

# High Frequency Ceramic Solutions

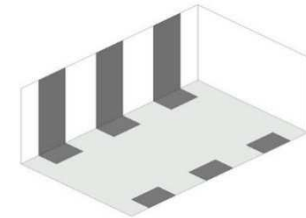
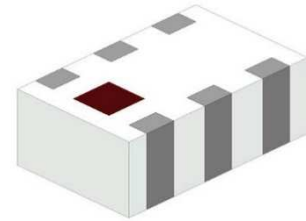
6.75 GHz Balun, 1:1 Impedance, EIA 0603

P/N 6750BL14A0050

Detail Specification: 7/5/2022

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General Specifications	
Part Number	6750BL14A0050
Frequency (MHz)	4900 - 8500      5000 - 8500
Unbalanced Impedance ( $\Omega$ )	50
Balanced Impedance ( $\Omega$ )	50
Insertion Loss (dB)	0.7 typ. (1.5 max.)
Return Loss (dB)	14.5 typ. (9.5 min.)
Phase Difference (deg.)	180 $\pm$ 14      180 $\pm$ 13
Amplitude Difference (dB)	$\pm$ 1.5 max. $\pm$ 1.25 max.
CMRR (dB)	17.5 min.      17.5 min.
Power Capacity (W)	3 max. (CW)      3 max. (CW)
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.
Reel Quantity (pcs./reel)	4,000



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. 6750BL14A0050S
		T & R	Suffix = T	E.g. 6750BL14A0050T
	Termination Style	Ni/Sn	Suffix = None	E.g. 6750BL14A0050(T or S)
	Evaluation Board	6750BL14A0050-EB1SMA		

Mechanical Dimensions		
	In	mm
L	0.063 $\pm$ 0.004	1.60 $\pm$ 0.10
W	0.031 $\pm$ 0.004	0.80 $\pm$ 0.10
T	0.024 $\pm$ 0.004	0.60 $\pm$ 0.10
a	0.008 $\pm$ 0.004	0.20 $\pm$ 0.10
b	0.008 $\pm$ 0.006	0.20 $\pm$ 0.15
c	0.006 $\pm$ 0.004	0.15 $\pm$ 0.10
g	0.012 $\pm$ 0.004	0.30 $\pm$ 0.10
p	0.020 $\pm$ 0.002	0.50 $\pm$ 0.05

<Bottom View>

<Side View>

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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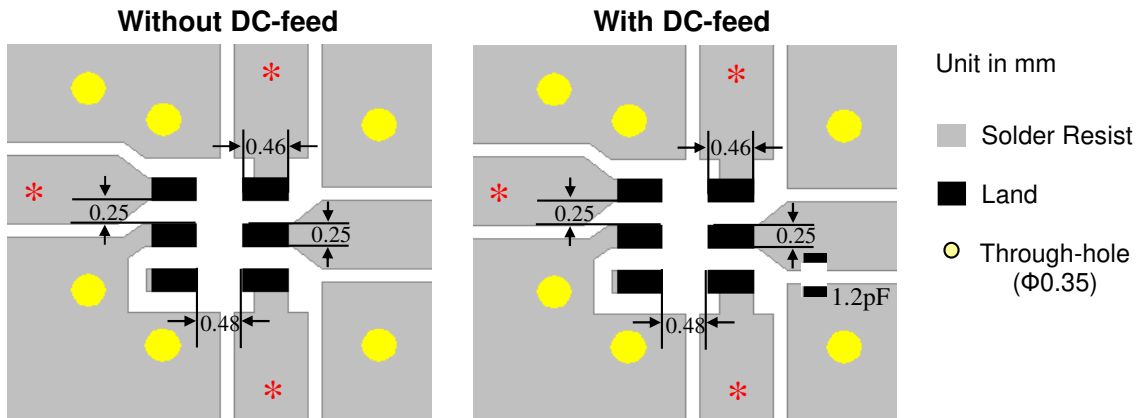
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## Layout and Mounting Considerations

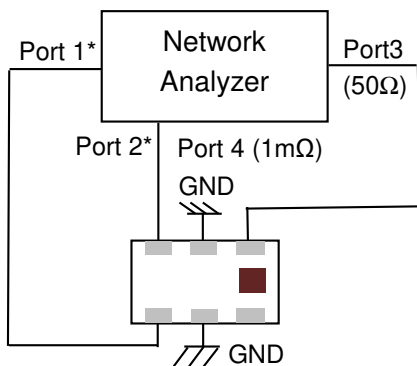
Mount these devices with colored mark facing up.  
By-pass capacitor should be connected when feeding DC power.



