

High Frequency Ceramic Solutions

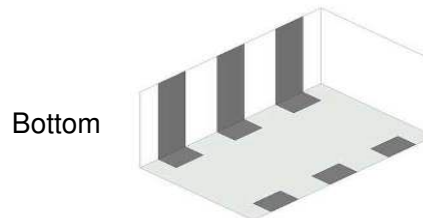
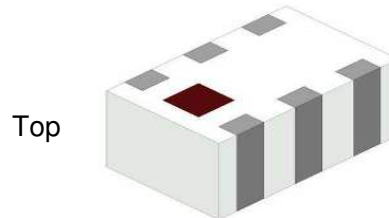
4GHz Balun, 1:2 Impedance, EIA 0603

P/N 4000BL14U100

Detail Specification: 4/27/2022

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| General Specifications | |
|---|---|
| Part Number | 4000BL14U100 |
| Operating Frequency (MHz) | 3100 - 4800 |
| Unbalanced Impedance (Ω) | 50 |
| Balanced Impedance (Ω) | 100 |
| Insertion Loss (dB) | 1.2 max. |
| Return Loss (dB) | 9.5 min. |
| Phase Difference (deg.) | 180 \pm 20 |
| Amplitude Difference (dB) | 1.5 max. |
| Power Capacity (W) | 2 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. 4000BL14U100S |
| | | T & R | Suffix = T | E.g. 4000BL14U100T |
| | Termination Style | Ni/Sn | Suffix = None | E.g. 4000BL14U100(T or S) |
| | Evaluation Board | 4000BL14U100-EB2SMA (3 female SMA connectors) | | |

| 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 +0.004/-0.006 | 0.20 +0.10/-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 |

| 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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4GHz Balun, 1:2 Impedance, EIA 0603

P/N 4000BL14U100

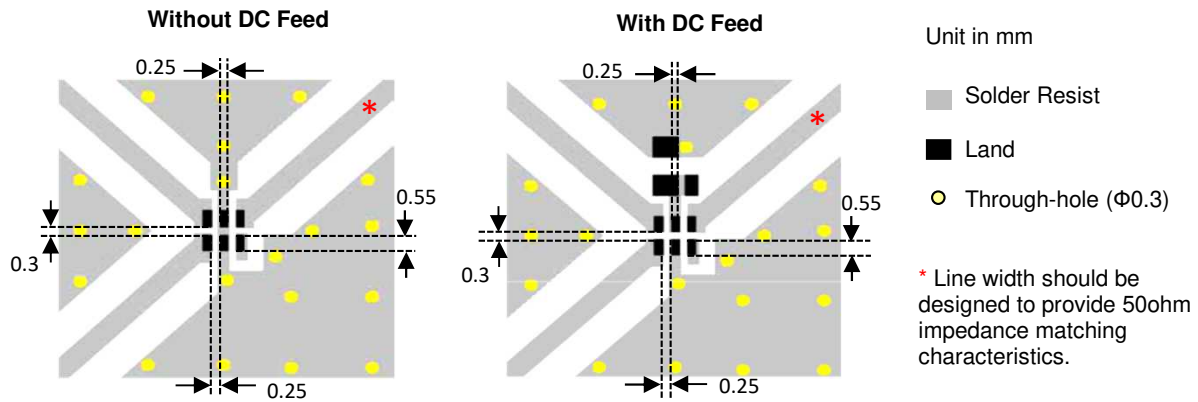
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Layout and Mounting Considerations

Mount these devices with colored mark facing up.

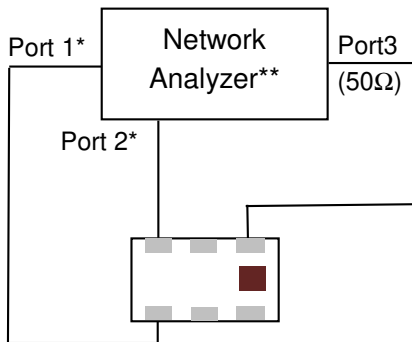
By-pass capacitor should be connected when feeding DC power.



