$ 0.004	1.25 $\pm$ 0.10
T	0.037 $\pm$ 0.004	0.95 $\pm$ 0.10
a	0.012 $\pm$ 0.004	0.30 $\pm$ 0.10
b	0.008 $\pm$ 0.004	0.20 $\pm$ 0.10
c	0.012 +0.004/-0.008	0.30 +0.1/-0.2
g	0.014 $\pm$ 0.004	0.35 $\pm$ 0.10
p	0.026 $\pm$ 0.002	0.65 $\pm$ 0.05

Terminal Configuration	
1	Unbalanced Port
2	GND or DC feed + RF GND
3	Balanced Port
4	Balanced Port
5	GND
6	NC

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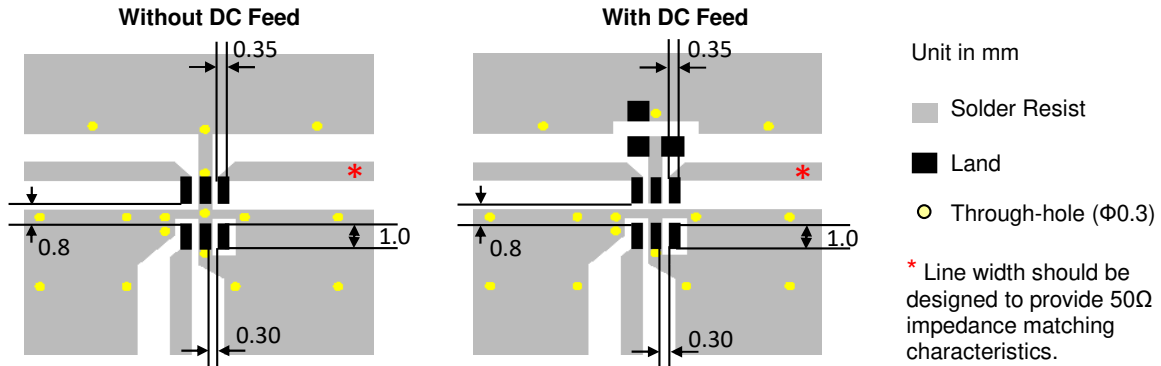
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Page 2 of 4

## Layout and Mounting Considerations

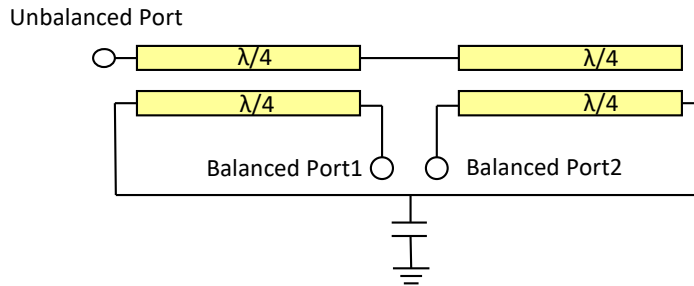
Mount these devices with colored mark facing up.

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

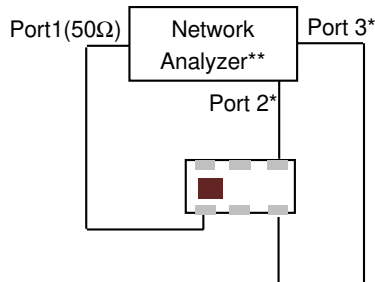


Need our help laying this out for you? Send us a message at: <https://www.johansontechnology.com/ask-a-question>

## Equivalent Circuit



## 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

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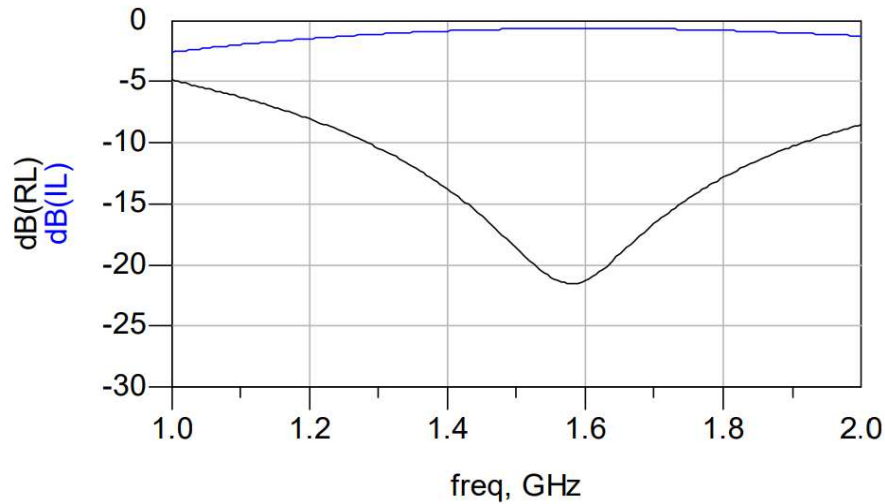
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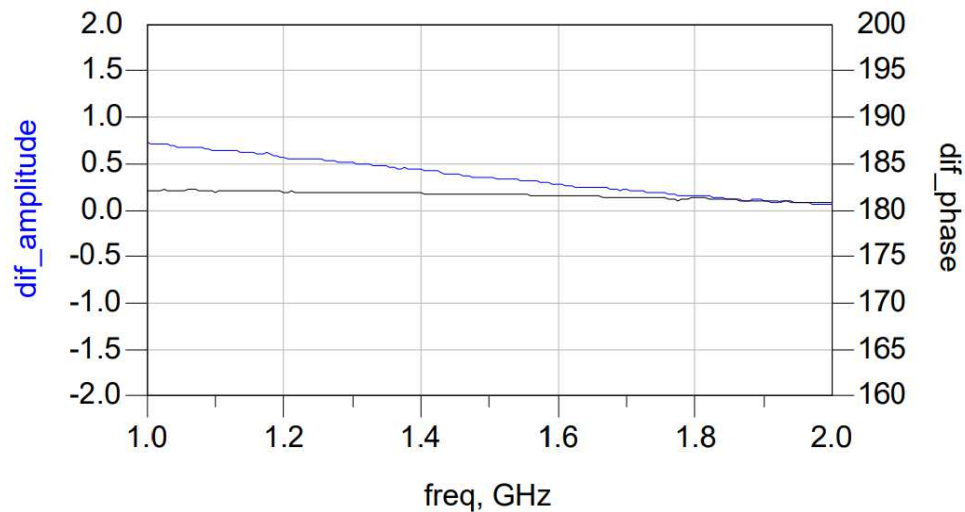
Page 3 of 4

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

### Insertion and Return Loss



### Amplitude and Phase Balance



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Page 4 of 4

## More RF Balun info at:

<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>

## Layout review services

<https://www.johansontechnology.com/ask-a-question>

## Antenna layout review, tuning, and characterization services

<https://www.johansontechnology.com/ipc-antenna-services>

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