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

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

## Measuring Diagram



Port 3: Unbalanced Port  
Ports 1 and 2: Balanced Port  
Ports 4: GND or DC feed + RF GND  
 $IL = S_{ds21}$   
 $RL = S_{ss11}$   
 $Amp\_balance = dB(S(1,3)/S(2,3))$   
 $Phase\_balance = Phase(S(1,3)/S(2,3))$

\*Impedance for ports 1 and 2 = Balanced Impedance/2

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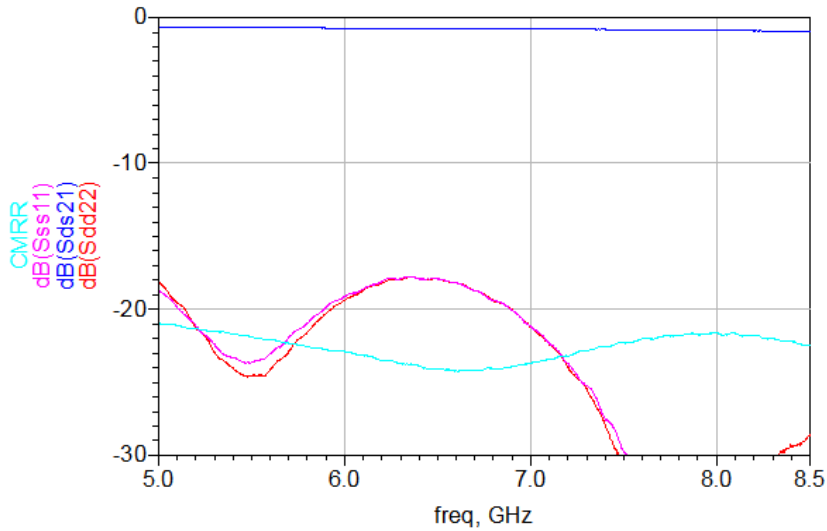
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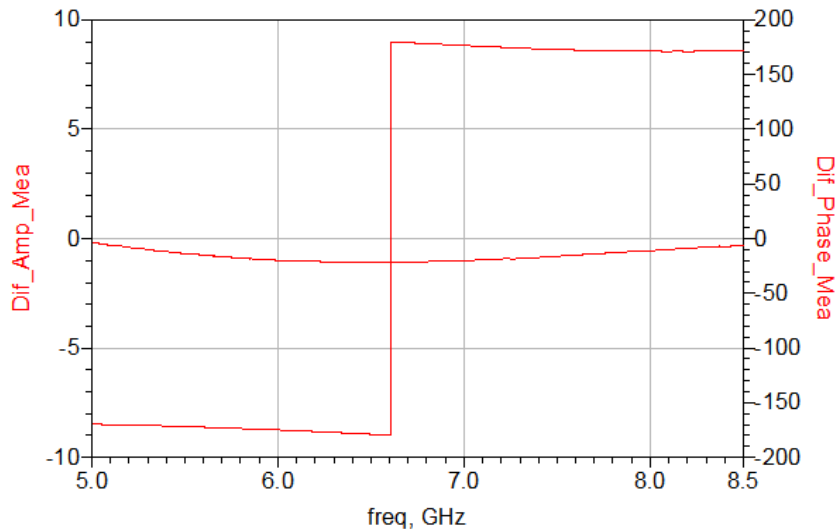
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## Typical Electrical Characteristics (T=25°C)

### Insertion, Return Loss and CMRR



### Amplitude and Phase Balance



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## 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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