

High Frequency Ceramic Solutions

862 - 928MHz Integrated Impedance-matched Balun Filter for Analog Devices, Inc. ADF7023, ADF7023-J, and ADF7024

P/N: 0900PC15F0030

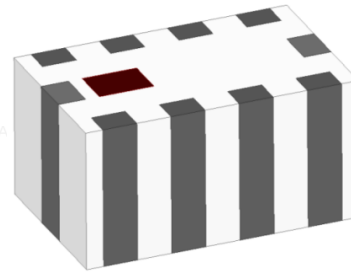
Detail Specification: 1/4/2018

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Do you need a small sub-GHz antenna? Go to: www.johansontechnology.com/antennas

General Specifications

Part Number	0900PC15F0030
Frequency (MHz)	862 - 928
Unbalanced Impedance (Ω)	50
Balanced Impedance (Ω)	Impedance matched to Analog Devices, Inc. ADF7023, ADF7023-J, ADF7024
Insertion Loss (dB)	1.8 typ (2.3 max.)
Return Loss (dB)	10 min.
Phase Balance (deg)	180 $\pm$ 15
Amplitude Difference (dB)	2.0 max.
Attenuation (dB @MHz)	33 min. @1736 - 1856 40 min. @2604 - 2784 40 min. @3472 - 3712 35 min. @4340 - 4640
Power Capacity (W)	3 max. CW
Operating Temperature	-40°C to +85°C
Quantity/Reel	4,000



Analog Devices, Inc. Approved!

Storage Temperature Range	-40°C to +85°C
Storage Period	18 months max
Recommended Storage Conditions for unused T&R product	+5 ~ +35 °C, Humidity 45~75%RH, 18 mos. max

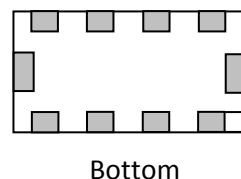
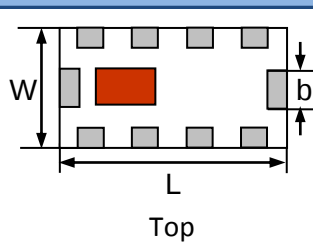
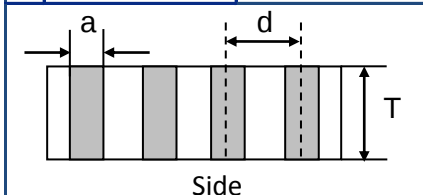
For more Analog Devices, Inc. matched balun-filters, go to: www.johansontechnology.com/analog

Part Number Explanation

P/N Suffix	Packing Style	Bulk	Suffix = S	eg. 0900PC15F0030S
		T & R	Suffix = E	eg. 0900PC15F0030E
		100% Tin	Suffix = None	eg. 0900PC15F0030(E or S)

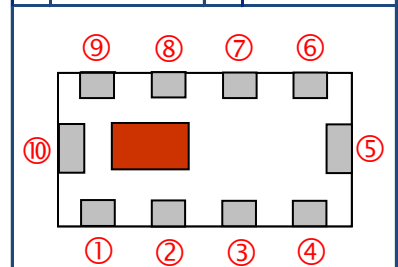
Mechanical Dimensions

	In	mm
L	0.079 $\pm$ 0.008	2.00 $\pm$ 0.2
W	0.049 $\pm$ 0.008	1.25 $\pm$ 0.2
T	0.039 max.	1.00 max.
a	0.010 $\pm$ 0.004	0.25 $\pm$ 0.1
b	0.012 $\pm$ 0.006	0.30 $\pm$ 0.2
c	0.008 +0.004/-0.006	0.20 +0.1/-0.15
d	0.020 $\pm$ 0.004	0.50 $\pm$ 0.1



Terminal Configuration

No.	Function	No.	Function
1	GND	6	TX
2	GND	7	RX_N
3	ANT	8	RX_P
4	GND	9	DC Feed or GND
5	GND	10	GND



