# High Frequency Ceramic Solutions

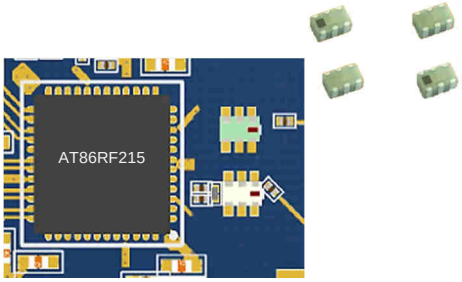
**Atmel AT86RF215 868/915/928 MHz Impedance Matched Balun + LPF (FCC/ETSI compliant) integrated Passive Component** **P/N: 0896BM15E0025**

Detail Specification: 3/10/2016 

For the 2.4G Balun-filter, go to: www.johansontechnology.com/atmel

## General Specifications

| | |
|---|---|
| **Part Number** | 0896BM15E0025 |
| **Frequency (MHz)** | 863-928 |
| **Unbalanced Impedance** | 50 |
| **Balanced Impedance** | Conjugate match to Atmel's AT86RF215, AT86RF215M, AT86RF215IQ chipsets |
| **Insertion Loss** | 1.25dB Typ. (1.6dB max.) |
| **Return Loss** | 2.0 max. |
| **Phase Diff.** | 180±10 |
| **Amp. Diff.** | 2.0 max. |
| **Attenuation** | 40Typ. 30 min.@ 1726~1856 MHz<br>45Typ. 34 min.@ 2589~2784 MHz<br>45Typ. 42 min.@ 3452~3712 MHz<br>45Typ. 34 min.@ 4315~4640 MHz<br>54Typ. 31 min.@ 5178~5568 MHz |
| **Power Capacity** | 1W max. CW |



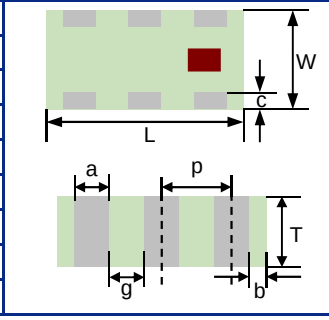

| | |
|---|---|
| **Q'ty/Reel** | 4,000 pcs |
| **Operating Temperature** | -40°C to +85°C |
| **Storage Temperature Range** | -40°C to +85°C |
| **Storage Period** | 18 months max |
| **Recommended Storage Conditions for unused T&R product** | +5 ~ +35 °C, Humidity 45~75%RH, 18 mos. max |

## Part Number Explanation

| | | | | |
|---|---|---|---|---|
| **P/N Suffix** | **Packing Style** | Bulk | Suffix = S | eg. 0896BM15E0025S |
| | | T & R | Suffix = E | eg. 0896BM15E0025E |
| | | 100% Tin | Suffix = None | eg. 0896BM15E0025(E or S) |

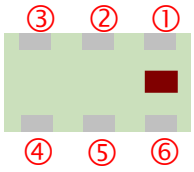
## Mechanical Dimensions

| | In | mm |
|---|---|---|
| **L** | 0.079 ± 0.004 | 2.00 ± 0.10 |
| **W** | 0.049 ± 0.004 | 1.25 ± 0.10 |
| **T** | 0.037 ± 0.004 | 0.95 ± 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 | GND | 5 | GND |
| 3 | Balanced Port | 6 | GND |




Would you like us to review your layout for free and, if needed, recommend you an small antenna solution for your application?
Contact us at:
www.johansontechnology.com/ask-a-question

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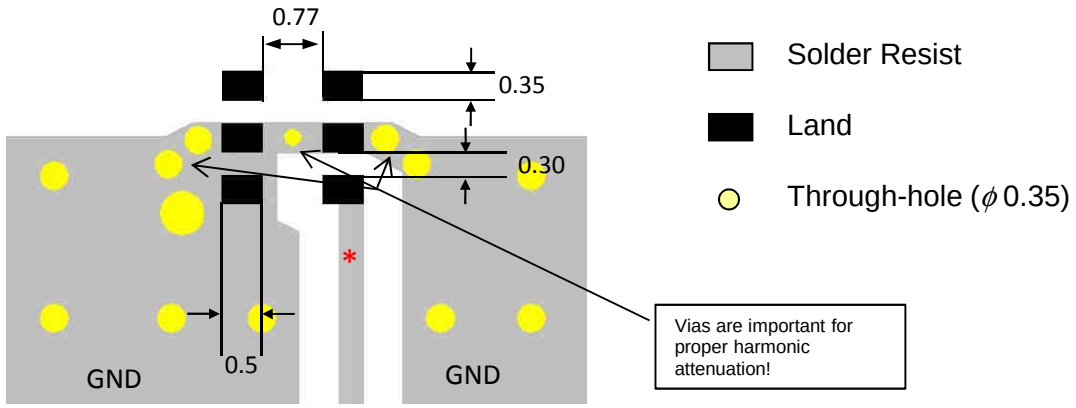
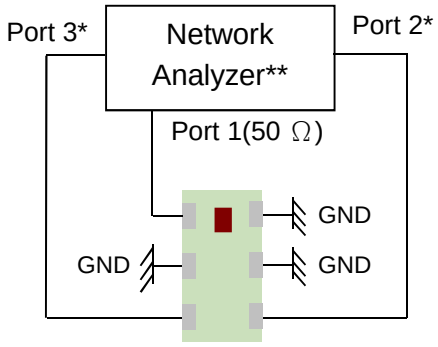
## Pad-Soldermask Guidelines




