

# "High Frequency Ceramic Solutions"

2.45 GHz Harmonic Filter-Balun Optimized for AT86RF230/231 and ATmega128RFA1 P/N 2450FB15L0001

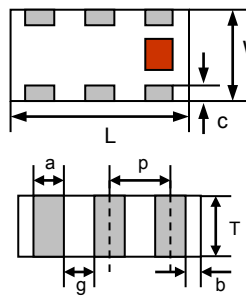
Detail Specification: 11/10/2014

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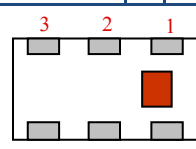
General Specifications			
Part Number	2450FB15L0001	Differential Mode Attenuation (dB)	20 min.@ 4800~5000MHz 20 min.@ 7200~7500MHz
Frequency (MHz)	2400~2500	Common Mode Attenuation (dB)	20 min.@ 4800~5000MHz
Unbalanced Impedance	50 Ω	Operating Temperature	-40°C to +125°C
Balanced Impedance	Impedance match to AT86RF230/231 and ATmega128RFA1	Storage Conditions	+5 to +35°C, Humidity: 45-75%RH, 18 mos. Max
Insertion Loss	1.5 dB max.	Input Power	2 Watts max. (CW)
Return Loss	9.5 dB min.	Reel Quantity	4,000
Phase Difference	180° ± 10		
Amplitude Difference	2.0 dB max.		

\* 18 months in vacuum sealed bag and 1 week after opened. For more info go to [www.johansontechnology.com/silverleads](http://www.johansontechnology.com/silverleads)

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

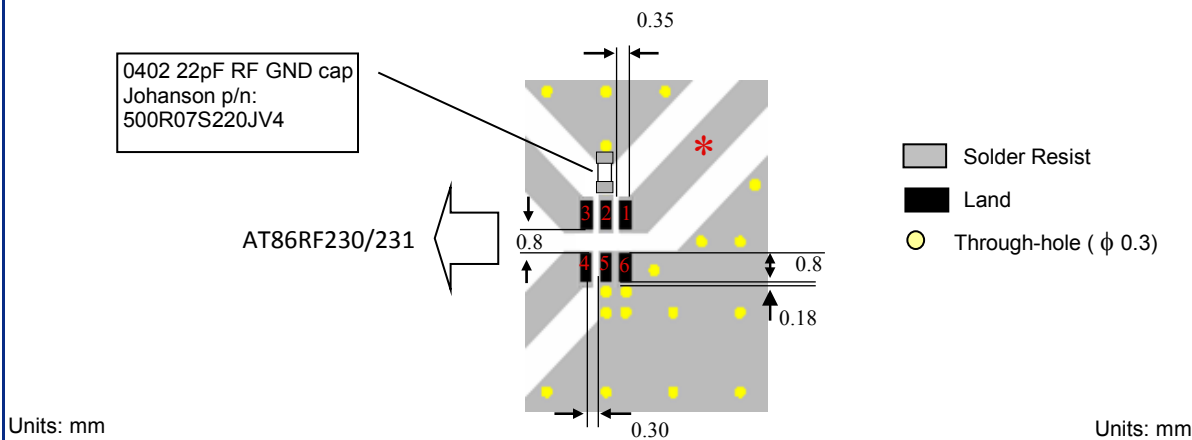


Terminal Configuration			
No.	Function	No.	Function
1	Unbalanced Port	4	Balanced Port
2	DC Feed + RF GND	5	GND
3	Balanced Port	6	GND



