

High Frequency Ceramic Solutions

2.4GHz Impedance Matched Balun + embedded FCC/ETSI Band Pass Filter For TI CC2620, CC2630, CC2640, CC2642, CC2642R-Q1, C2642R1F, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE

P/N: 2450BM14G0011002T
Legacy P/N: 2450BM14G0011T-AEC

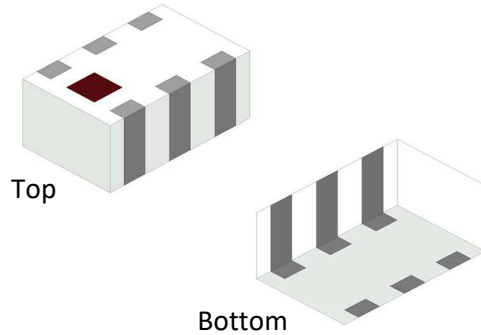
Detail Specification: 1/23/2023

Page 1 of 4

AEC-Q200 Qualified Component

General Specifications

Part Number	2450BM14G0011002T
Operating Frequency (MHz)	2400 - 2500
Unbalanced Impedance (Ω)	50
Balanced Differential Impedance (dB)	Conjugate match to TI CC2620, CC2630, CC2640, CC2642, CC2642R-Q1, CC2642R1F, CC2650, CC2652R (RGZ) chipsets operated on INTERNAL BIAS MODE
Insertion Loss when component measured by itself [passive insertion loss] (dB)	1.5 Typ. (1.8 max. -40C to+105C)
Return Loss (dB)	9.5 min.
Attenuation Differential mode (dB)	25 min. @4800-5000 MHz 20 min. @7200-7500 MHz
Phase Difference (degree)	180 \pm 10
Amplitude Difference (dB)	2 max.



Power Capacity (W)	2 max. (CW)
Operating Temperature ($^{\circ}$ C)	-40 to +85
Recommended Storage Conditions and Period for Unused Product on T&R	+5 to +35 $^{\circ}$ C Humidity 45 - 75% RH 18 months max.
Reel Qty. (pcs./reel)	4,000

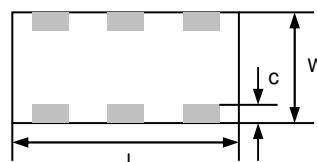
For the Full App Note and Layout Files, go to: <https://www.johansontechnology.com/ti>

Part Number Explanation

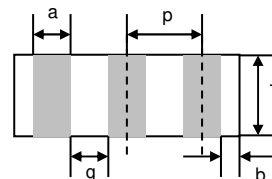
P/N Suffix	Packing Style	Bulk (loose pcs.)	Suffix = B	E.g. 2450BM14G0011002B
		T & R (7" Reel Paper Tape)	Suffix = T	E.g. 2450BM14G0011002T
	Evaluation Board	Non-Conductive Bags	Suffix = C	E.g. 2450BM14G0011001CE1
		Assembled PCB 1 (50 Ω SMA)	Suffix = E1	

Mechanical Dimensions

	in	mm
L	0.063 \pm 0.004	1.60 \pm 0.10
W	0.031 \pm 0.004	0.80 \pm 0.10
T	0.024 \pm 0.004	0.60 \pm 0.10
a	0.008 \pm 0.004	0.20 \pm 0.10
b	0.008 +.004/-0.006	0.20 +0.10/-0.15
c	0.006 \pm 0.004	0.15 \pm 0.10
g	0.012 \pm 0.004	0.30 \pm 0.10
p	0.020 \pm 0.002	0.50 \pm 0.05



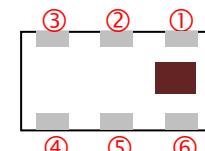
Bottom View



Side View

Terminal Configuration

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



Top View

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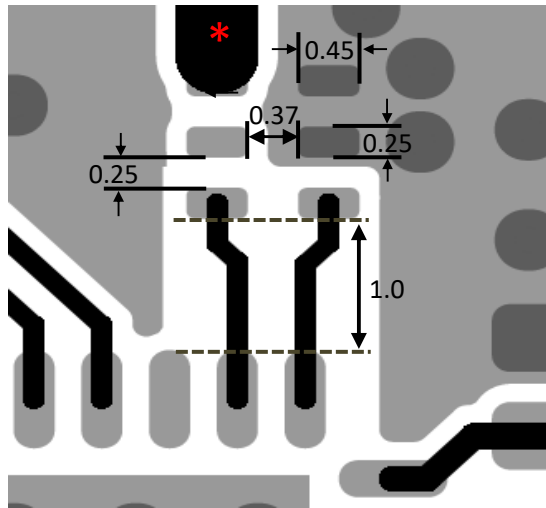
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Page 2 of 4

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Mounting Considerations

Mount device with colored mark facing up.



