

# High Frequency Ceramic Solutions

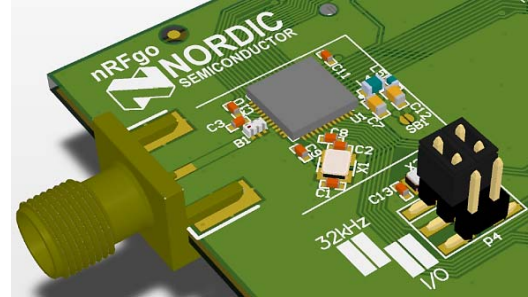
**2.45GHz Impedance Matched Balun + Band Pass Filter: Optimized for Nordic's Chipset nRF51822-QFAA and nRF51422-QFAA**

P/N 2450BM14E0003

Detail Specification: 6/11/2014

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General Specifications	
Part Number	2450BM14E0003
Frequency (MHz)	2400 - 2500
Unbalanced Impedance	50 $\Omega$ (single ended)
Differential Balanced Impedance	Impedance matched to Nordic Semi nRF51822-QFAA and nRF51422-QFAA chipsets
Average Insertion Loss when connected to the nRF51XX chipset (Active OP)	0.9dB Typ@25C 1.5dB max. (-45 to +85C)
Insertion Loss when component measured by itself (passive insertion loss)	2.1dB typ. @25C 2.5dB max. (-45 to +85C)
<b>Attenuation Differential mode (dB):</b>	
800-928 MHz	15 typ.@25°C 10 min.
1200-1500 MHz	14 typ.@25°C 10 min.
4800~5000MHz	35 typ.@25°C 20 min.
7200~7500MHz	21 typ.@25°C 18 min.
<b>Attenuation Common mode (dB):</b>	
4800~5000MHz	44 typ.@25°C 20 min.



Return Loss (dB)	15 typ. 9.5 min.
Amplitude Difference	150 $\pm$ 15deg
Reel Quantity	4,000 pcs
Operating Temperature	-40 to +85°C
Recommended Storage Conditions for unused T&R product	+5 to +35°C, Humidity: 45-75%RH, 18 mos. Max
Power Capacity	1W max.(CW)

You can download measured s-parameters of this component at: <http://johansontechnology.com/nordic>

## Part Number Explanation

P/N Suffix	Packaging Style	Termination Style	Bulk	Suffix = S	Suffix = T	Suffix = None
				Eg. 2450BM14E0003S	Eg. 2450BM14E0003T	Eg. 2450BM14E0003(T or S)

## 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 +.004/- .006	0.20 +0.1/-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

No.	Function
1	Unbalanced Port
2	GND
3	Balanced Port
4	Balanced Port
5	DC Feed
6	GND

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[www.johansontechnology.com](http://www.johansontechnology.com)

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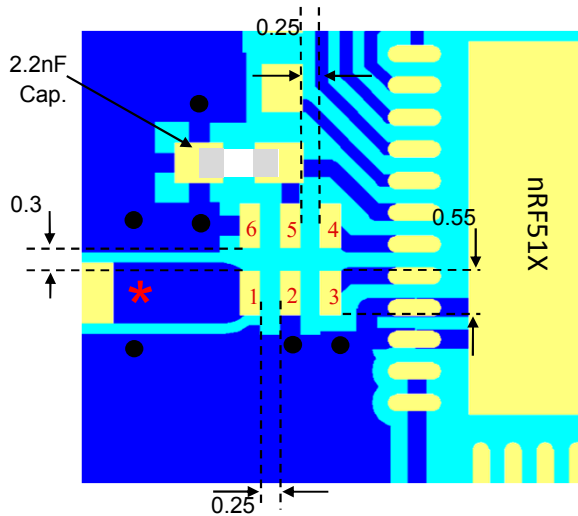
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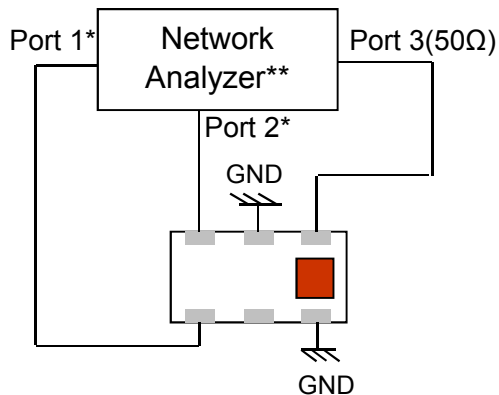
## Mounting Considerations



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

Do you need the layout/gerber files of the above? Go to: [www.johansontechnology.com/nordic](http://www.johansontechnology.com/nordic) or send us a message at: <http://www.johansontechnology.com/component/techquestion/?Itemid=407>

## Solo-Component Characterization Scheme



Port 3: Unbalanced Port  
Ports 1 and 2: Balanced Port  
 $IL = S_{ds21}$ ,  $Att_{DM} = S_{ds21}$ ,  $Att_{CM} = S_{cs21}$   
 $RL = S_{ss11}$   
 $Amp\_balance = dB(S(1,3)/S(2,3))$   
 $Phase\_balance = Phase(S(1,3)/S(2,3))$

\*Impedance for ports 1 and 2  
= Conjugate to Balanced Impedance/2  
\*\*E5071B from Agilent