## Balun Layout with AT86RF230/1

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



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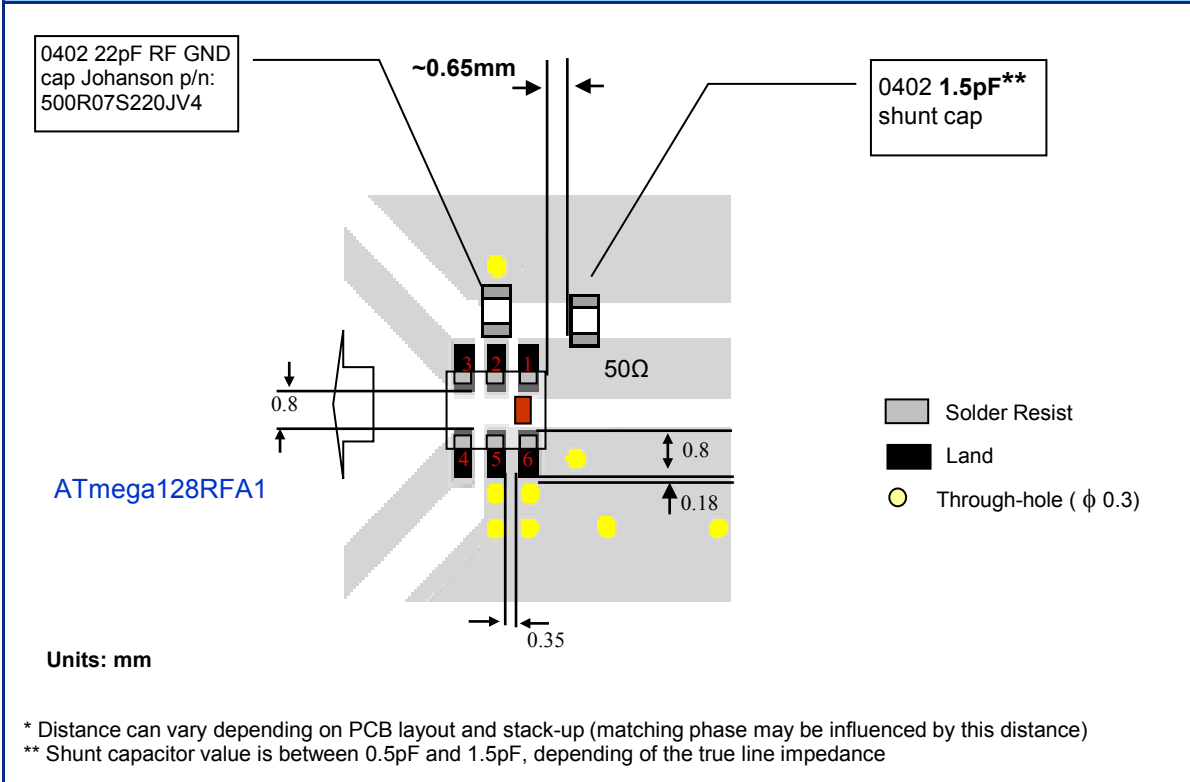
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## Balun Layout with ATmega128RFA1



## Part Numbering Scheme

P/N Suffix	Packaging Style	Bulk	Suffix = S	Eg. 2450FB15L0001S
		T & R	Suffix = E	Eg. 2450FB15L0001E
	Termination Style	AgPt	Suffix = None	Eg. 2450FB15L0001(E or S)
	Evaluation Board	2450FB15L0001-EB1SMA		

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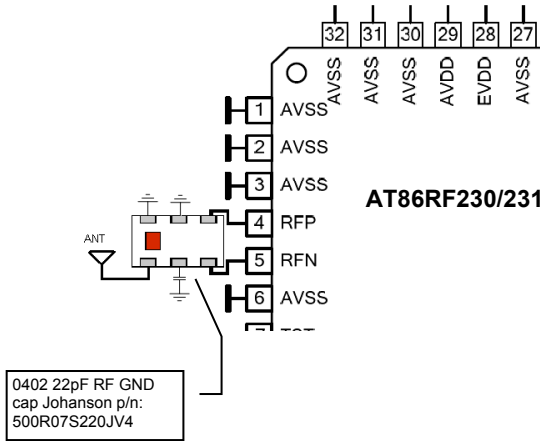
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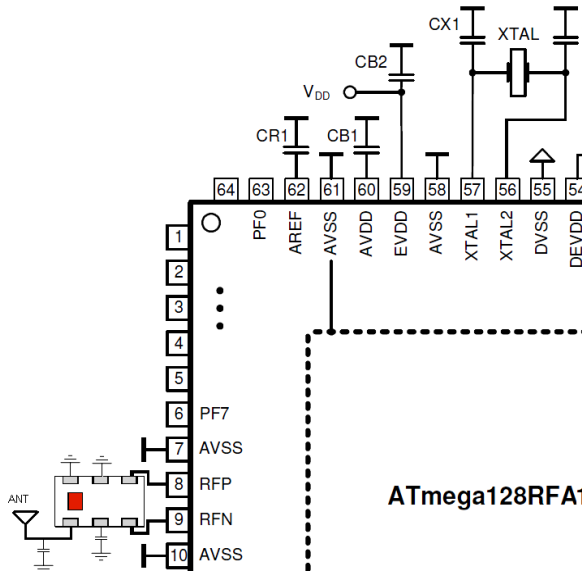
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## AT86RF230/231 With DC feed graphical representation:



See last page for filtering performance

## ATmega128RFA1 With DC feed graphical representation:



See last page for filtering performance

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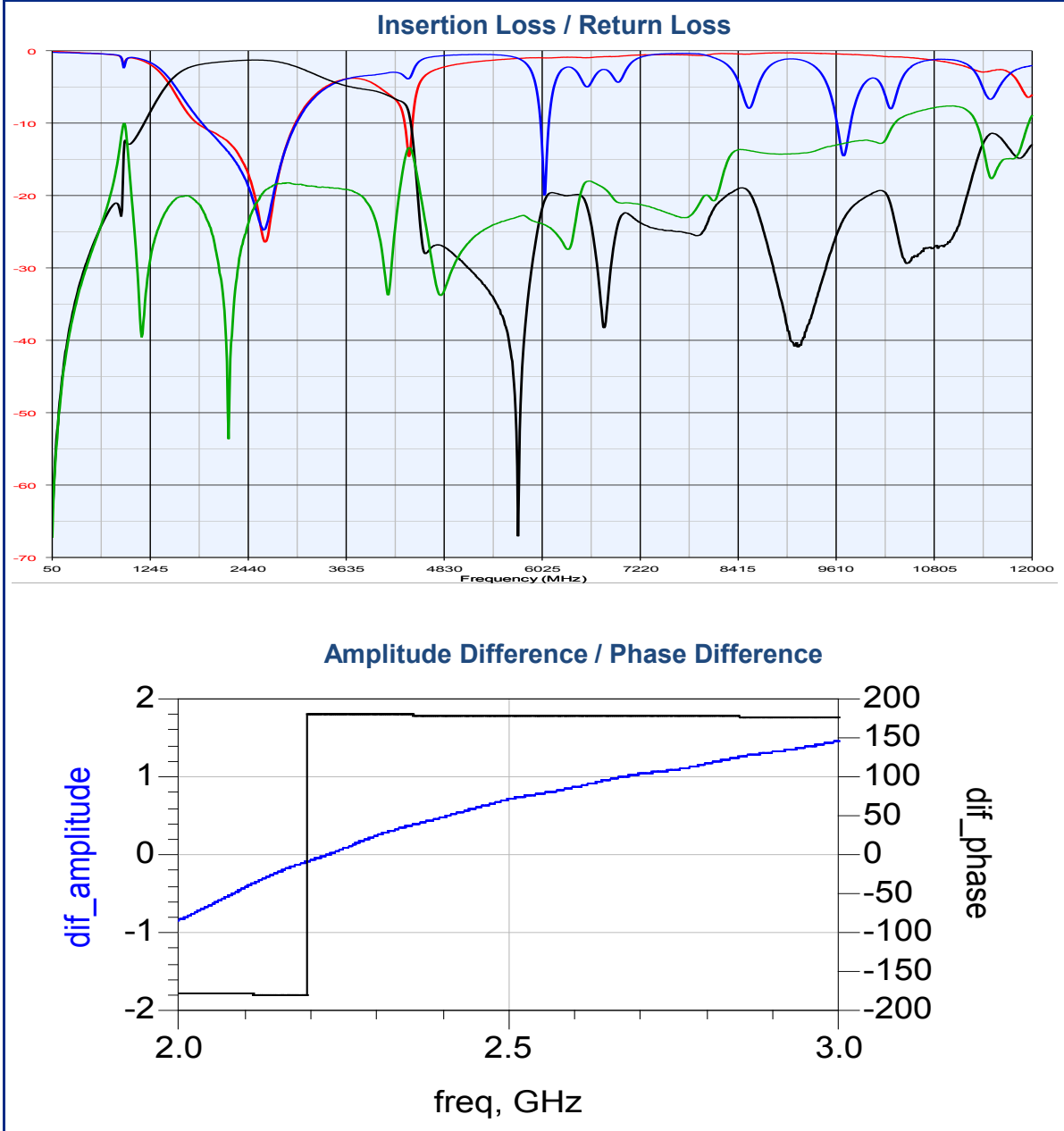
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AT86RF230/231 With DC feed graphical representation:



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## RoHS Compliance

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

## 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)

## 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)

## Pad metalization information

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

## 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)

## Application Notes, Layout Files, and more

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

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