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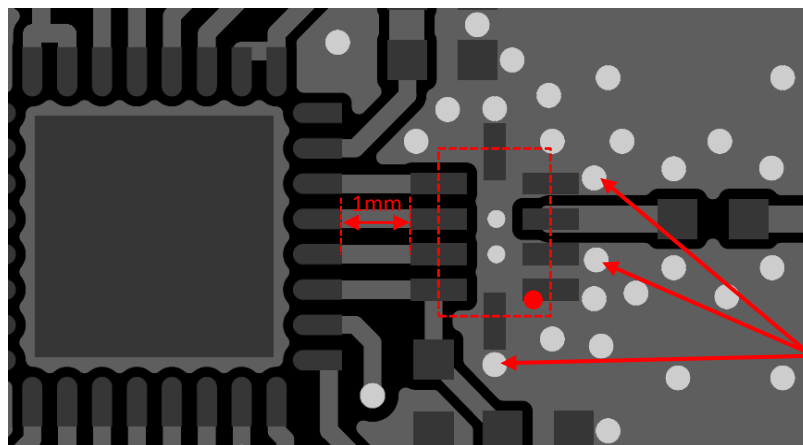
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Pad-Soldermask Guidelines (with DC Feed)



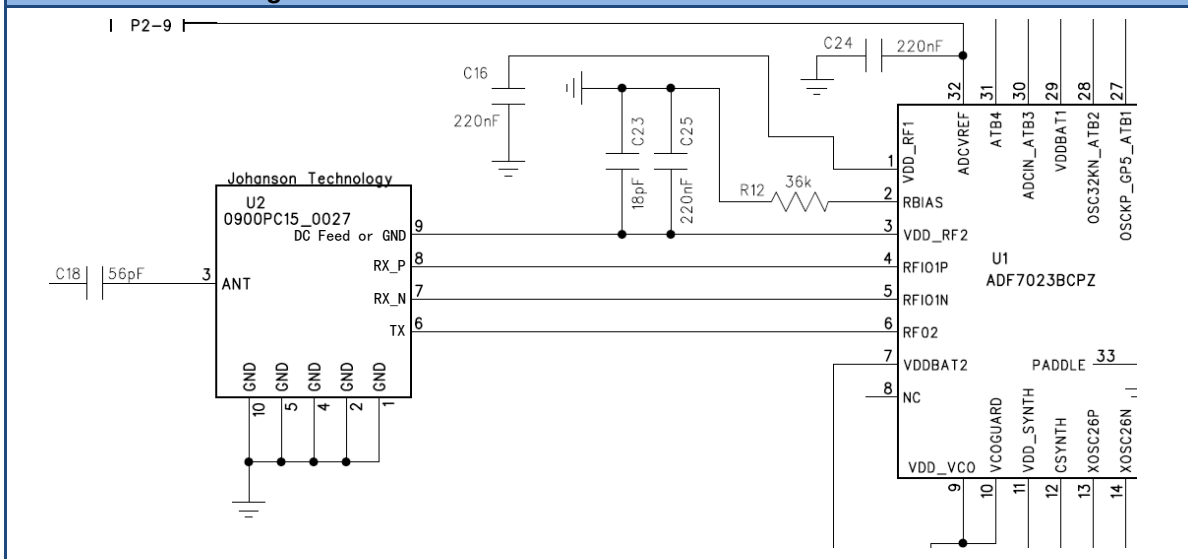
- GND Pads
- Solder Pads
- GND via (ϕ 0.20&0.35)