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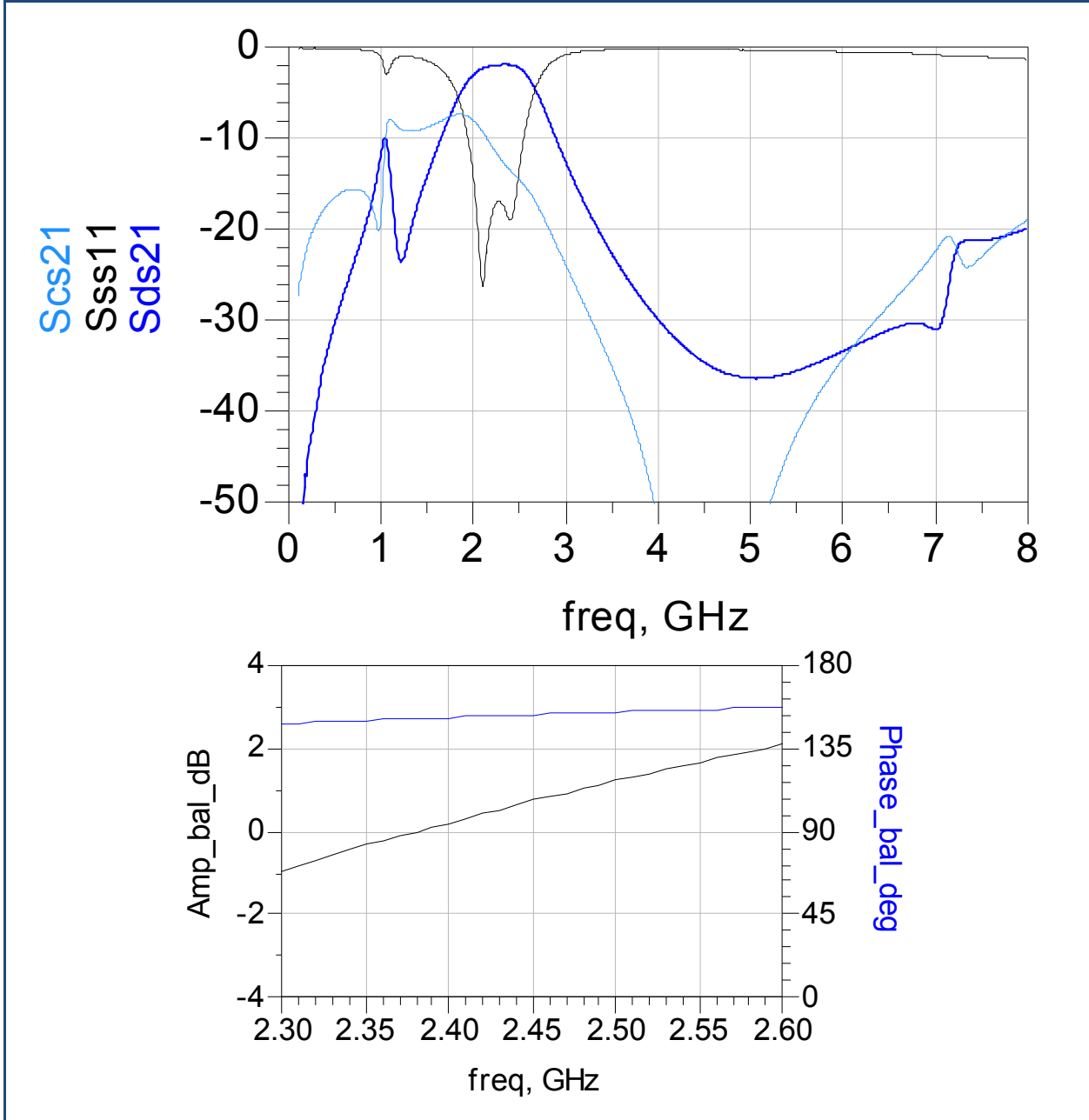
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## Typical Electrical Characteristics (T=25°C)



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## Application Notes, Layout Files, and more

<http://johansontechnology.com/nordic>

## Packaging information

[www.johansontechnology.com/ipcpackaging.html](http://www.johansontechnology.com/ipcpackaging.html)

## Soldering Information

[www.johansontechnology.com/ipcsoldering-profile](http://www.johansontechnology.com/ipcsoldering-profile)

## MSL Info

[www.johansontechnology.com/technical-notes/msl-rating.html](http://www.johansontechnology.com/technical-notes/msl-rating.html)

## Recommended Storage Condition and Max Shelf Life

[www.johansontechnology.com/ipcstorage-shelflife](http://www.johansontechnology.com/ipcstorage-shelflife)

## RoHS Compliance

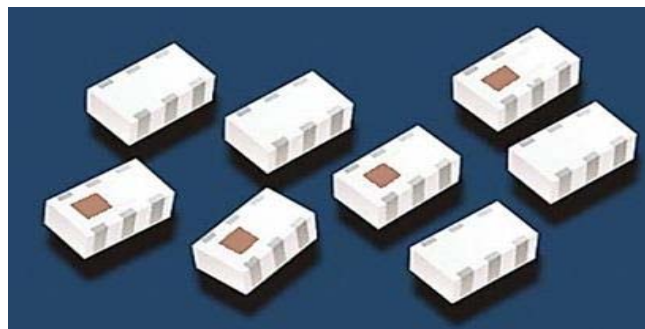
[www.johansontechnology.com/technical-notes/rohs-compliance.html](http://www.johansontechnology.com/technical-notes/rohs-compliance.html)

## Antenna layout and tuning techniques

[www.johansontechnology.com/tuning](http://www.johansontechnology.com/tuning)

## Antenna layout review, tuning, and characterization services

[www.johansontechnology.com/ipcantennaservices](http://www.johansontechnology.com/ipcantennaservices)



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