"High Frequency Ceramic Solutions"

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

Detail Specification: 06/29/2010

General Specifications

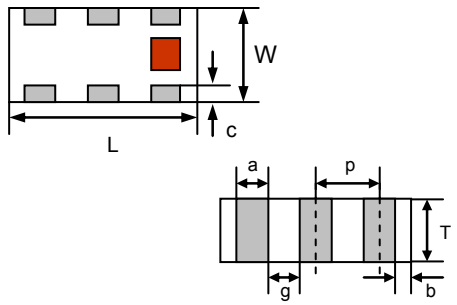
Part Number	2450FB15L0001
Frequency (MHz)	2400~2500
Unbalanced Impedance	50 Ω
Balanced Impedance	Impedance match to AT86RF230/231 and ATmega128RFA1
Insertion Loss	1.5 dB max.
Return Loss	9.5 dB min.
Phase Difference	180° ± 10
Amplitude Difference	2.0 dB max.

Differential Mode Attenuation (dB)	20 min.@ 4800~5000MHz
	20 min.@ 7200~7500MHz
Common Mode Attenuation (dB)	20 min.@ 4800~5000MHz
Operating Temperature	-40 to +85°C
Storage Temperature	+5 to +35°C, Humidity: 45-75%RH, 12 mos. Max
Input Power	2 Watts max.
Reel Quantity	4,000

* 12 months in vacuum sealed bag and 1 week after opened.

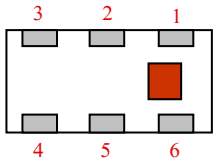
Mechanical Dimensions

	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



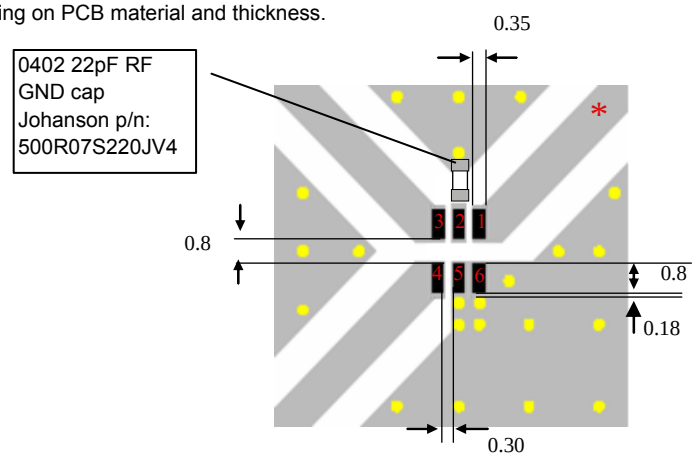
Terminal Configuration

No.	Function
1	Unbalanced Port
2	GND or (DC Feed + RF GND)
3	Balanced Port
4	Balanced Port
5	GND
6	GND



Balun Layout with AT86RF230/1

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



Solder Resist

Land

Through-hole (ϕ 0.3)

