

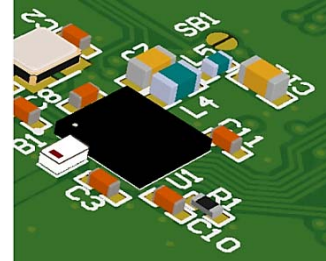
High Frequency Ceramic Solutions

2.45GHz Impedance Matched Balun + Band Pass Filter: Optimized for Nordic's Chipset nRF51822-CEAA, nRF51822-CDAB, nRF51822-CFAC, nRF51422-CEAA, nRF51422-CDAB, nRF51422-CFAC **P/N 2450BM08B0003**

Detail Specification: 7/29/2015

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General Specifications	
Part Number	2450BM08B0003
Frequency (MHz)	2400 - 2500
Unbalanced Impedance	50 Ω
Balanced Differential Impedance	Conjugate match to: nRF51822-CEAA, nRF51822-CDAB, nRF51822-CFAC, nRF51422-CEAA, nRF51422-CDAB, nRF51422-CFAC
Average Insertion Loss when connected to the nRF51XX chipset (Active OP)	1dB Typ @25C, 1.5dB max. (-40 to +85C), 2.4dB max (+85 to +105C)
Insertion Loss when component measured by itself (passive insertion loss)	1.88dB Typ. @25C, 3.65dB @105C
Return Loss (dB)	14 Typ./9.5 min.
Attenuation Differential mode (dB):	
24 typ. /15dB min. @ 800-928 MHz	
20 typ. / 10dB min. @ 1000-1200 MHz	
36 typ. / 14dB min. @ 4800-5000 MHz	
25 typ. / 15dB min. @ 7200-7500 MHz	
Phase Difference (deg.)	180° ± 10



Phase Difference (deg.)	180° ± 10
Amplitude Difference	2.0 max.
Qty/Reel (pcs)	4,000
Operating Temp. Range	-40 ~ +105°C
Storage Temp. Range	-40 ~ +85°C
Recommended Storage Conditions of Product on T&R	+5 ~ +35 °C, Humidity 45-75%RH, 18 months max on vacuum package, 1 week max after opened ¹
Storage Period	18 months max.
Power Capacity	2W max (CW)

You can download layout files, schematics, output power measured results (App Note AN030), and s-parameters at: <http://www.johansontechnology.com/nordic>

Part Number Explanation				
P/N Suffix	Packaging Style	Bulk	Suffix = S	E.g.. 2450BM08B0003S
		T & R	Suffix = T	E.g.. 2450BM08B0003T
	Termination Style	AgPt ¹	Suffix = None	E.g.. 2450BM08B0003(T or S)

¹Silver Pad component. Vacuum package required. For handling info go to: www.johansontechnology.com/silverleads

Mechanical Dimensions		
Inches	Millimeter	
L	0.055 ± 0.006	1.40 ± 0.15
W	0.039 ± 0.006	1.00 ± 0.15
T	0.027 max.	0.69 max.
a	0.009 +/- 0.002	0.22 +/- 0.05
b	0.004 +/- 0.002	0.0975 +/- 0.05
c	0.011 +/- 0.002	0.28 +/- 0.05
d	0.007 +/- 0.002	0.18 +/- 0.05

Terminal Configuration			
No	Function	No	Function
1	Unbalanced Port	4	Balanced Port
2	DC Feed	5	GND
3	Balanced Port		

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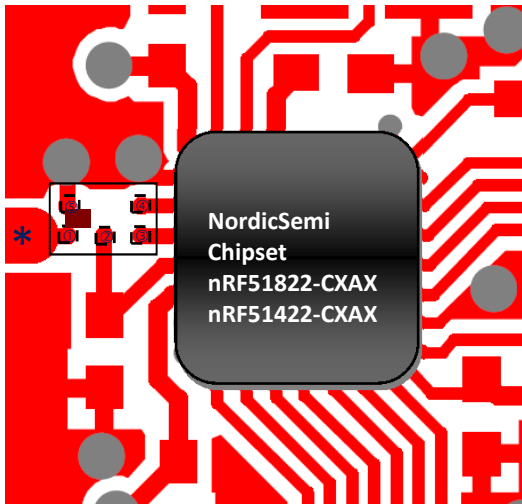
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Mounting Considerations



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

□ Land

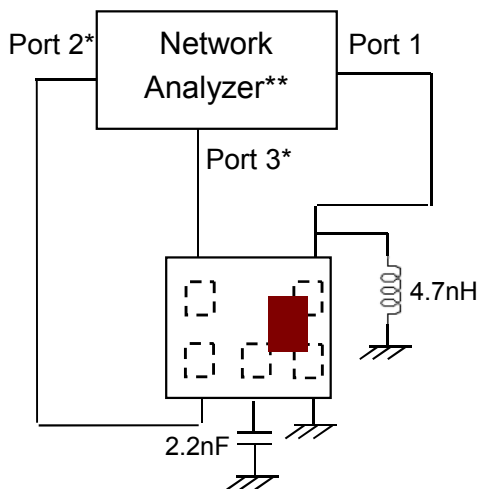
● Through-hole (ϕ 0.3)

Download the gerber files at:
www.johansontechnology.com/nordic

Would you like us to review your layout for free? Please go to this link to contact our RF team:
<http://www.johansontechnology.com/ask-a-question> select "Applications Engineering" on the drop down