* Line width should be designed to match 50ohm characteristic impedance, depending on PCB material and thickness. Grounded CPWG is recommended.

Schematic and layout (gerber) file download info at: www.johansontechnology.com/atmel

## Measurement Diagram




Port 1:Unbalanced Port
Ports 2 and 3: Balanced Port
IL=Sds21
RL=Sss11
Amp_diff = dB(S(2,1)/S(3,1))
Phase_diff = Phase(S(2,1)/S(3,1))

*Impedance for ports 2 and 3 = Balanced Impedance/2
**E5071B from Agilent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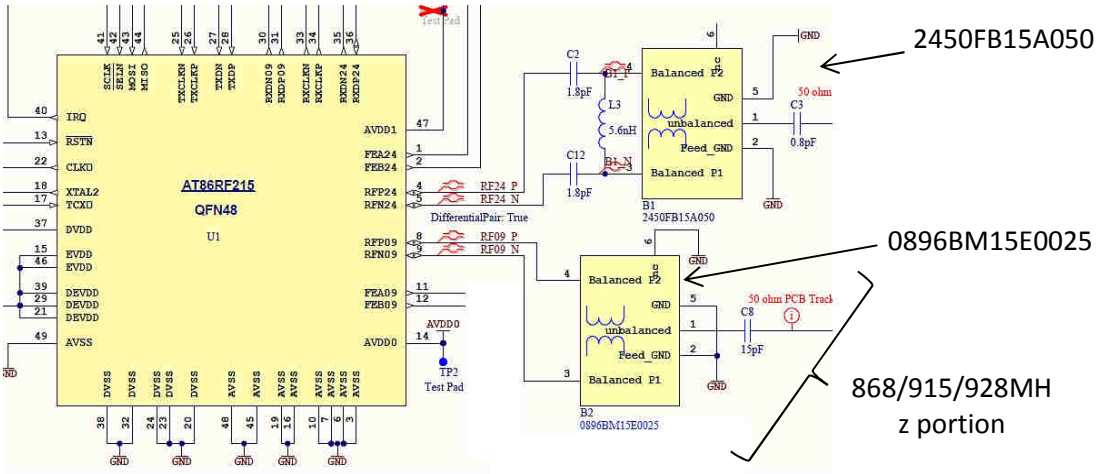
## Schematic

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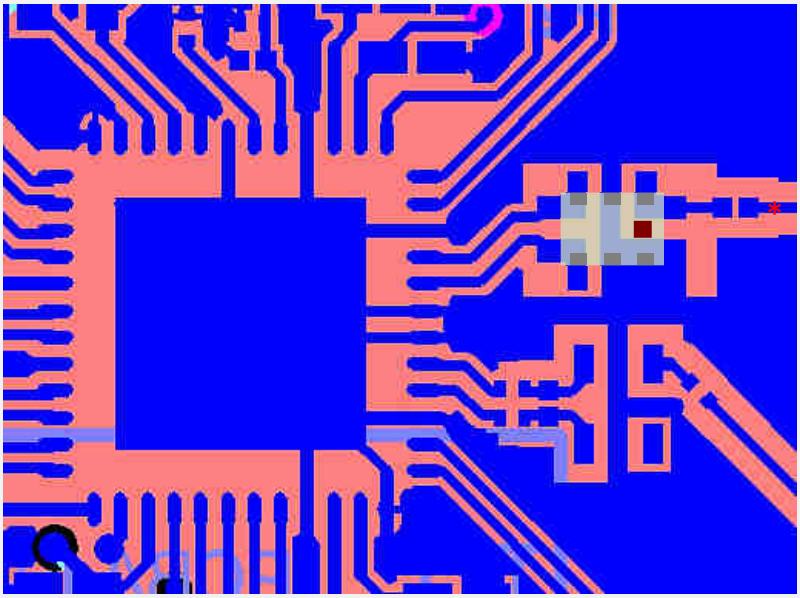
## Layout Mounting Considerations



* Line width should be designed to match 50ohm characteristic impedance, depending on PCB material and thickness. Grounded CPWG is recommended.

