

High Frequency Ceramic Solutions

2.4GHz Impedance Matched Balun-Filter designed for TI CC2520 Chipset.

P/N: 2450BM15B0002

Detail Specification: 6/15/2015

Page 1 of 5

General Specifications

Part Number	2450BM15B0002
Frequency (MHz)	2400 - 2500
Unbalanced Impedance	50 Ω
Differential Balanced Impedance	Conjugate match to TI Chipset 2520
Insertion Loss	1.5 dB max. (-40°C to +85°C)
Insertion Loss	1.7 dB max. (-40°C to +125°C)
Return Loss (-40°C to 125°C)	9.5 dB min.
Phase Diff. (-40°C to 125°C)	180° $\pm$ 15

Differential Mode Attenuation (dB)	12 min. @ 1GHz
-40°C to 125°C	18 min. @ 4800~5000MHz
	20 min. @ 7200~7500MHz
Input Power	2W max. CW
Reel Quantity	4,000
Operating Temperature	-40°C to +125°C
Storage Temperature Range	-40°C to +85°C
Recommended Storage Conditions of unused product on T&R	+5 ~ +35 °C, Humidity 45~75%RH, 18 mos. max

Part Number Explanation

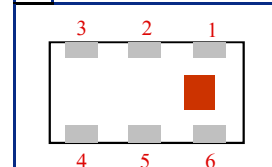
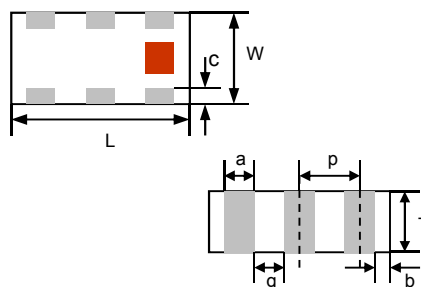
P/N	Packaging Style	Bulk	Suffix = S	Eg. 2450BM15B0002S
		T & R	Suffix = E	Eg. 2450BM15B0002E
Suffix	Termination	100% Tin	Suffix = None	Eg. 2450BM15B0002(E or S)

Terminal Configuration

No.	Function
1	Unbalanced Port (2.2nH Ind)*
2	GND
3	Balanced Port
4	Balanced Port
5	GND
6	GND

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	0.028 $\pm$ 0.004	0.70 $\pm$ 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 $\pm$ 0.004/-0.008	0.30 $\pm$ 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



*2.2 nH Ceramic Chip inductor required on unbalanced port. See page 2 for details

Mounting Considerations

Mount these devices with brown mark facing up. Units: mm

* Line width should be designed to provide 50 Ω impedance matching characteristics.

Note: No DC Blocking Capacitor required (internal)

Legend:

- Solder Resist
- Land
- Through-hole (ϕ 0.3)

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 4.2

2015 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

2.4GHz Impedance Matched Balun-Filter designed for TI CC2520 Chipset.