Units: mm

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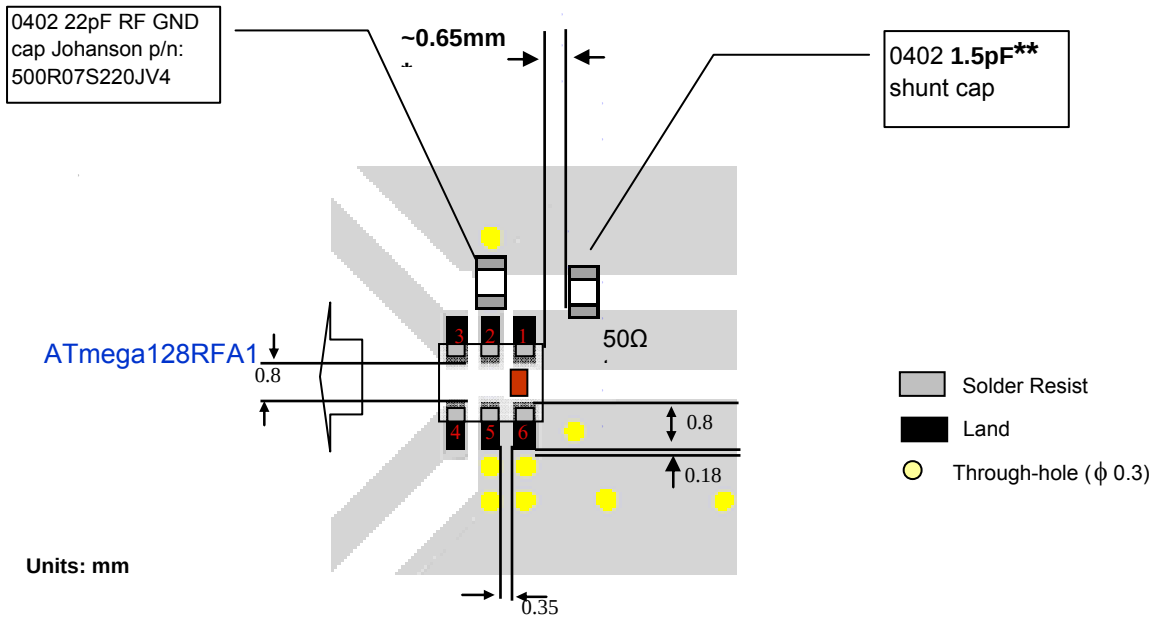
Balun Layout with ATmega128RFA1



Units: mm

*** Distance can vary depending on PCB layout and stack-up (matching phase may be influenced by this distance)**

**** Shunt capacitor value is between 0.5pF and 1.5pF, depending of the true line impedance**

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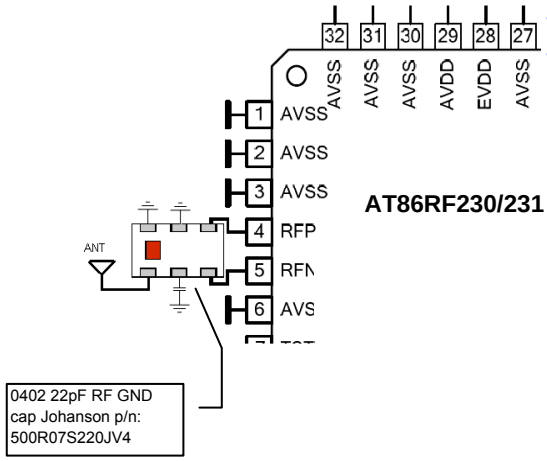
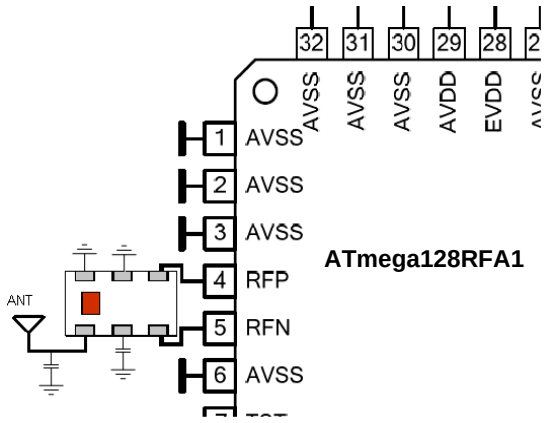
AT86RF230/231 With DC feed graphical representation:



AT86RF230/231

See last page for filtering performance

ATmega128RFA1 With DC feed graphical representation:



