

High Frequency Ceramic Solutions

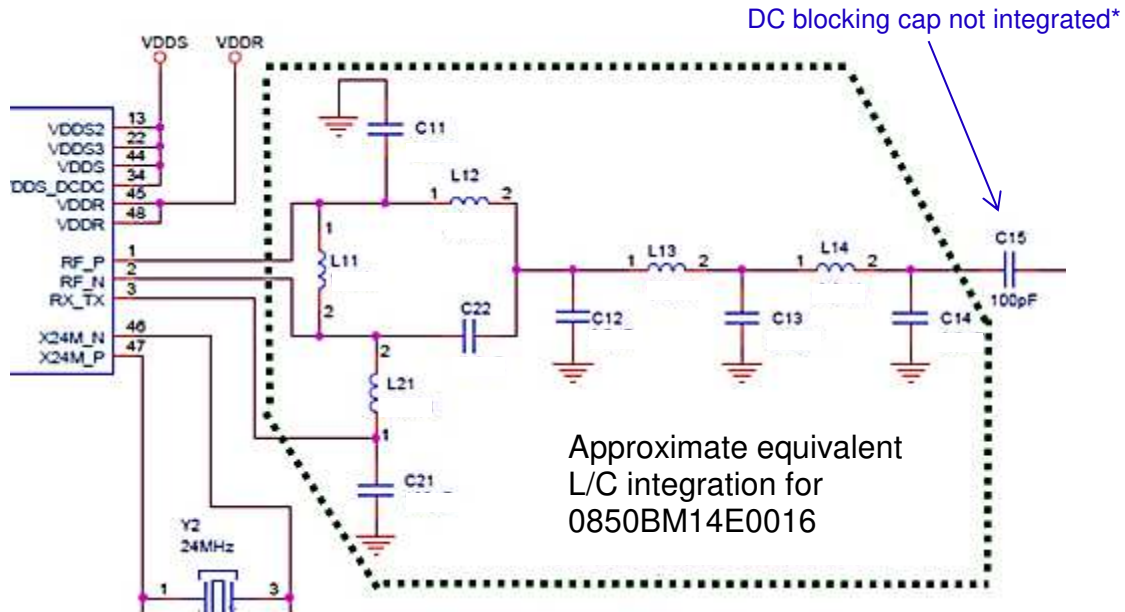
Sub-GHz Impedance Matched Balun + LPF integrated Passive Component for Texas Instruments' CC1310, CC1312 Chipsets

P/N: 0850BM14E0016

Detail Specification: 9/9/2021

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Equivalent L/C Circuit Integrated into IPC



*Even though Pins 3, 4, and 1 are internally *DC blocked* from GND, Pins 3/4 are *DC coupled* to Pin 1 (there's a DC path between them). We recommend the designer place a DC blocking cap (68-100pF) in series after Pin 1 (between IPC and antenna).

Would you like the reference design, schematic, and gerber files? Need us to review your layout for free or an antenna recommendation for your application? Contact us at:

<https://www.johansontechnology.com/ask-a-question>

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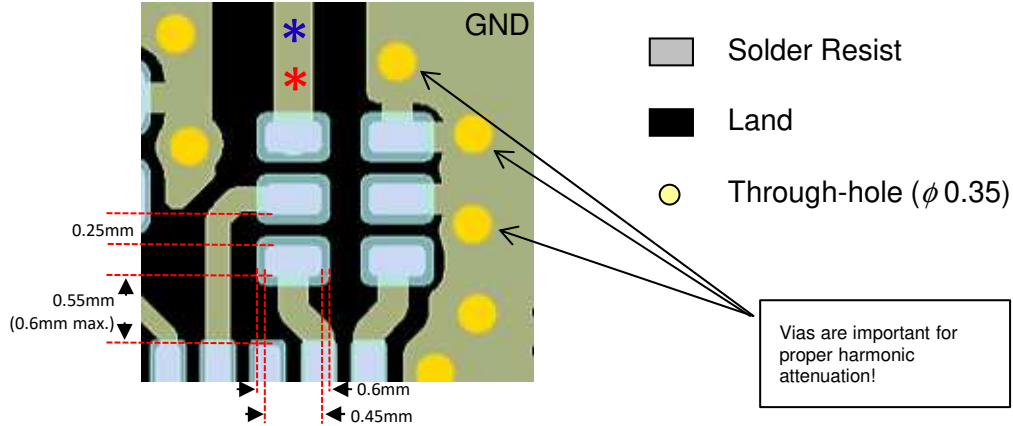
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Pad-Soldermask Guidelines

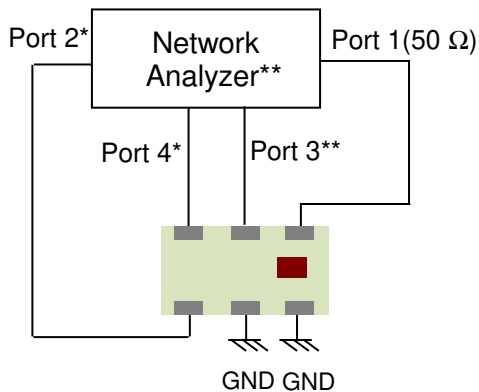
Request reference design, schematic, and gerber files at: <https://www.johansontechnology.com/ask-a-question>



* Even though Pins 3, 4, and 1 are DC blocked from GND, Pins 3/4 are DC coupled to Pin 1 (there's a DC path between them). We recommend the designer place a DC blocking cap (68-100pF) in series after Pin 1 (between IPC and antenna) per page 2 of the datasheet.