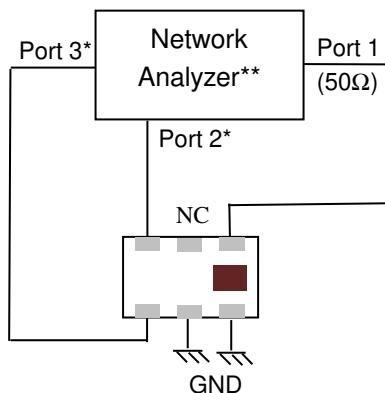
Units: mm

Land

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

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

**E5071B from Agilent

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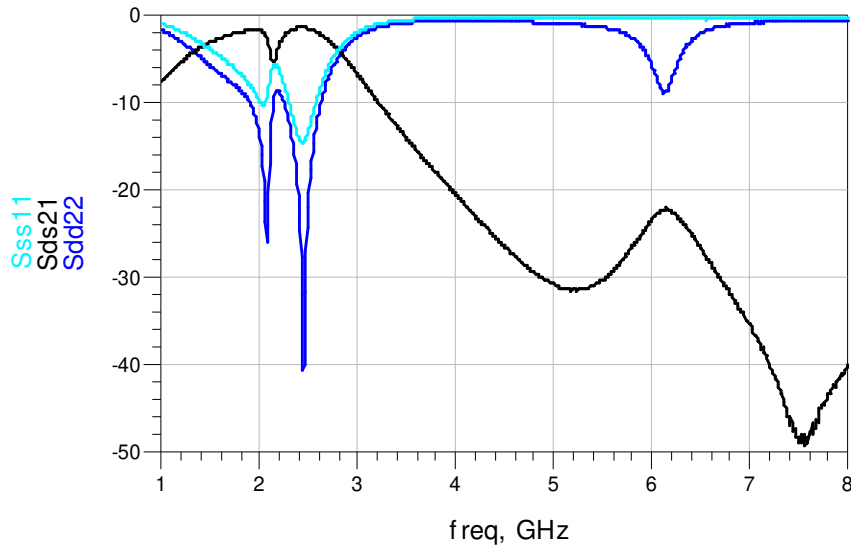
Detail Specification: 1/23/2023

Page 3 of 4

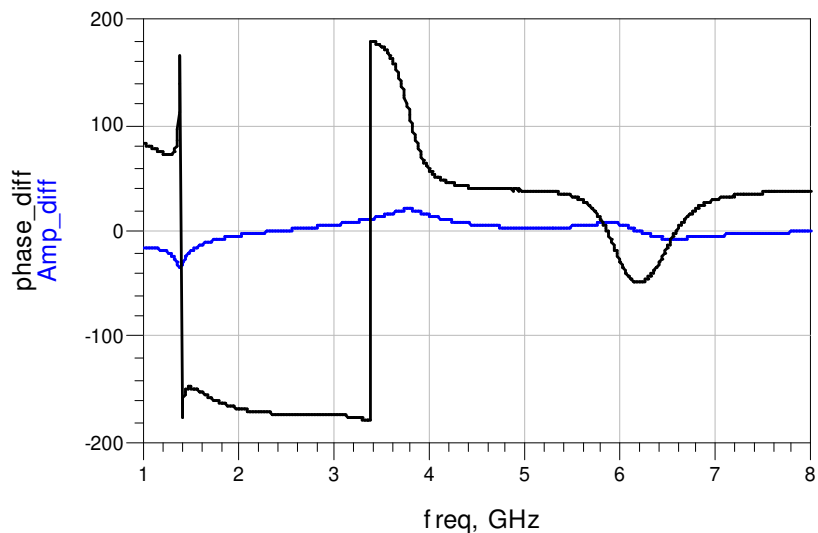
AEC-Q200 Qualified Component

Typical Electrical Characteristics (T=25°C)

Insertion Loss and Return Loss



Phase and Amplitude Difference



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Page 4 of 4

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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>

Layout Review Services

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

Antenna Layout Review, Tuning, and Characterization Services

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

Johanson's New Global Part Number Schema

Johanson has instituted a new Global Part Numbering (GPN) system. Only the part number is changing. The parts are produced with the exact same materials, manufacturing processes, manufacturing controls, dimensions, physical attributes and testing as the parts supplied with the legacy part numbers. A database for part number crosses can be accessed at:

<https://www.johansontechnology.com/pn-search>

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