

High Frequency Ceramic Solutions

Atmel AT86RF215 868/915/928 MHz Impedance Matched Balun + LPF
(FCC/ETSI compliant) integrated Passive Component

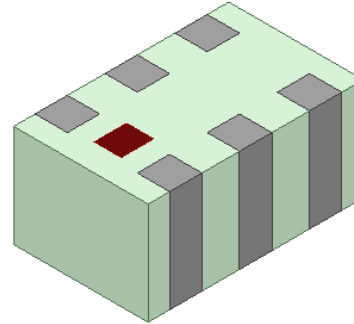
P/N: 0896BM15E0025

Detail Specification: 4/23/2018

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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 |
| Power Capacity | 1W max. CW |
| Recommended Storage Conditions for unused T&R product | +5 to +35 °C Humidity 45 - 75%RH 18 months max |
| Quantity/Reel | 4,000 pcs |



| Electrical Specifications | | |
|---------------------------|--|--|
| Operating Temperature | -40°C to +85°C | +85°C to +125°C |
| Insertion Loss | 1.25dB Typ. (1.6dB max.) | 1.5dB Typ. (1.8dB max.) |
| Return Loss | 9.5dB min. | 9.5dB min. |
| Phase Balance | 180±10 | 180±10 |
| Amplitude Difference | 2.0 max. | 2.0 max. |
| Attenuation | 40Typ. 30 min. @ 1726~1856 MHz 45Typ. 34 min. @ 2589~2784 MHz 45Typ. 42 min. @ 3452~3712 MHz 45Typ. 34 min. @ 4315~4640 MHz 54Typ. 31 min. @ 5178~5568 MHz | 40Typ. 30 min. @ 1726~1856 MHz 45Typ. 34 min. @ 2589~2784 MHz 45Typ. 42 min. @ 3452~3712 MHz 45Typ. 34 min. @ 4315~4640 MHz 54Typ. 31 min. @ 5178~5568 MHz |

| 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 |

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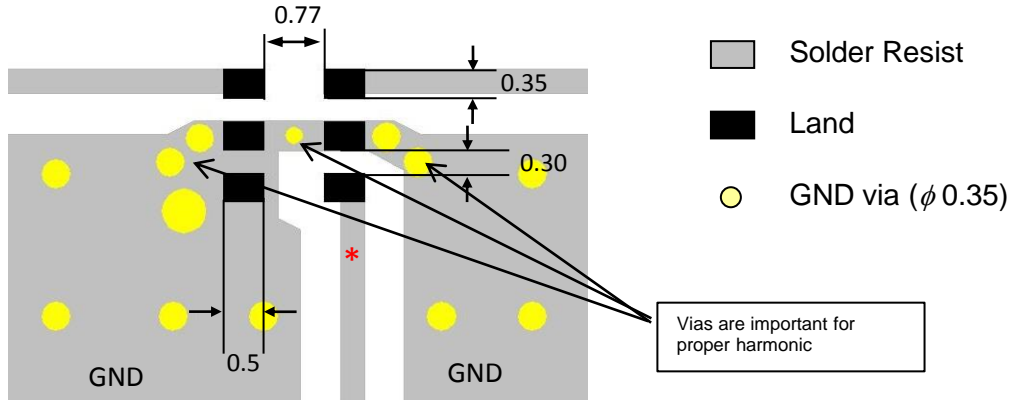
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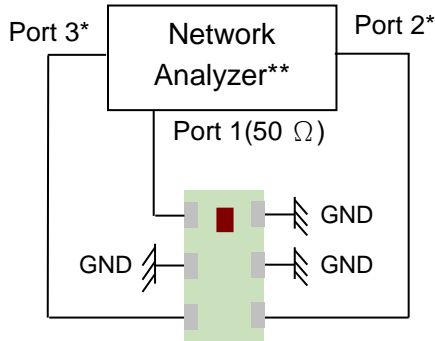
Pad-Soldermask Guidelines



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

Schematic and layout file download: 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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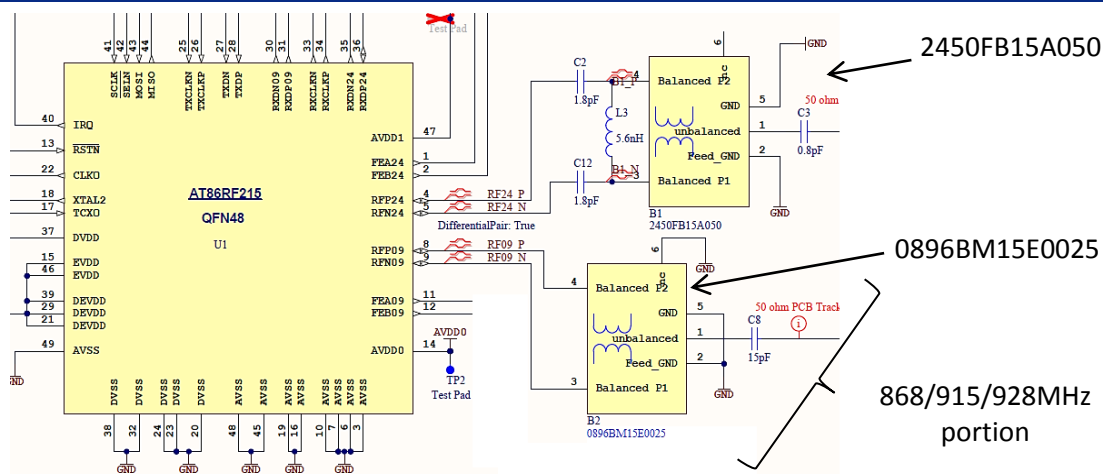
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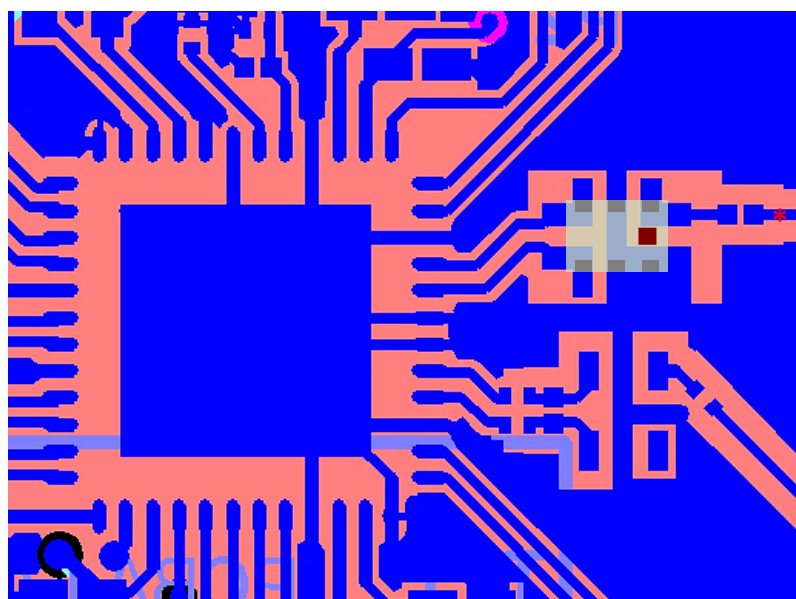
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Schematic