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

Measurement Diagram



Port 1: Unbalanced Port

Ports 2 and 4: Balanced Port

*Ports 2 and 4 Terminate impedance

=Conjugate match to TI CC13XX chipset

Port 3: RX_TX Port

**Port 3 Terminate impedance

=The load Impedance looking into RX_TX pin of TI CC13XX chipset

$IL = S_{DS21}$

$RL = S_{SS11}$

$Amp_balance = dB(S(2,1)/S(4,1))$

$Phase_balance = Phase(S(2,1)/S(4,1))$

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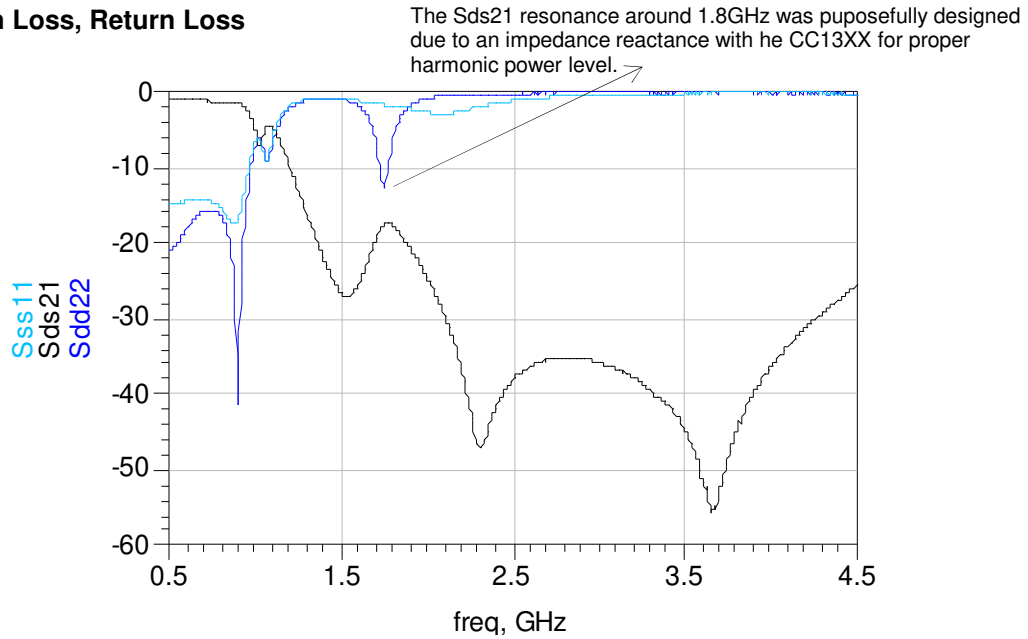
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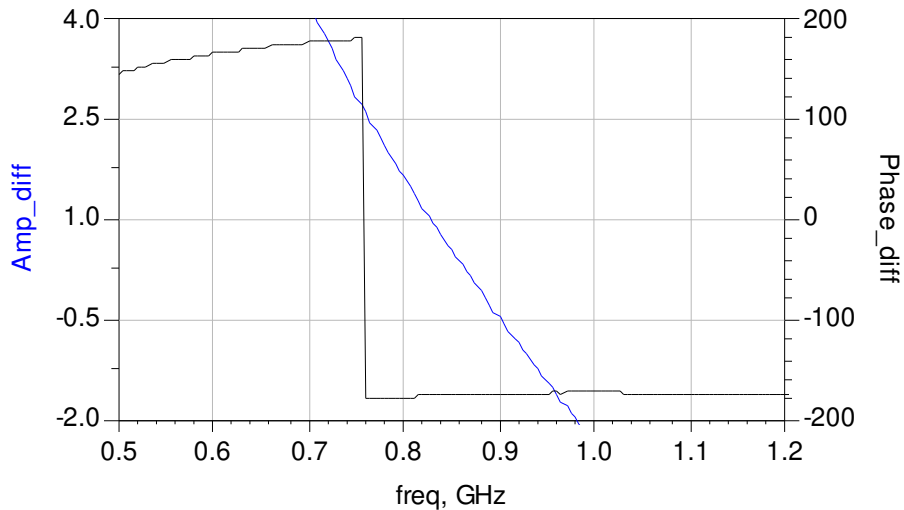
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Typical Electrical Characteristics (T=25°C)

Insertion Loss, Return Loss



Phase Difference, Amplitude Balance



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Application Notes, Layout Files, and more

<https://www.johansontechnology.com/ti>

Small SMD 433MHz (or 900M, 2.4G, 5G) antennas

<https://www.johansontechnology.com/antennas>

RoHS Compliance

<https://www.johansontechnology.com/rohs-compliance>

Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

Antenna layout and tuning techniques

<https://www.johansontechnology.com/tuning>

Antenna layout review, tuning, and characterization services

<https://www.johansontechnology.com/ipc-antenna-services>

MSL Info

<https://www.johansontechnology.com/msl-rating>

Recommended Storage Condition and Max Shelf Life

<https://www.johansontechnology.com/recommended-storage-conditions>

Packaging information

<https://www.johansontechnology.com/tape-reel-packaging>

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