868/915/928MHz portion

2.4G portion

Get the 2.4GHz component info at:

Download the complete layout file at at: www.johansontechnology.com/atmel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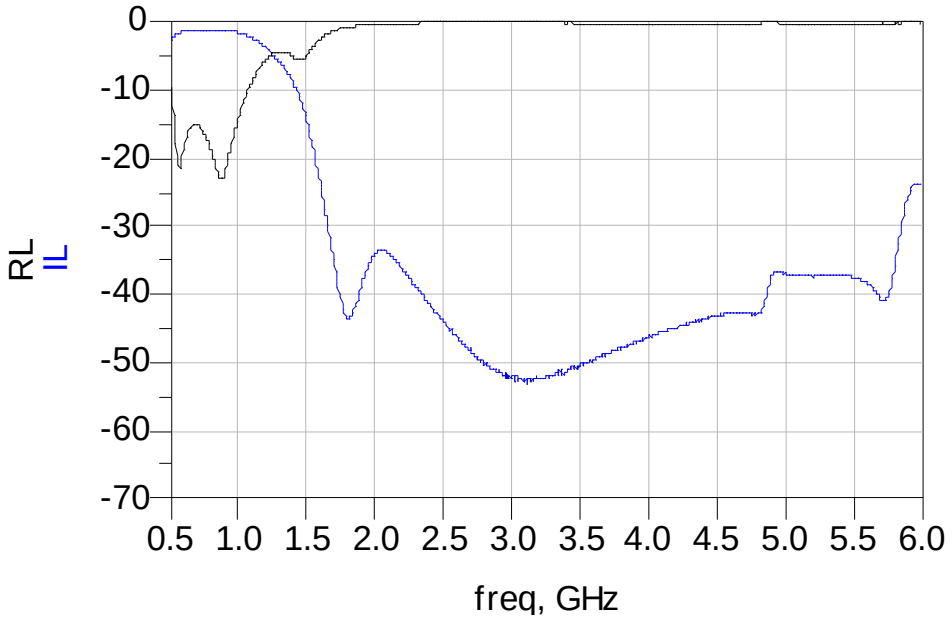
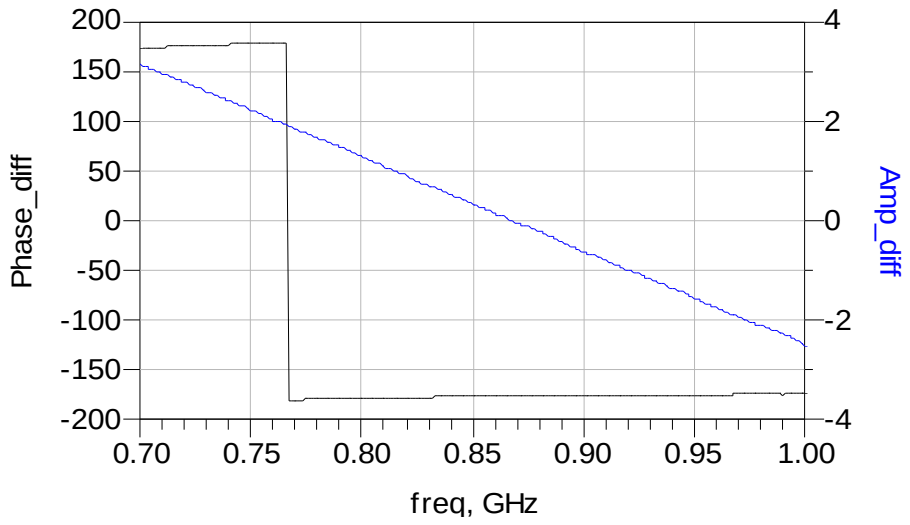
## Typical Electrical Characteristics (T=25°C)





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| **Application Notes, Layout Files, and more** |
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| **RoHS Compliance** |
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| www.johansontechnology.com/technical-notes/rohs-compliance.html |

| **Soldering Information** |
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| www.johansontechnology.com/ipcsoldering-profile |

| **Antenna layout and tuning techniques** |
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| www.johansontechnology.com/tuning |

| **Antenna layout review, tuning, and characterization services** |
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| www.johansontechnology.com/ipcantennaservices |

| **MSL Info** |
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| www.johansontechnology.com/technical-notes/msl-rating.html |

| **Recommended Storage Condition and Max Shelf Life** |
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| **Packaging information** |
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| www.johansontechnology.com/ipcpackaging.html |

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