High Frequency Ceramic Solutions

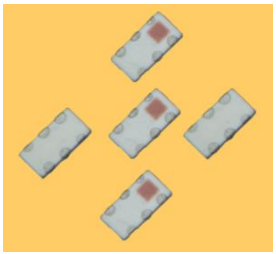
2.4GHz Impedance Matched Balun + embedded FCC/ETSI Band Pass Filter For Texas Instruments CC2620, CC2630, CC2640, CC2650 chipsets operated on INTERNAL BIAS MODE **P/N: 2450BM14G0011**

Detail Specification: 3/7/2017

For the Full App Note and Layout Files, go to: 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, chipsets operated on INTERNAL BIAS MODE
Insertion Loss when component measured by itself (passive insertion loss)	1.5 Typ. (1.8dB max. -40C to+85C)
Return Loss (dB)	9.5 min.
Attenuation Differential mode (dB):	
25 typ. / 14dB min. @ 4800-5000 MHz	
20 typ. / 15dB min. @ 7200-7500 MHz	



Phase Difference (deg.)	180 ± 10
Amplitude Difference	2.0 max.
Power Capacity	2W max (CW)
Qty/Reel (pcs)	4,000
Operating Temp. Range	-40 ~ +85°C
Storage Temp. Range	-40 ~ +85°C
Recommended Storage Conditions of Unused Product on T&R	+5 ~ +35 °C, Humidity 45-75%
Storage Period	18 months max.

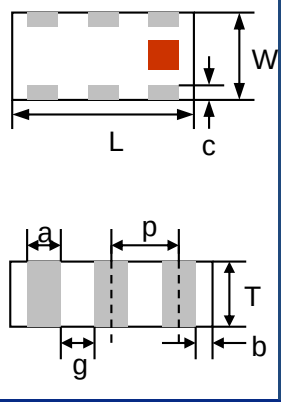
Do you need help selecting the best mini or micro 2.4GHz antenna for your application? Send us a message at: http://www.johansontechnology.com/ask-a-question and go to: http://www.johansontechnology.com/antennas

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)

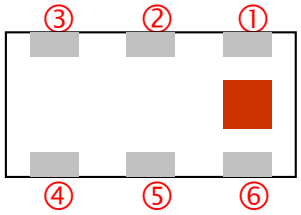
Mechanical Dimensions

	Inches	Millimeter
L	0.063 ± 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

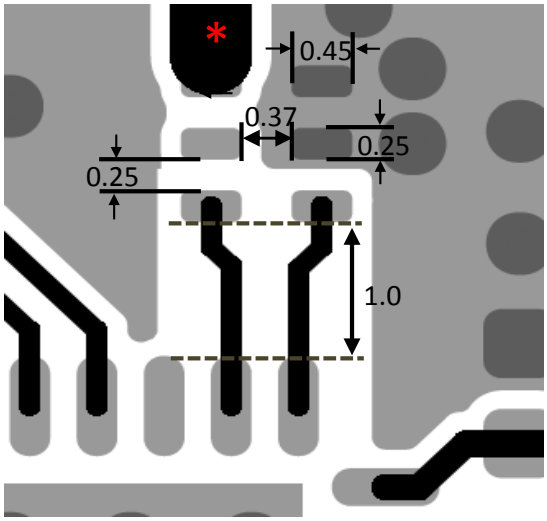
No	Function	No	Function
1	Unbalanced Port	**4**	Balanced Port
2	NC	**5**	GND
3	Balanced Port	**6**	GND



Johanson Technology, Inc. reserves the right to make design changes without notice.
All sales are subject to Johanson Technology, Inc. terms and conditions.

JOHANSON TECHNOLOGY
www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012, USA • TEL +1.805.389.1166

Mounting Considerations



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

Land

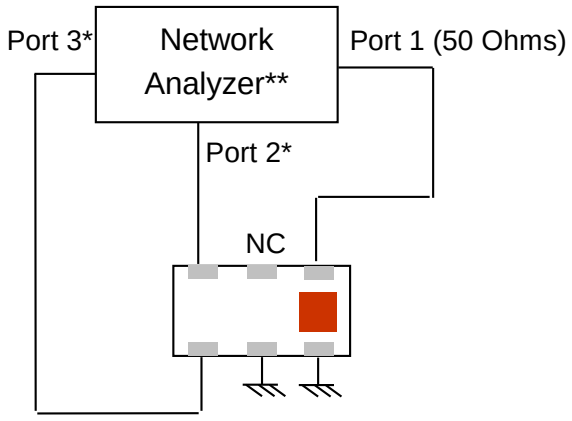
Through-hole (ϕ0.3/ϕ0.2) vias to GND

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: 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: www.johansontechnology.com/ti or send us a message to review your layout at: http://www.johansontechnology.com/ask-a-question

