

# High Frequency Ceramic Solutions

5.5 GHz, 1:2 RF Balun, EIA 0805

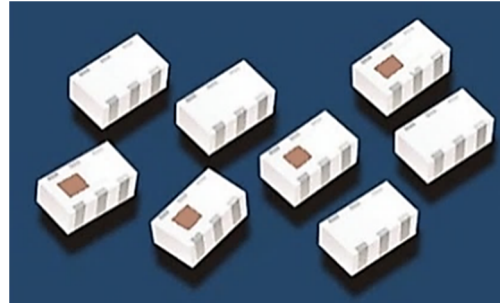
P/N 5400BL15B100

Detail Specification: 4/9/2020

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## General Specifications

Part Number	5400BL15B100
Frequency (MHz)	4900 - 5900
Unbalanced Impedance	50 $\Omega$
Balanced Impedance	100 $\Omega$
Reel Quantity	4,000 pcs
Operating Temperature	-40 to +85°C
Recommended Storage Conditions of uninstalled product still on T&R	+5 to +35°C, 18 mos. max. Humidity 45~75% RH



## Electrical Specifications

Operating Temp	-40C to +85°C
Insertion Loss @ BW (dB)	0.45 typ. (1.0 dB max.)
Phase Balance (deg°)	180 $\pm$ 10
Amplitude Difference (dB)	2 max.
VSWR	1.24 typ. (2.0 max.)
Power Capacity	2W max. (CW)

If you need a free layout review or would like the measured s-parameters of this component, please contact us at <https://www.johansontechnology.com/ask-a-question>

## Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	Eg. 5400BL15B100S
		T & R	Suffix = E	Eg. 5400BL15B100E
	Termination style	100% Tin	Suffix = None	Eg. 5400BL15B100 (E or S)

## 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	0.033 $\pm$ 0.004	0.85 $\pm$ 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	
3	Balanced Port	
4	Balanced Port	
5	GND	
6	NC	

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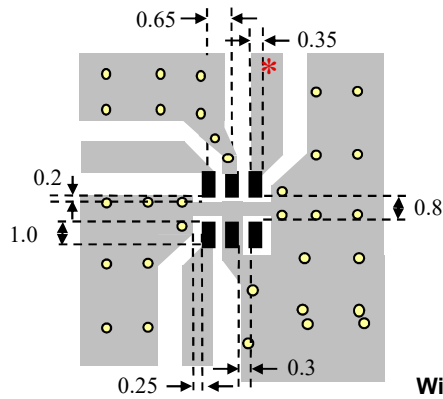
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## Recommended Solder Pad Dimension (EVB below is Johanson's test board)

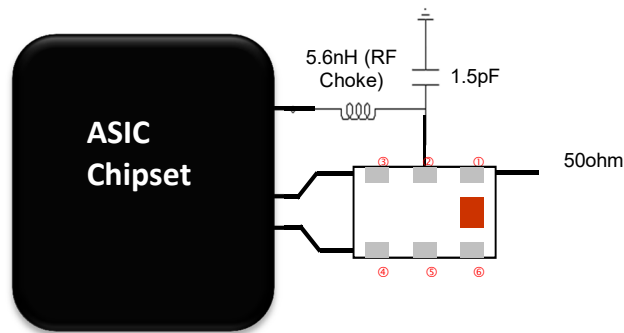


Mount these devices with brown mark facing up.

