"High Frequency Ceramic Solutions"

433 MHz Impedance Matched Balun + LPF Integrated Front-End SMD Passive Component for SiLabs Si4455, Si4460, Si4461, Si4463, and Si4464 Chipsets

P/N 0433BM41A0019

Detail Specification: 5/30/2017

General Specifications

Part Number	0433BM41A0019
Frequency Range(MHz)	424-444
Balanced Impedance	Si4455, Si4460, Si4461, Si4463, Si4464
Unbalanced impedance	50Ω (single ended)
Average Insertion Loss when connected to Si44XX chipset (Active OP Tx/Rx)	0.9dB Typ@25C 1.5dB max. (-45 to +85C)
Insertion Loss when component measured by itself(passive insertion loss)	1.6dB Typ in Rx, 1.4dB Typ in Tx @25C 2.2dB max. in Rx, 1.9dB max. in Tx (-45 to +85C)
Attenuation dB (min.)	35 min. @ 2xfo MHz
	35 min. @ 3xfo MHz
	35 min. @ 4xfo MHz
	35 min. @ 5xfo MHz

Phase Diff. (deg.)	180° ± 10
VSWR @ BW	2.0 max.
Amplitude Difference (dB)	2.0 max.
Reel Quanity	4,000
Operating Temperature	-40 to +85°C
Recommended Storage Conditions for Unused product on T&R	+5 ~ +35 °C, Humidity 45~75%RH, 18 months.
Input Power	500mW max. (CW)

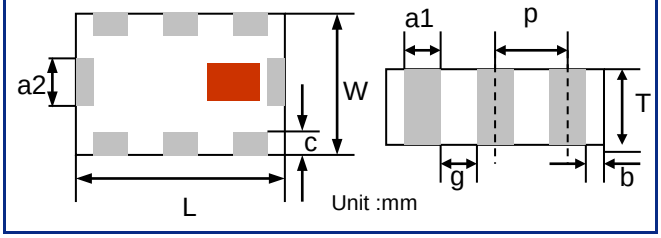
Download the gerber files at: https://www.johansontechnology.com/silabs

Part Number Explanation

P/N Suffix	**Packing Style**	Bulk	Suffix = S	eg. 0433BM41A0019S
		T & R	Suffix = E	eg. 0433BM41A0019E
	Termination style	Ni/Sn	Suffix = None	eg. 0433BM41A0019(E or S)

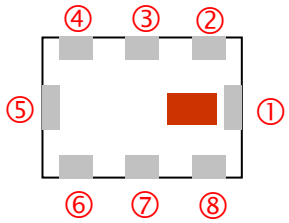
Mechanical Dimensions

	In	mm
L	0.126 ± 0.008	3.20 ± 0.20
W	0.098 ± 0.008	2.50 ± 0.20
T	0.059 ± 0.006	1.50 ± 0.15
a1	0.022 ± 0.006	0.55 ± 0.15
a2	0.028 ± 0.008	0.70 ± 0.20
b	0.004 min.	0.1 min.
c	0.012 + 0.008	0.30 + 0.20
g	0.018 + 0.006	0.45 + 0.15
p	0.039 + 0.008	1.00 + 0.20



Terminal Configuration

No.	Function	No.	Function
1	GND	5	GND
2	Ant	6	TX
3	GND	7	RXN
4	GND	8	RXP



DC Connection for Pins

(1) Pin1 – Pin3 – Pin4 – Pin5
(2) Pin2 – Pin7– Pin8

Do you need to download the reference design/layout files? Go to: https://www.johansontechnology.com/silabs

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Mounting Considerations

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

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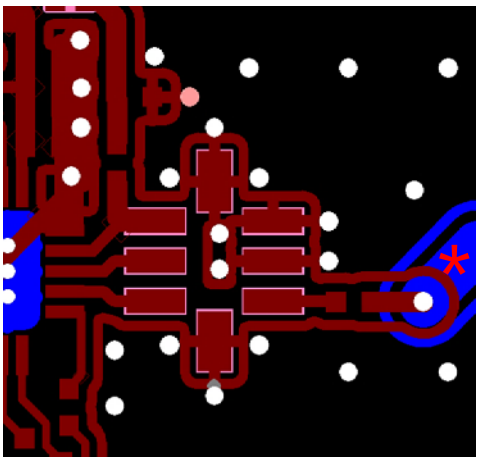
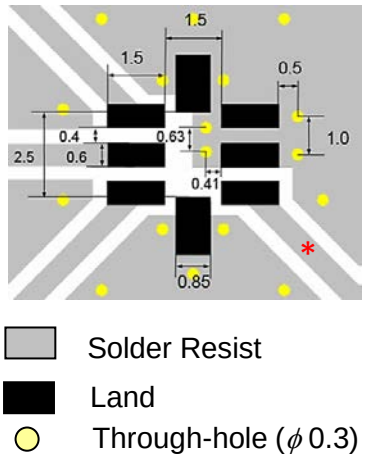
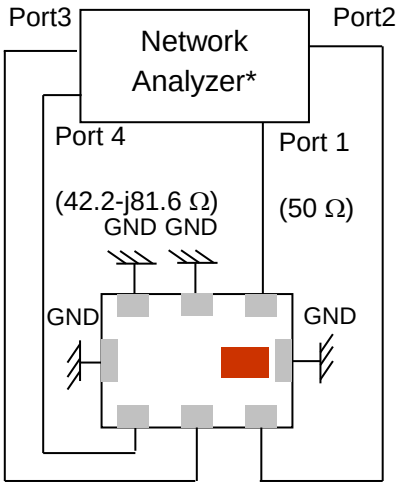