ATmega128RFA1

See last page for filtering performance

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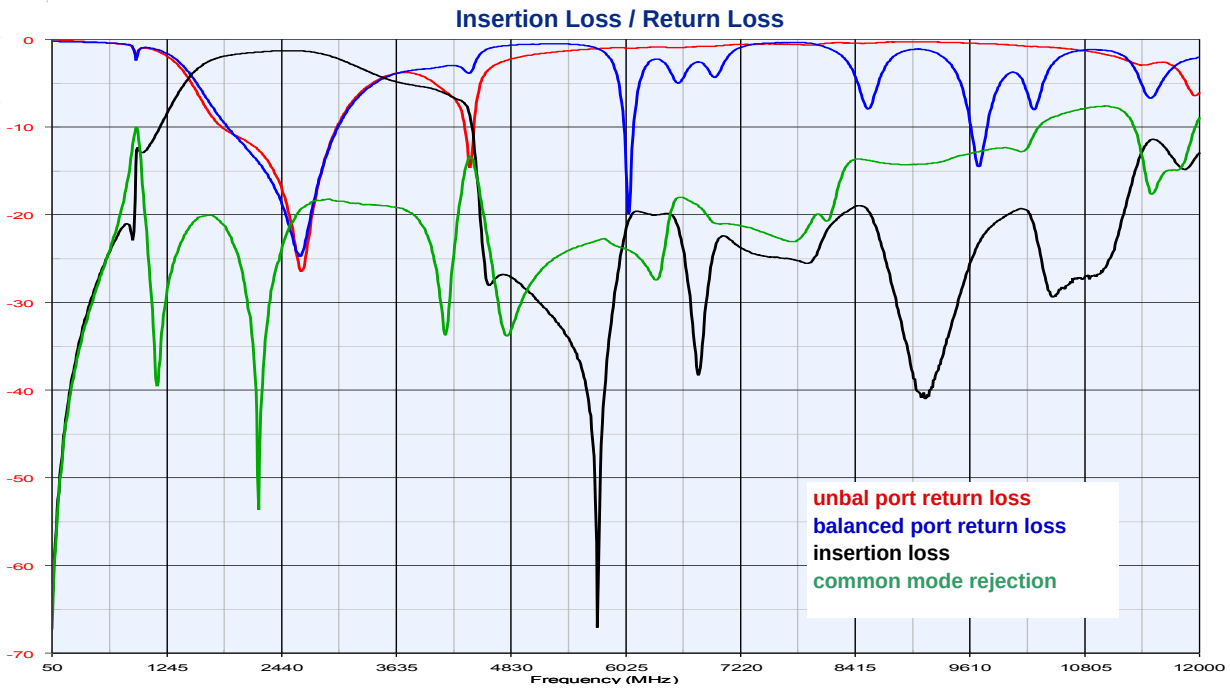
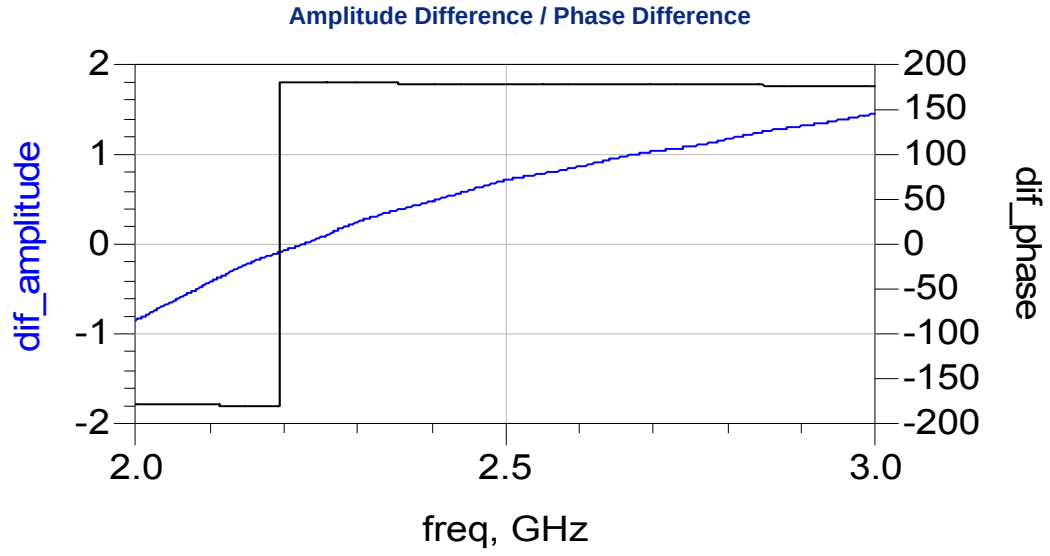
Detail Specification: 06/29/2010

Typical Electrical Performance (T=25°C)





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