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

** E5071B from Agilent

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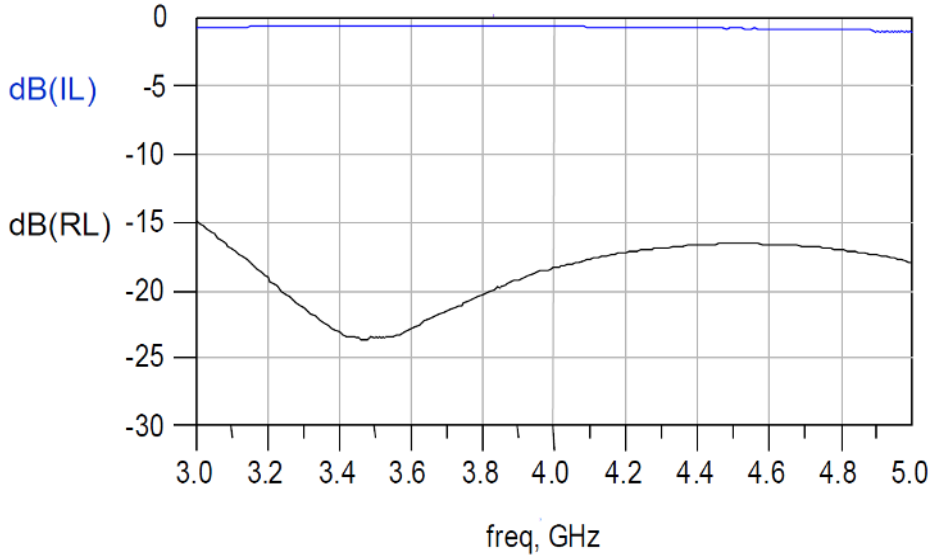
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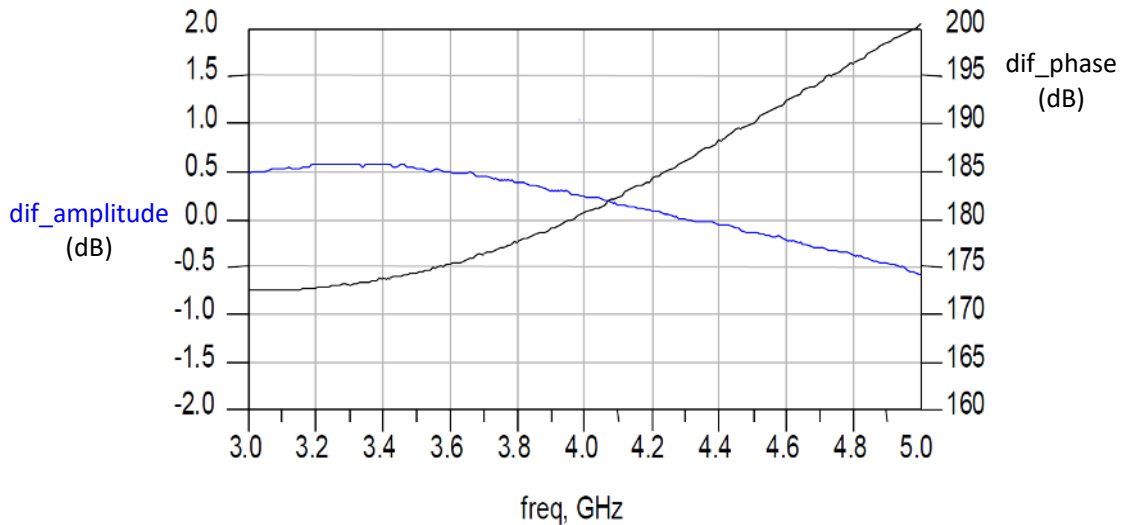
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Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



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4GHz Balun, 1:2 Impedance, EIA 0603

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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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