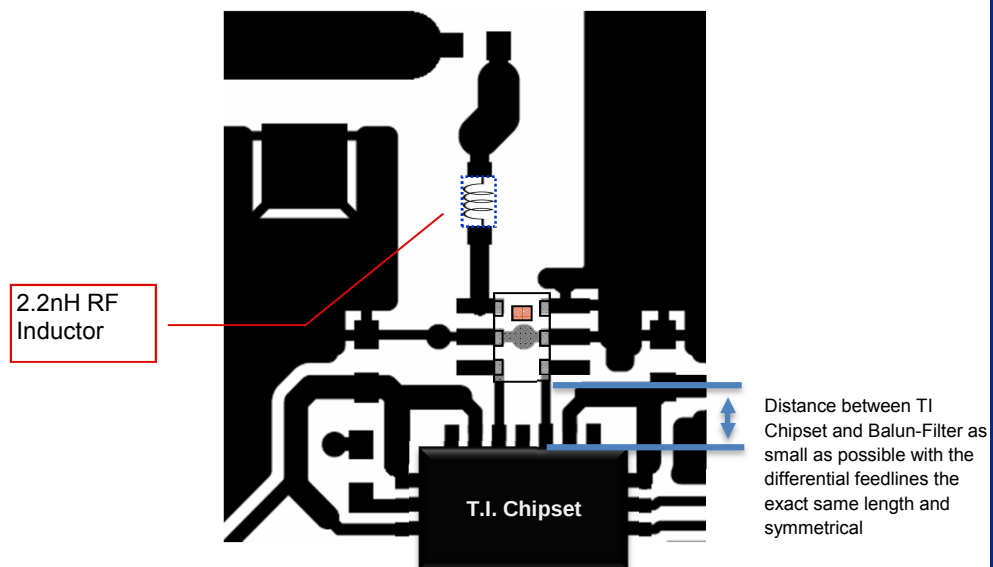
P/N: 2450BM15B0002

Detail Specification: 6/15/2015

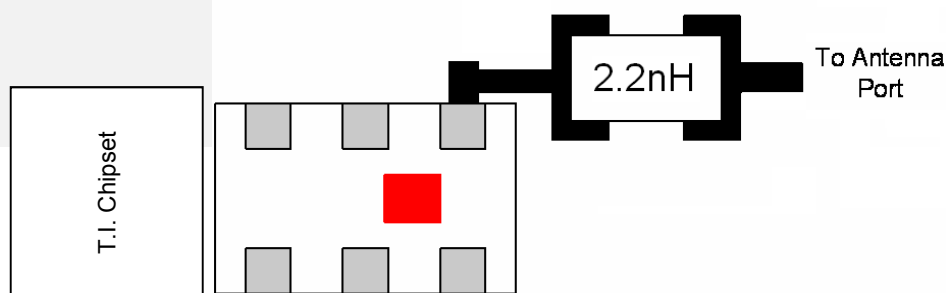
Page 2 of 5

Mounting Considerations

Mounting layout for reference only.
Mount device with colored mark facing up.
For detailed dimensions, please contact Johanson Technology at:
<http://www.johansontechnology.com/ask-a-question>
Or visit TI's CC2520 website:
<http://focus.ti.com/docs/prod/folders/print/cc2520.html>



Matching Component P/N: 2.2nH Inductor: L-07C2N2SV6T
<http://www.johansontechnology.com/ceramic-inductors.html>



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.

High Frequency Ceramic Solutions

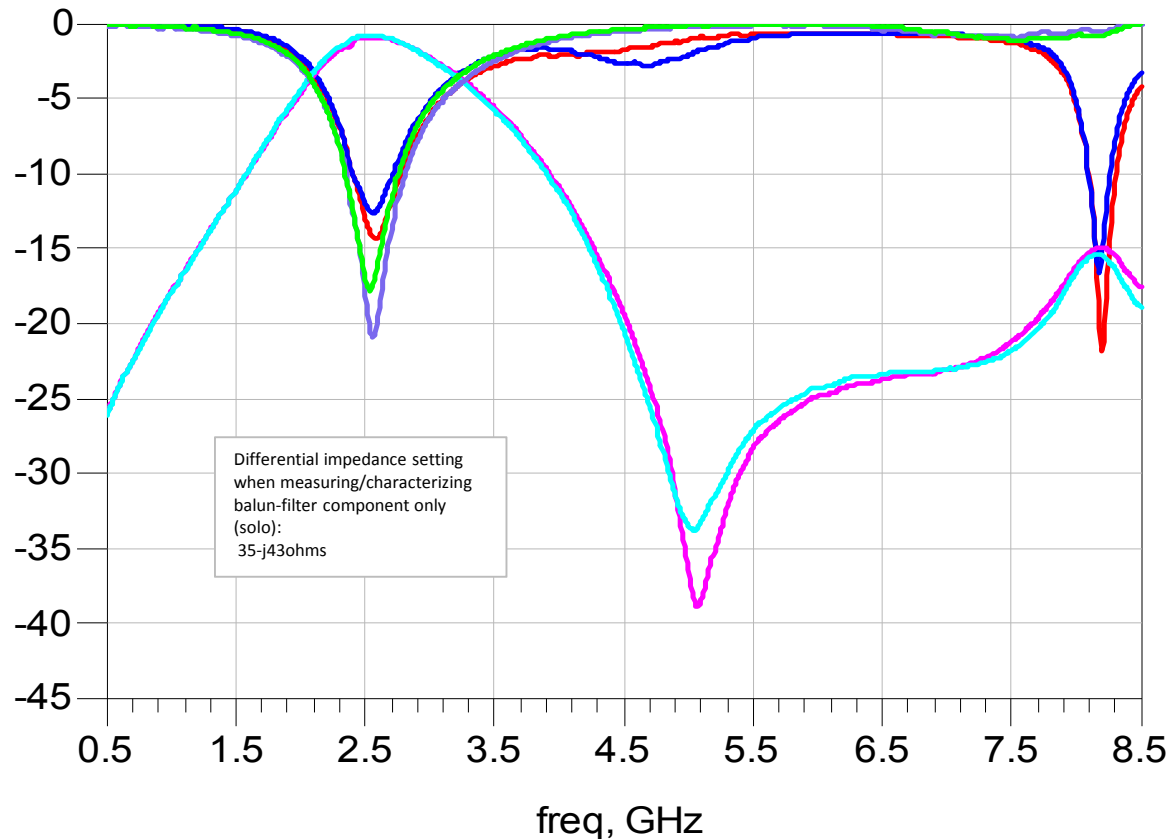
2.4GHz Impedance Matched Balun-Filter designed for TI CC2520
Chipset.

P/N: 2450BM15B0002

Detail Specification: 6/15/2015

Page 3 of 5

Typ 25C and 125C RF Plot of Balun-Filter component only (solo)



25C Unbalanced RL

25C Balanced Return Loss

25C Insertion Loss/Attenuation (Differential Mode)

125C Unbalanced RL

125C Balanced Return Loss

125C Insertion Loss/Attenuation (Differential Mode)

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 4.2

2012 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

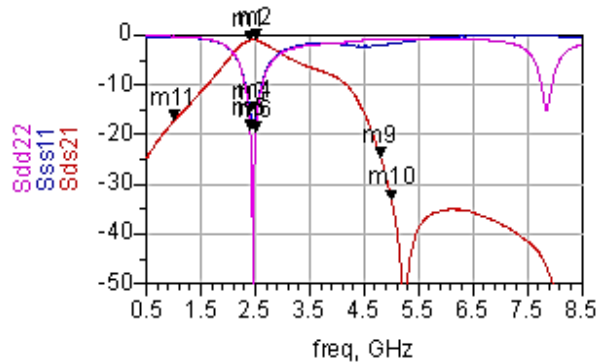
2.4GHz Impedance Matched Balun-Filter designed for TI CC2520
Chipset.

