

High Frequency Ceramic Solutions

2.4GHz Impedance Matched Balun + embedded FCC/ETSI Band Pass Filter For TI CC2620, CC2630, CC2640, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE

P/N: 2450BM14G0011

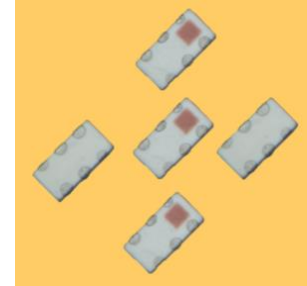
Detail Specification: 8/12/2019

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For the Full App Note and Layout Files, go to: <https://www.johansontechnology.com/ti>

General Specifications

| | |
|---|---|
| Part Number | 2450BM14G0011 |
| Frequency (MHz) | 2400 - 2500 |
| Unbalanced Impedance | 50 Ω |
| Balanced Differential Impedance | Conjugate match to TI CC2620, CC2630, CC2640, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE |
| Insertion Loss when component measured by itself (passive insertion loss) | 1.5 Typ. (1.8dB max. -40C to+105C) |
| Return Loss (dB) | 9.5 min. |
| Attenuation Differential mode (dB) | |
| 25dB min. @ 4800-5000 MHz | |
| 20dB min. @ 7200-7500 MHz | |



| | |
|---|---|
| Phase Difference (deg.) | 180 \pm 10 |
| Amplitude Difference | 2.0 max. |
| Power Capacity | 2W max (CW) |
| Qty/Reel (pcs) | 4,000 |
| Operating Temp. Range | -40 to +105°C |
| Recommended Storage Conditions of Unused Product on T&R | +5 ~ +35 °C, Humidity 45-75% 18 months max. |

Do you need help selecting the best mini or micro 2.4GHz antenna for your application? Send us a message at:

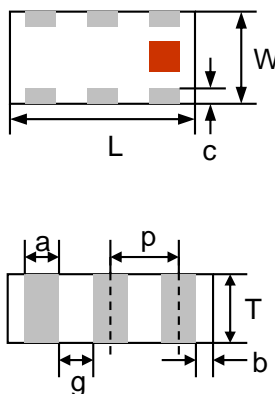
<https://www.johansontechnology.com/ask-a-question> or go to: <https://www.johansontechnology.com/antennas>

Part Number Explanation

| P/N Suffix | Packaging Style | Bulk | Suffix = S | E.g. 2450BM14G0011S |
|------------|-------------------|----------|---------------|----------------------------|
| | | T & R | Suffix = T | E.g. 2450BM14G0011T |
| | Termination Style | 100% Tin | Suffix = None | E.g. 2450BM14G0011(T or S) |

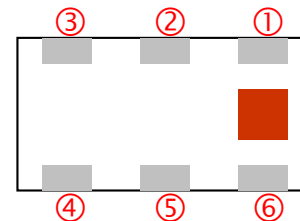
Mechanical Dimensions

| | Inches | Millimeter |
|---|--------------------|-----------------|
| L | 0.063 \pm 0.004 | 1.6 \pm 0.10 |
| W | 0.031 \pm 0.004 | 0.8 \pm 0.10 |
| T | 0.024 \pm 0.004 | 0.6 \pm 0.10 |
| a | 0.008 \pm 0.0039 | 0.2 \pm 0.10 |
| b | 0.008 +0.1/-0.15 | 0.2 +0.1/-0.15 |
| c | 0.006 \pm 0.0039 | 0.15 \pm 0.10 |
| g | 0.012 \pm 0.0039 | 0.3 \pm 0.10 |
| p | 0.020 \pm 0.002 | 0.5 \pm 0.05 |



Terminal Configuration

| No | Function | No | Function |
|----|-----------------|----|---------------|
| 1 | Unbalanced Port | 4 | Balanced Port |
| 2 | NC | 5 | GND |
| 3 | Balanced Port | 6 | GND |



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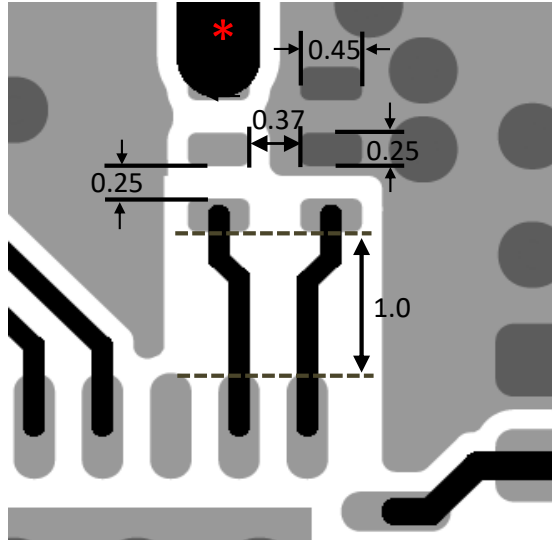
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Mounting Considerations