GND vias are crucial for filter harmonic attenuation

For reference design package and PCB CAD files, please contact us at:

www.johansontechnology.com/ask-a-question

PCB Reference Design Schematic



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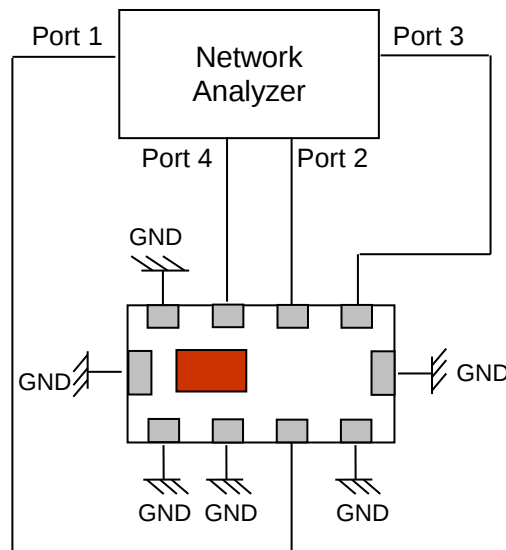
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Measuring Diagram



Tx mode:

Port 1 Load Impedance : 50Ω

Port 3 Load impedance: Complex conjugate to $Z_{IC,TX\ on}$ of ADF7023, ADF7023-J, ADF7024

Port 2 and 4 Load impedance: $Z_{IC,RX\ off}$ of ADF7023, ADF7023-J, ADF7024

$$IL = S_{31}$$

$$RL = S_{11} / S_{33}$$

Rx mode:

Port 1 Load impedance: 50Ω

Port 2 and 4 Load impedance: Complex conjugate to $Z_{IC,RX\ on}$ of ADI ADF7023, ADF7023-J ADF7024

Port 3 Load impedance: $Z_{IC,TX\ off}$ of ADI ADF7023, ADF7023-J, ADF7024

$$IL = S_{DS21}$$

$$RL = S_{SS11} / S_{DD22}$$

$$\text{Amp_balance} = \text{dB}(S(1,2)/S(1,4))$$

$$\text{Phase_balance} = \text{Phase}(S(1,2)/S(1,4))$$

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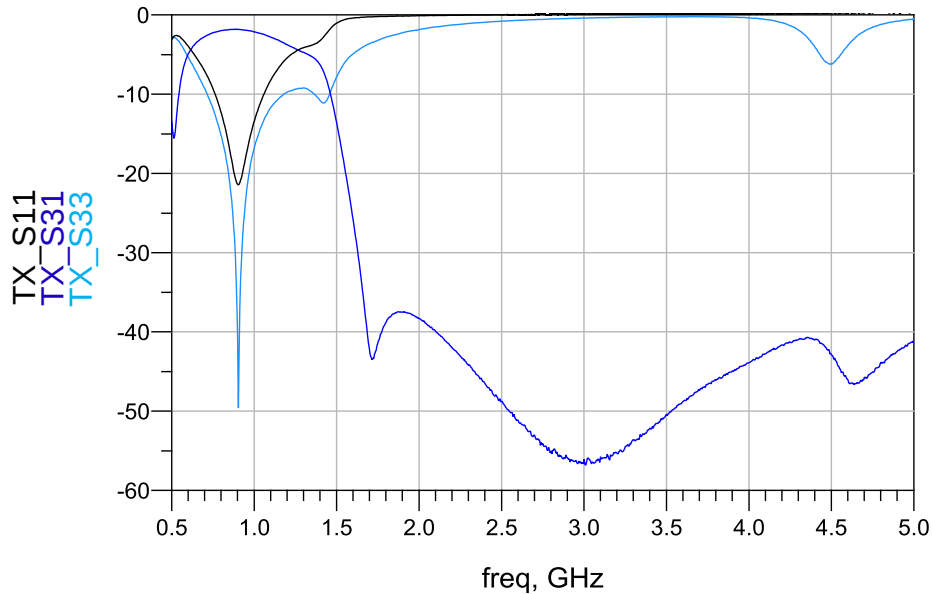
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Typical Electrical Characteristics (T=25°C)

Transmit Mode Insertion Loss, Return Loss, and Attenuation



If you would like the measured s-parameters, contact us at:

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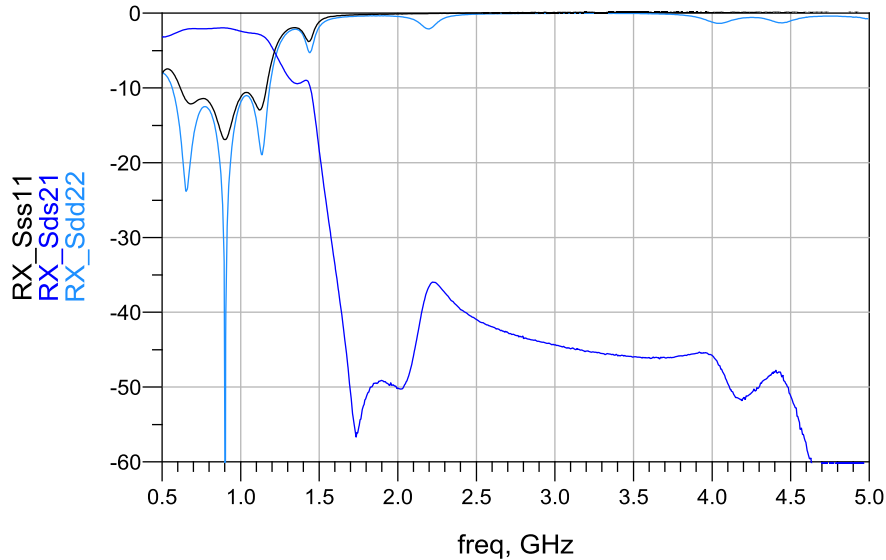
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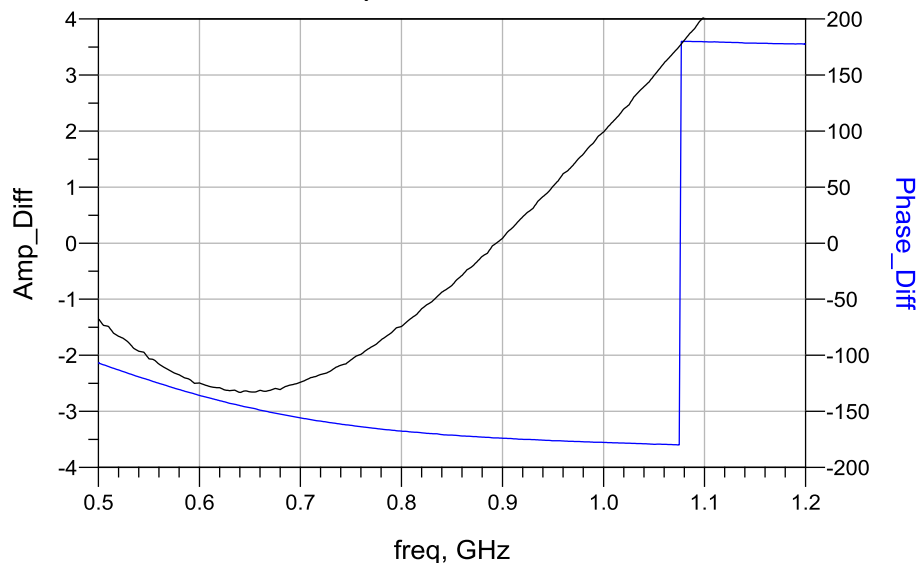
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Typical Electrical Characteristics (T=25°C)

Receive Mode Insertion Loss, Return Loss, and Attenuation



Receive Mode Phase Balance, Amplitude Difference



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Application Notes, Layout Files, and more

www.johansontechnology.com/analog

Small SMD 900MHz (or 2.4G, 5G) antennas at:

www.johansontechnology.com/antennas

RoHS Compliance

www.johansontechnology.com/rohs-compliance

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

Antenna layout and tuning techniques

www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services

www.johansontechnology.com/ipc-antenna-services

MSL Info

www.johansontechnology.com/msl-rating

Recommended Storage Condition and Max Shelf Life

www.johansontechnology.com/recommended-storage-conditions

Packaging information

www.johansontechnology.com/tape-reel-packaging

Would you like us to review your layout for free? Need an embedded antenna recommendation for your application?

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