Measuring Diagram



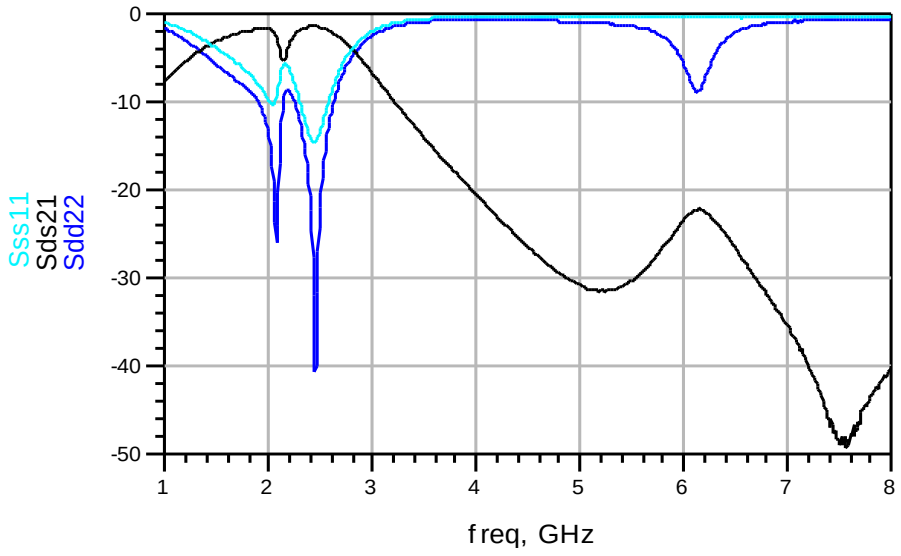
Port 1:Unbalanced Port
Ports 2 and 3: Balanced Port
IL=S_{ds21}
RL=S_{ss11}
Amp_balance = dB(S(2,1)/S(3,1))
Phase_balance = Phase(S(2,1)/S(3,1))

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

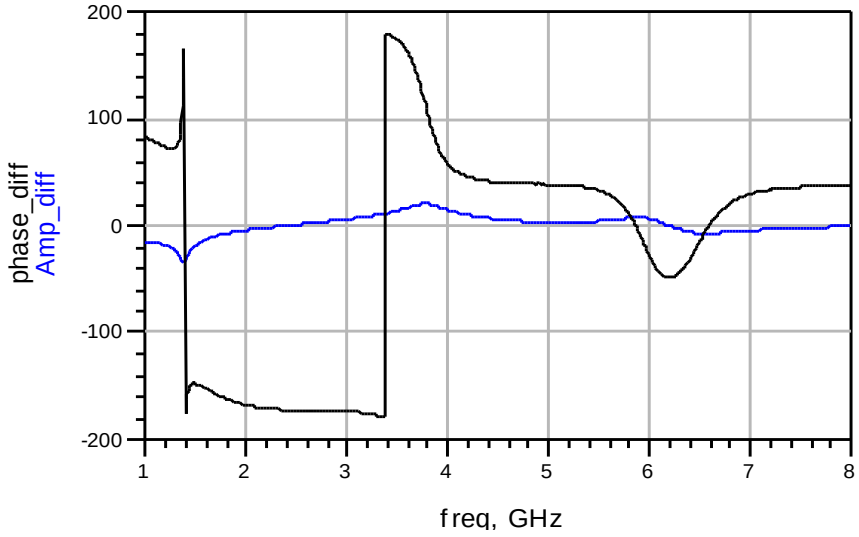
You can download the s-parameters at: http://www.johansontechnology.com/ti

Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



Application Notes, Layout Files, and more
www.johansontechnology.com/ti

Packaging information
www.johansontechnology.com/tape-reel-packaging

Soldering Information
www.johansontechnology.com/ipcsoldering-profile

MSL Info
www.johansontechnology.com/msl-rating

Recommended Storage Condition and Max Shelf Life
www.johansontechnology.com/recommended-storage-conditions

RoHS Compliance
www.johansontechnology.com/rohs-compliance

Antenna layout and tuning techniques
www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services
www.johansontechnology.com/ipc-antenna-services

www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012, USA • TEL +1.805.389.1166