

# High Frequency Ceramic Solutions

## AEC-Q200 Qualified Component

2.4GHz Impedance Matched Balun + embedded FCC/ETSI Band Pass Filter For TI CC2620, CC2630, CC2640, CC2642, CC2642R1F, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE P/N: 2450BM14G0011T-AEC

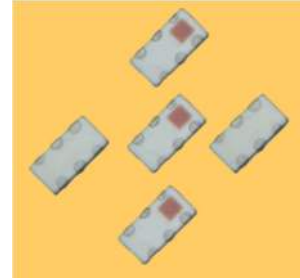
Detail Specification: 7/27/2020

Page 1 of 4

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, CC2642, CC2642R1F, CC2650, CC2652R (RGZ) chipsets operated on		
Insertion Loss when component measured by itself (passive insertion loss)	1.5 Typ. (1.8dB max. -40C to+105C)	Phase Difference (deg.)	180 ± 10
Return Loss (dB)	9.5 min.	Amplitude Difference	2.0 max.
Attenuation Differential mode (dB)		Power Capacity	2W max (CW)
25dB min. @ 4800-5000 MHz		Qty/Reel (pcs)	4,000
20dB min. @ 7200-7500 MHz		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-AEC
		T & R	Suffix = T	E.g. 2450BM14G0011T-AEC
	Termination Style	100% Tin	Suffix = None	E.g. 2450BM14G0011(T or S)-AEC

Mechanical Dimensions		
	Inches	Millimeter
L	0.063 ± 0.004	1.6 ± 0.10
W	0.031 ± 0.004	0.8 ± 0.10
T	0.024 ± 0.004	0.6 ± 0.10
a	0.008 ± 0.004	0.2 ± 0.10
b	0.008 +0.1/-0.15	0.2 +0.1/-0.15
c	0.006 ± 0.004	0.15 ± 0.10
g	0.012 ± 0.004	0.3 ± 0.10
p	0.020 ± 0.002	0.5 ± 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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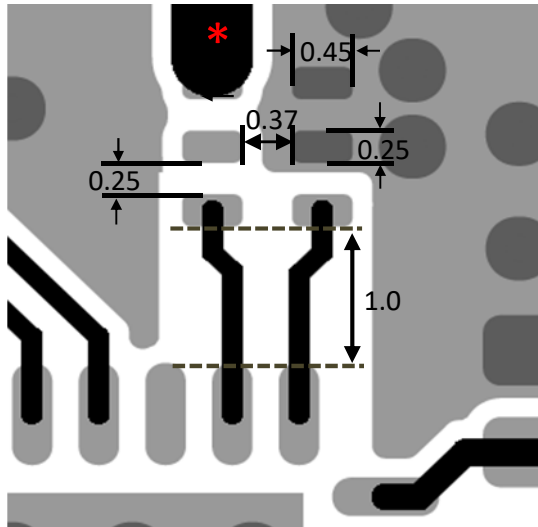
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CC2640, CC2642, CC2642R1F, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE

Detail Specification: 7/27/2020

Page 2 of 4

## 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 TI chipset + 2450BM14G0011? Review your layout for free? Please go to this link to contact our RF team:

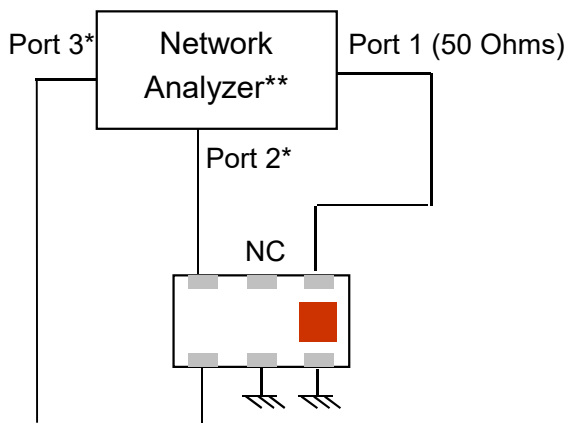
<https://www.johansontechnology.com/ask-a-question>

"Applications Engineering" on the drop down question type

Units in mm

Do you need the layout/gerber 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>

## 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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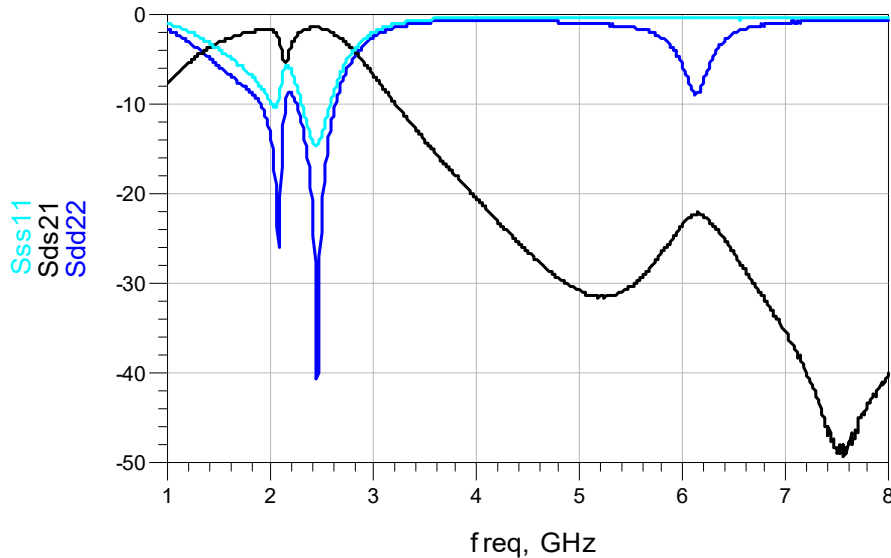
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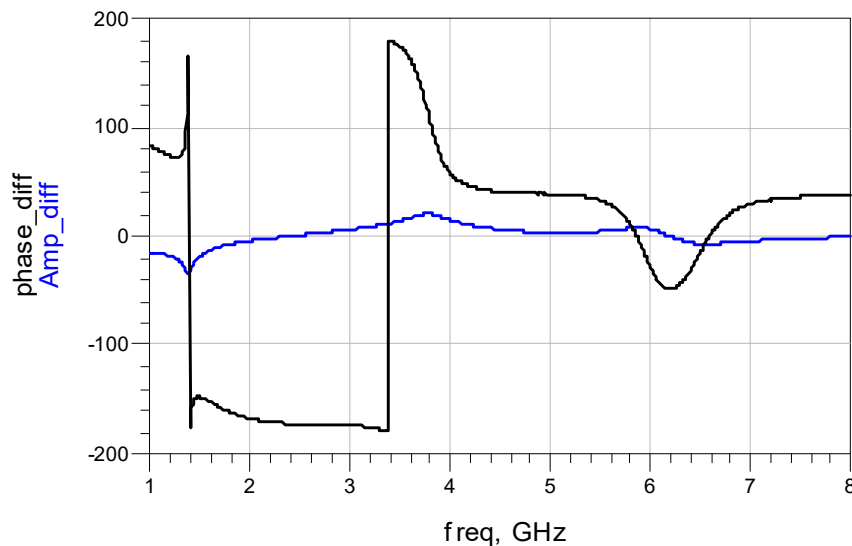
Page 3 of 4

## Typical Electrical Characteristics (T=25°C)

### Insertion and Return Loss



### Amplitude and Phase Balance



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Page 4 of 4

## 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/ipc-antenna-services>

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