Schematic and layout file download: www.johansontechnology.com/atmel

Layout Mounting Considerations



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

868/915/928MHz portion

2.4GHz portion

Download the complete layout file at at: www.johansontechnology.com/atmel

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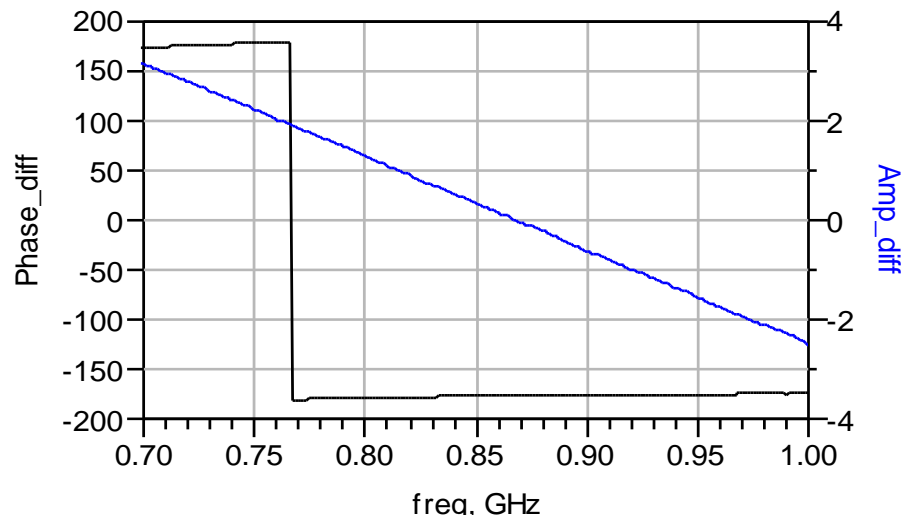
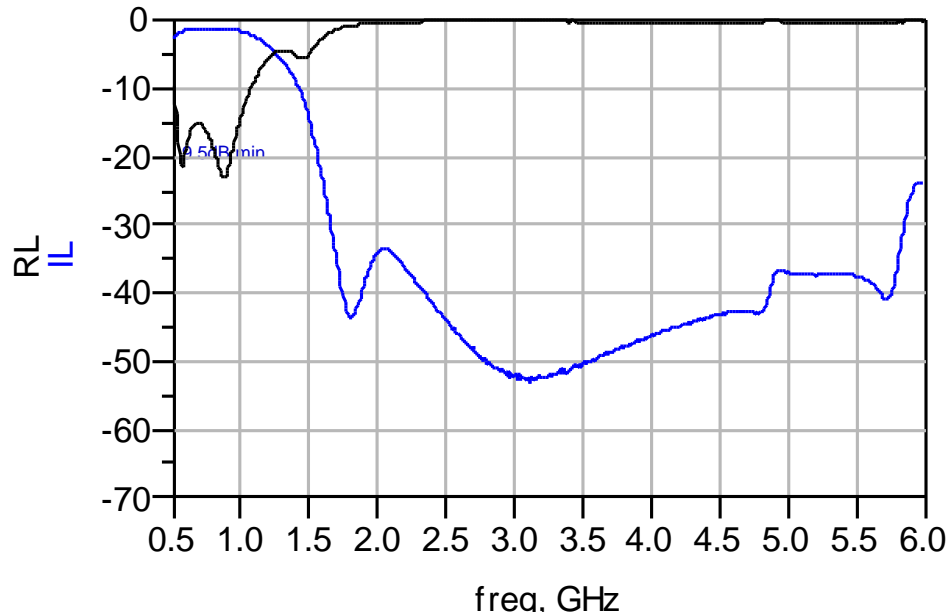
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Typical Electrical Characteristics (T=25°C)



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Application Notes, Layout Files, and more

www.johansontechnology.com/atmel

RoHS Compliance

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Soldering Information

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Antenna layout and tuning techniques

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Antenna layout review, tuning, and characterization services

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Recommended Storage Condition and Max Shelf Life

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Packaging information

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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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