If you need 2.45GHz mini-antennas to go with your compact design, go to: <http://johansontechnology.com/antennas>

Measuring Diagram



Port 1: Unbalanced Port
Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

$$\text{Amp_balance} = \text{dB}(S(2,1)/S(3,1))$$

$$\text{Phase_balance} = \text{Phase}(S(2,1)/S(3,1))$$

*Impedance for ports 2 and 3
= Conjugate to Balanced Impedance/2

**E5071C from Agilent

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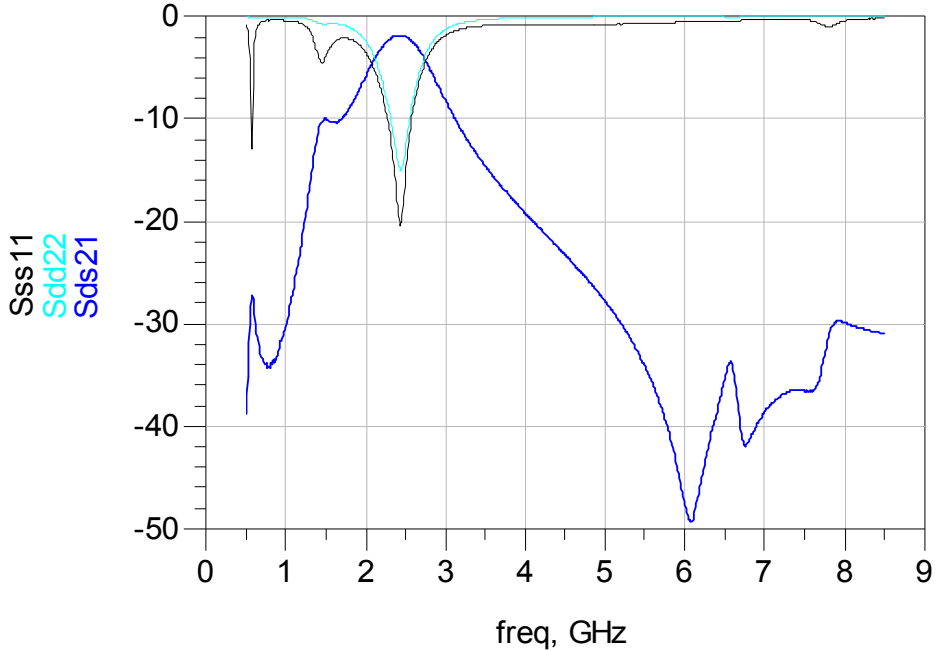
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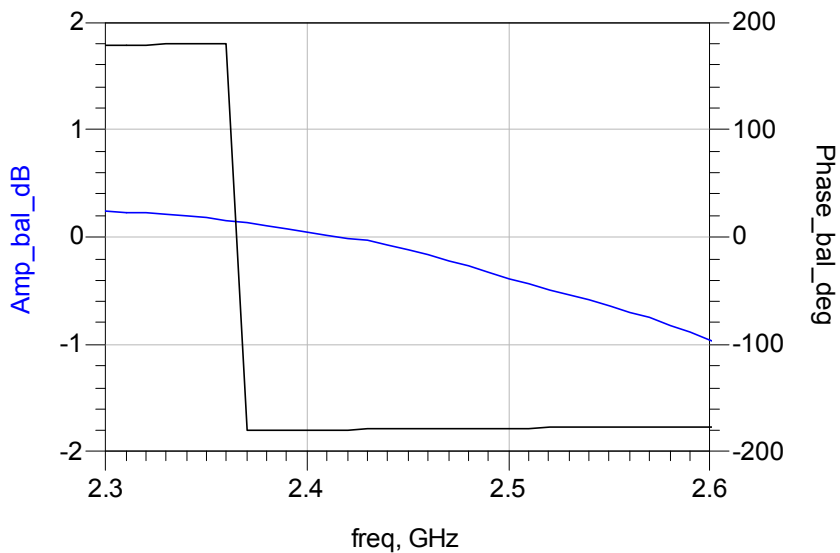
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Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



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Application Notes, Layout Files, and more

<http://johansontechnology.com/nordic>

Packaging information

www.johansontechnology.com/ipcpackaging.html

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

MSL Info

www.johansontechnology.com/technical-notes/msl-rating.html

Recommended Storage Condition and Max Shelf Life

www.johansontechnology.com/ipcstorage-shelflife

RoHS Compliance

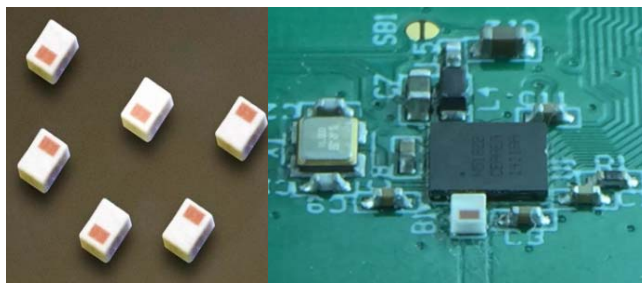
www.johansontechnology.com/technical-notes/rohs-compliance.html

Antenna layout and tuning techniques

www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services

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In-Application Image

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