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

Land

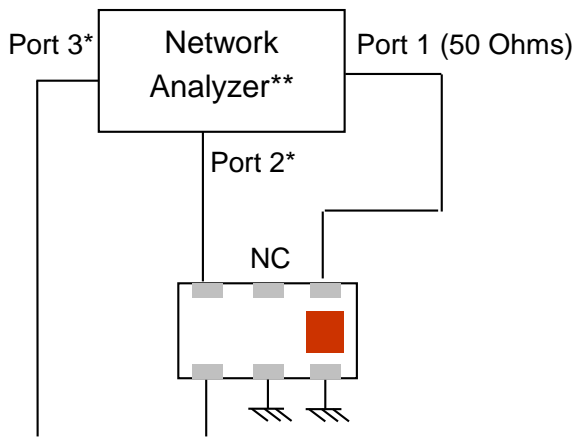
Through-hole ($\phi 0.3/\phi 0.2$) vias to GND

Would you like us to provide the layout files of the above? Go to: <https://www.johansontechnology.com/ti> or send us a message to review your layout at: <https://www.johansontechnology.com/ask-a-question> "Applications Engineering" on the drop down question type

Units in mm

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Measuring Diagram



Port 1: Unbalanced Port
Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

$$\text{Amp_balance} = \text{dB}(S(2,1)/S(3,1))$$

$$\text{Phase_balance} = \text{Phase}(S(2,1)/S(3,1))$$

* Impedance for ports 2 and 3
= Conjugate to Balanced Impedance/2
** E5071C from Agilent

You can download the s-parameters at: <http://www.johansontechnology.com/ti>

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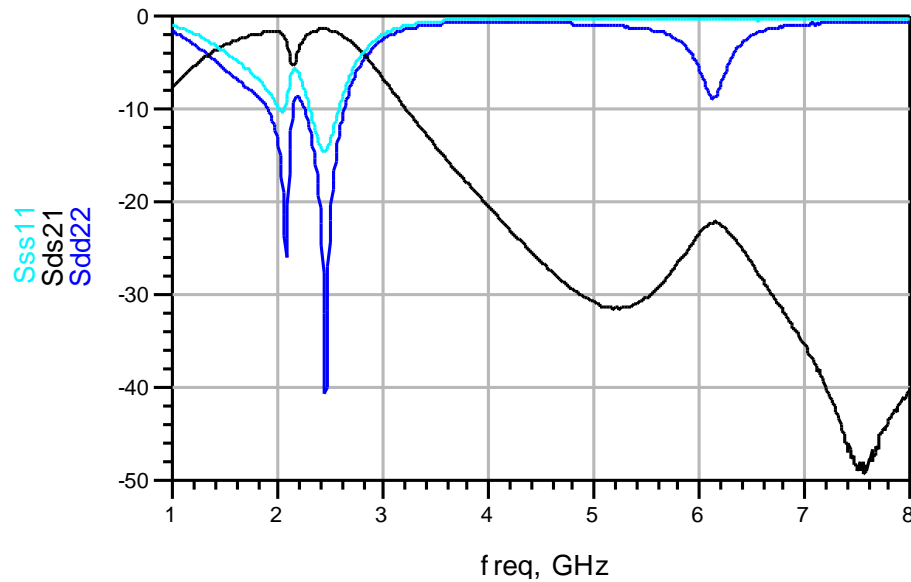
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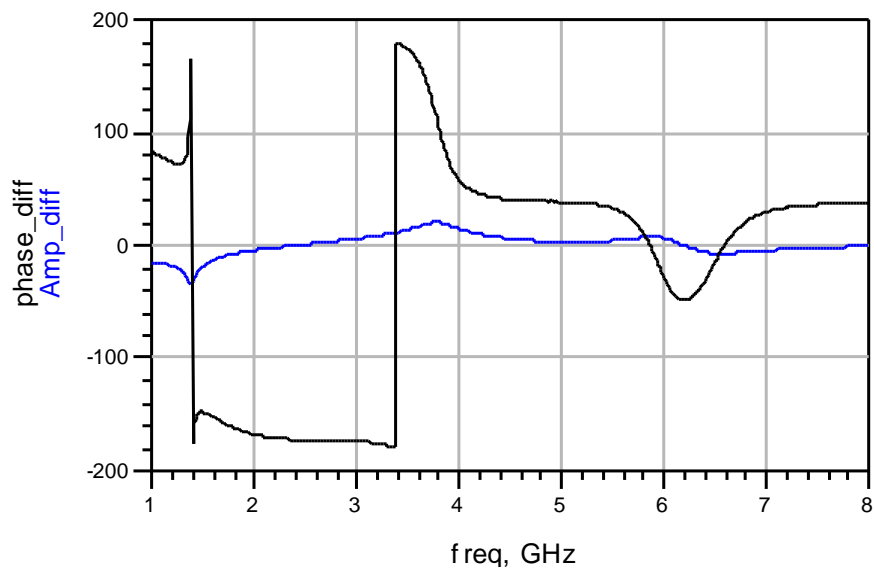
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Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



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Application Notes, Layout Files, and more

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

Packaging information

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

Soldering Information

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

MSL Info

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

Recommended Storage Condition and Max Shelf Life

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

RoHS Compliance

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

Antenna layout and tuning techniques

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

Antenna layout review, tuning, and characterization services

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

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