"High Frequency Ceramic Solutions"

2.45GHz Impedance Matched Balun-Filter for Atmel Chipset AT86RF232 and AT86RF233. Platforms: ATmega256/128/64RFR2, Zigbit 256RFR2, Zigbit RF233, ZigBit RF233+FEM, Extension RF233, USB RF233, SAM R21. ATMEGA256RFR2 Xplained Pro.

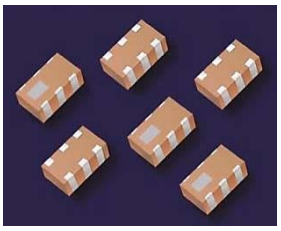
P/N 2450BM15A0015

Detail Specification: 10/6/2014

Impedance matching network, balun, and harmonic filter all in one EIA 0805 package!

General Specifications

Part Number	2450BM15A0015
Frequency (MHz)	2400~2500
Unbalanced Impedance	50 Ω
Differential Balanced Impedance	**Impedance match to:** Atmel AT86RF232, AT86RF233, ATmega256/128/64RFR2, Zigbit 256RFR2, Zigbit RF233, ZigBit RF233+FEM, Extension RF233, USB RF233, SAM R21
Insertion Loss (-40C to +85C)	1.1dB Typ, 1.5 dB max.
Insertion Loss (-40C to +125C)	1.3dB Typ, 1.9 dB max.
Return Loss	9.5 min.
Phase Difference	180 ± 10 (deg)
Amplitude Difference	2.0 dB max.
Power Capacity	2 Watt max. (CW)
Differential Mode Attenuation	20dB min. @2Fo 20dB min. @3Fo
Common Mode Rejection	20dB min. @2Fo



Solder Paste	SAC 305 type is recommended
Operating Temp.	-40 to +125°C
Storage Temp	-40 to +85°C
Recommended Storage Conditions for unused product on T&R*	+5C to +35C, Humidity 45~75%RH
Reel Quanity	4,000
Storage Period	18 months max.*

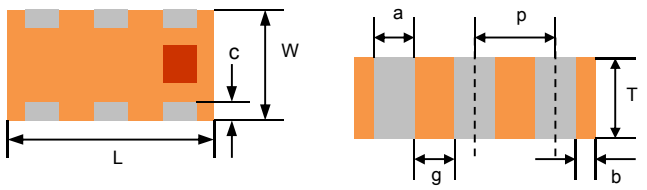
*18 months in vacuum sealed bag and 1 week cumulative after opened. For more info and proper handling go to: www.johansontechnology.com/silverleads

Part Number Explanation

P/N Suffix	**Packing Style**	Bulk (Loose)	Suffix = S	eg. 2450BM15A0015S
		T & R	Suffix = E	eg. 2450BM15A0015E
	Termination style	AgPt	Suffix = None	eg. 2450BM15A0015 (E or S)
	Evaluation Board		2450BM15A0015-EBSMA	

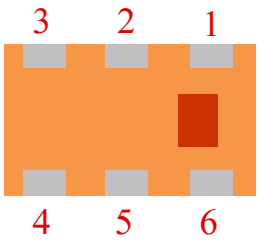
Mechanical Dimensions

	In	mm
L	0.079 ± 0.004	2.00 ± 0.10
W	0.049 ± 0.004	1.25 ± 0.10
T	0.031 ± 0.004	0.80 ± 0.10
a	0.012 ± 0.004	0.30 ± 0.10
b	0.008 ± 0.004	0.20 ± 0.10
c	0.012 +.004/-.008	0.30 +0.1/-0.2
g	0.014 ± 0.004	0.35 ± 0.10
p	0.026 ± 0.002	0.65 ± 0.05

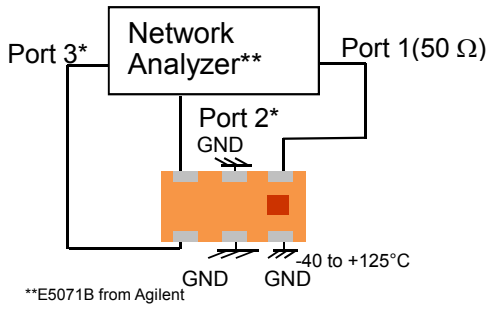


Terminal Configuration

No.	Function
1	Unbalanced Port (50 Ω)
2	GND
3	Balanced Differential Port
4	Balanced Differential Port
5	GND
6	GND