P/N: 2450BM15B0002

Detail Specification: 6/15/2015

Page 4 of 5

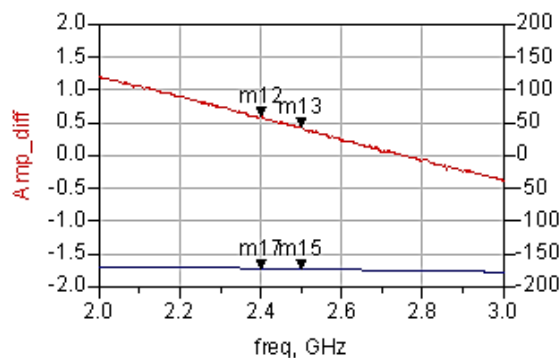
Typical Electrical Performance (T=25°C) when balun-filter connected to TI CC2520 + 2.2nH inductor in series



Differential impedance setting when
simulating the balun-filter component
connected to TI CC2520 + 2.2nH inductor
in series:
47-j34ohms

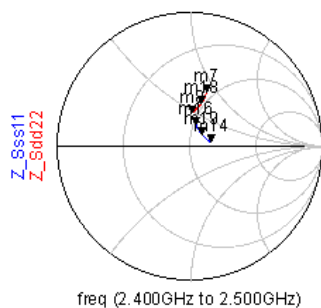
m1	freq=2.400GHz Sds21=-1.031
m2	freq=2.500GHz Sds21=-0.984
m9	freq=4.800GHz Sds21=-24.753
m10	freq=5.000GHz Sds21=-33.093
m11	freq=1.000GHz Sds21=-17.227

m3	freq=2.400GHz Sss11=-15.664
m4	freq=2.500GHz Sss11=-15.482
m5	freq=2.400GHz Sdd22=-19.050
m6	freq=2.500GHz Sdd22=-19.495



m12	freq=2.400GHz Amp_diff=0.602
m13	freq=2.500GHz Amp_diff=0.442

m17	freq=2.400GHz Phase_diff=-171.751
m15	freq=2.500GHz Phase_diff=-172.415



m7	freq=2.400GHz Z_Sdd22=0.427 / 72.613 impedance = 44.083 + j43.972
m8	freq=2.500GHz Z_Sdd22=0.253 / 86.418 impedance = 45.335 + j24.449
m18	freq=2.450GHz Z_Sdd22=0.332 / 75.072 impedance = 47.371 + j34.155

m14	freq=2.400GHz Z_Sss11=0.165 / 11.169 impedance = 69.105 + j4.534
m16	freq=2.500GHz Z_Sss11=0.168 / 74.863 impedance = 51.662 + j17.268
m19	freq=2.450GHz Z_Sss11=0.126 / 44.208 impedance = 58.899 + j10.499

Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 4.2

2012 Johanson Technology, Inc. All Rights Reserved

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Signal Conditioning](#) category:

Click to view products by [Johanson](#) manufacturer:

Other Similar products are found below :

[PD0409J5050S2HF](#) [AFS14A35-1591.50-T3](#) [AFS20A20-1227.60-T3](#) [JP510S](#) [LFB322G45SN1A504](#) [SF2159E](#) [MAPDCC0005](#)
[BD0810N50100AHF](#) [DC0710J5005AHF](#) [DC2327J5005AHF](#) [X3C19F1-20S](#) [XC3500P-20S](#) [CDBLB455KCAX39-B0](#) [PD0922J5050D2HF](#)
[1E1305-3](#) [1F1304-3S](#) [BD1222J50200AHF](#) [BD1722J50100AHF](#) [BD0810J50150AHF](#) [BD1722J50200AHF](#) [TP-101-PIN](#) [T-1000-N](#) [XC0900P-](#)
[10S](#) [XC0900B-30S](#) [11305-10](#) [5962-9091202MXA](#) [X3C06A4-03S](#) [DSS-333-PIN](#) [PD2425J5050S2HF](#) [B39242B4360P810](#)
[B39781B8005P810](#) [B39881B8013P810](#) [B39771B8035P810](#) [B39741B8012P810](#) [B39212B8033P810](#) [B39162B8636P810](#) [SF2225E](#) [SF2275E](#)
[SF2395E](#) [SF2188D](#) [LFB182G45BG7D948](#) [SF2201E](#) [DC1722J5005AHF](#) [B39272B8818P810](#) [SF2253E](#) [SF2202E](#) [SF2182D](#) [SF2211E](#)
[SF2240E](#) [SF2307D](#)