\* Line width designed to provide 50Ω impedance matching

Without DC Feed

## Mounting Considerations In Application using DC Feed



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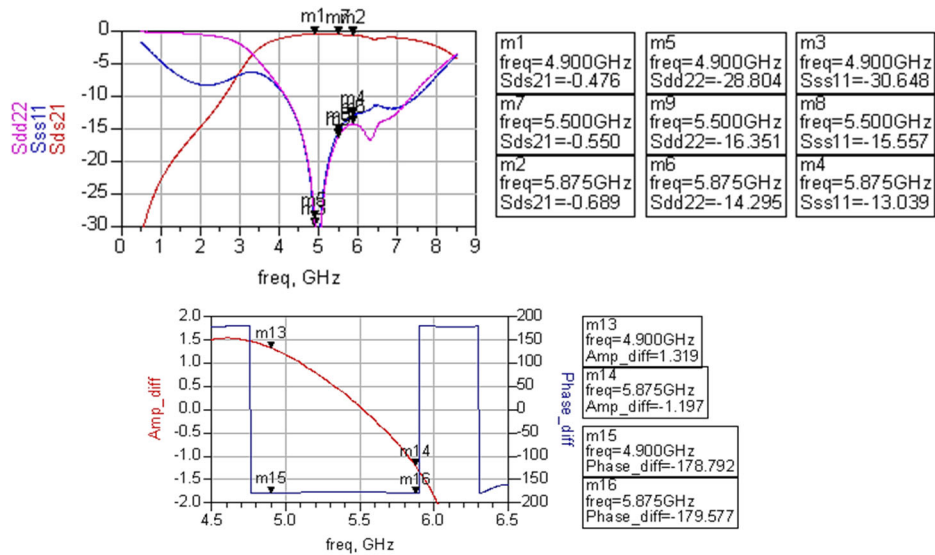
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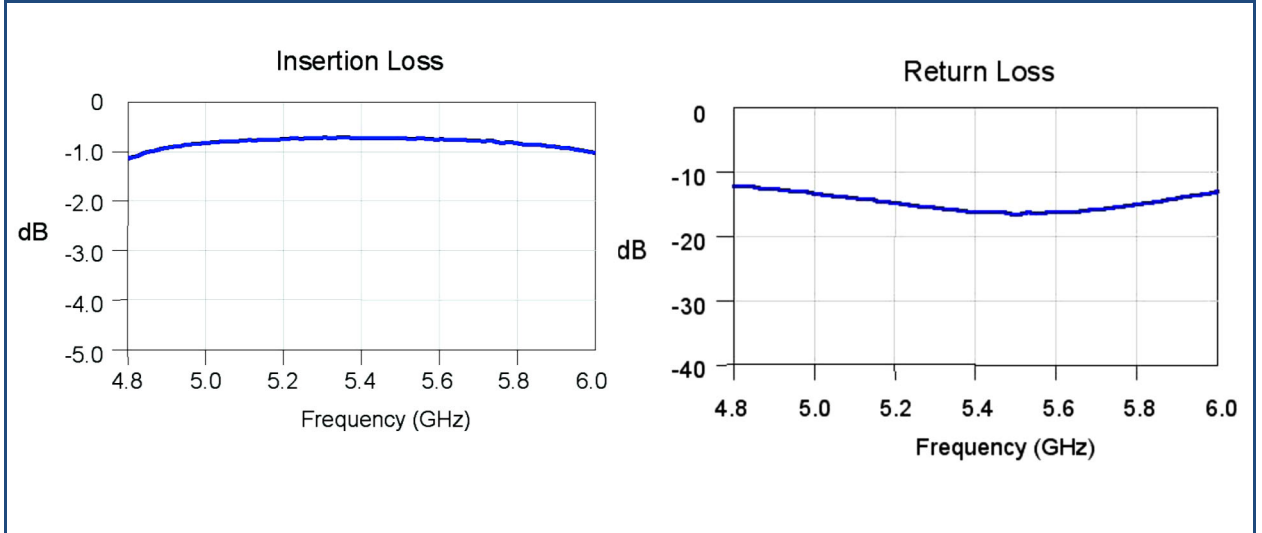
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## Insertion Loss and Attenuation with 1.5pF cap on Pin 2



## Typical Electrical Characteristics (T=25°C) w/o DC feed, Pin2 connected to GND



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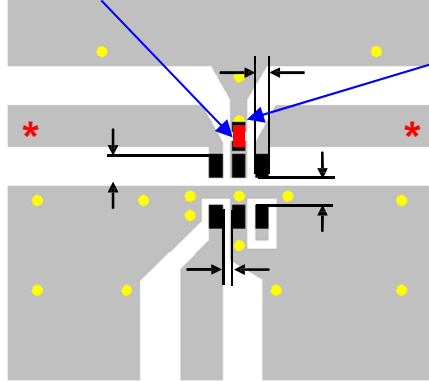
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## Application Note Regarding DC-bias