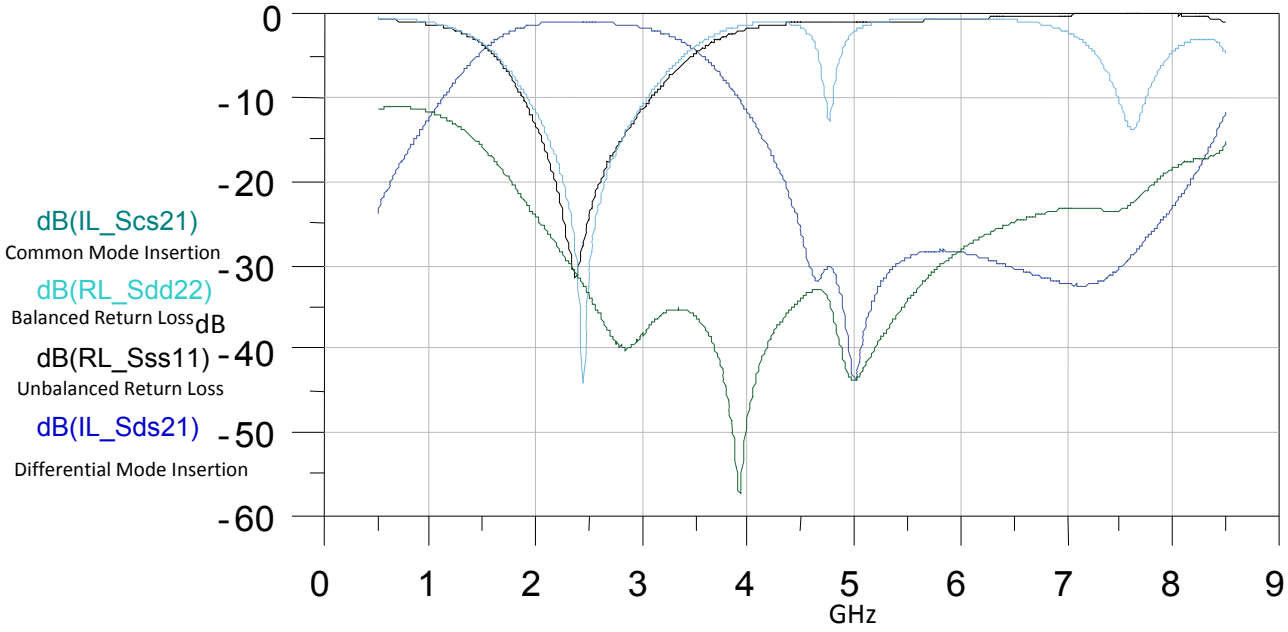
Measuring Diagram



Port 1:Unbalanced Port
Ports 2 and 3: Balanced Port
IL=Sds21
RL=Sss11
Amp_balance = dB(S(2,1)/S(3,1))
Phase_balance = Phase(S(2,1)/S(3,1))
*Impedance for ports 2 and 3
= Conjugate to Balanced Impedance/2

Typical Electrical Performance (T=25°C)

Insertion and Return Loss



Impedance matching network, balun, and harmonic filter all in one EIA 0805 package!

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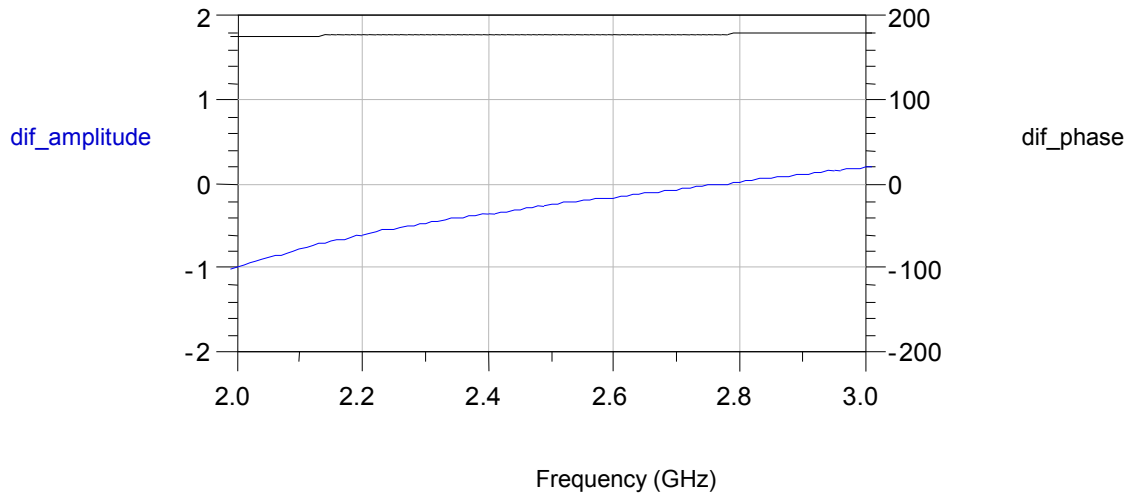
Typical Electrical Performance (T=25°C)

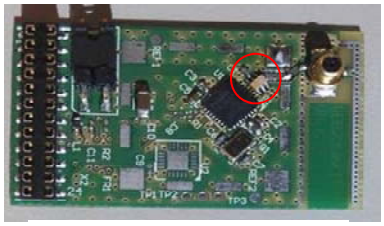
Amplitude and Phase Balance



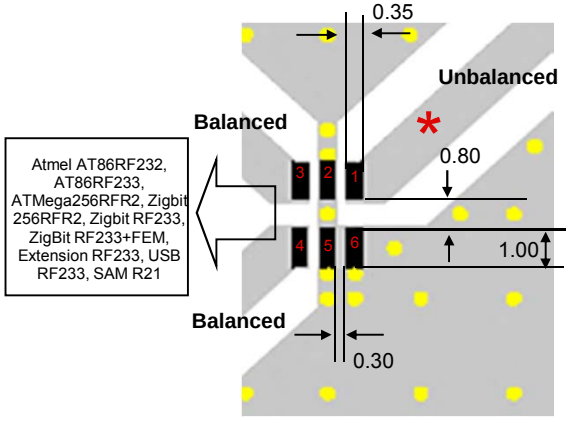
Mounting Considerations

Mount these devices with brown mark facing up.

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



REB233mkII V8.6.1 EVB Example



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For layout/gerber files for this and other Atmel reference designs, go to: www.johansontechnology.com/atmel

Component Handling
www.johansontechnology.com/silverleads

Packaging information
www.johansontechnology.com/ipcpackaging.html

Soldering Information
www.johansontechnology.com/ipcsoldering-profile

Antenna layout and tuning techniques
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Pad metalization information
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MSL Info
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Recommneded Storage Condition and Max Shelf Life
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Application Notes, Layout Files, and more
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