Units in mm

\*\*Recommended bypass capacitor: 1.5pF (EIA 0402)



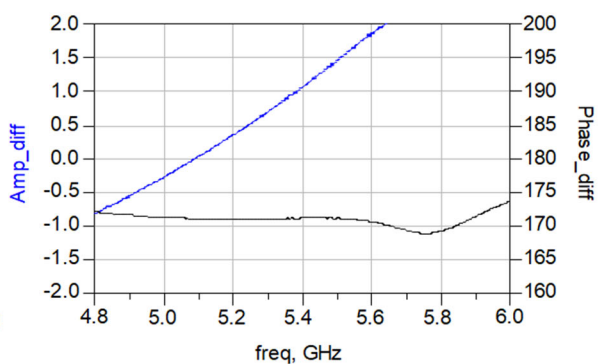
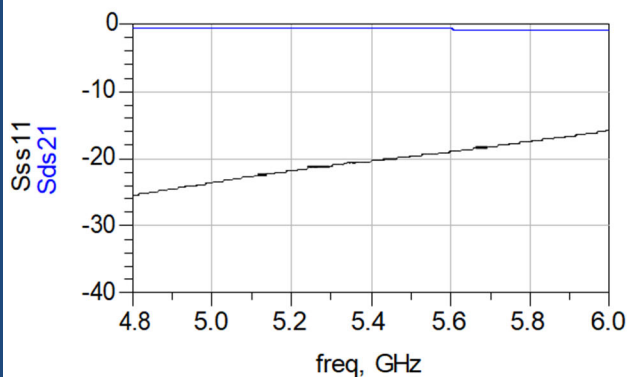
GND Via as close to capacitor as possible

- Solder-resist
- Land
- GND Via (0.3 dia.)

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

\*\*When using this balun in a DC bias configuration, a bypass capacitor is required to shunt RF signals to ground. Be aware that due to this added bypass capacitor, there is a longer path to ground that contributes to increased imbalance between the differential paths. We recommend that the GND via be placed as close as possible to the bypass capacitor to minimize this effect.

The below responses illustrate the 5400BL15B100 balun in a DC-bias configuration with a 1.5pF EIA 0402 bypass capacitor shunt to ground.



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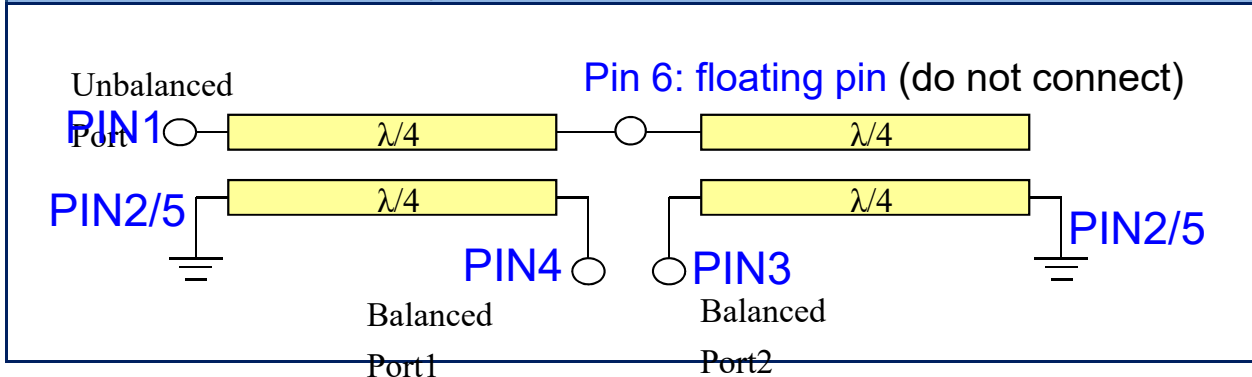
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## Equivalent Circuit (Marchand-Type Balun)



More Balun info such as measured s-parameters and ordering 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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