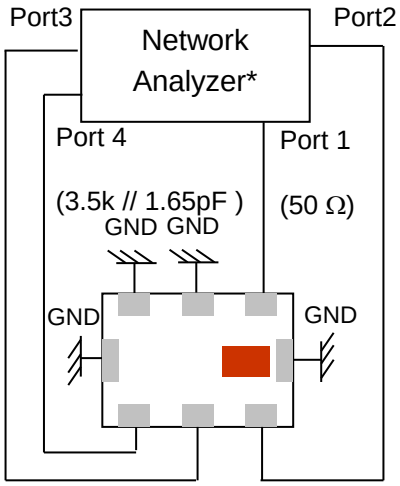
Do you need the layout/gerber files of the above? Go to: https://www.johansontechnology.com/silabs or send us a message at: https://www.johansontechnology.com/ask-a-question

Measuring Diagram

Tx Mode



Rx Mode



Measuring Diagram (*cont.*)

Tx Mode:
Port1: Antenna Port
Port1 Terminate impedance: 50ohm
Ports 2 and 3: Rx Balanced Port
Port 2 and 3 Terminate impedance: 1/2 x (the loading impedance ZIC,RX off of Si4455)
Port4: Tx Port
Port4 Terminate impedance: Complex conjugate to ZIC,TX on of Si4455

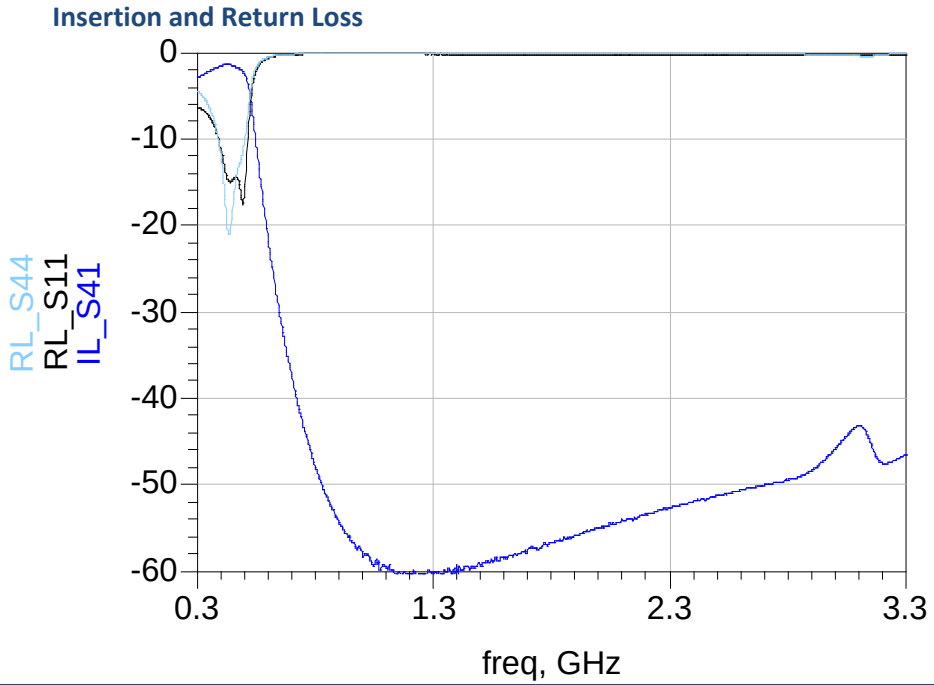
IL = S41
RL = S11 / S44

RXMode:
Port 1: Antenna Port
Port1 Terminate impedance: 50ohm
Ports 2 and 3: Rx Balanced Port
Port 2 and 3 Terminate impedance: Complex conjugate to 1/2 x (Balance impedance of ZIC,RX on of Si4455)
Port4: Tx Port
Port4 Terminate impedance: The loading impedance ZIC,TX off of Si4455

IL=Sds21
RL=Sss11 / Sdd22
Amp_balance = dB(S(3,1)/S(2,1))

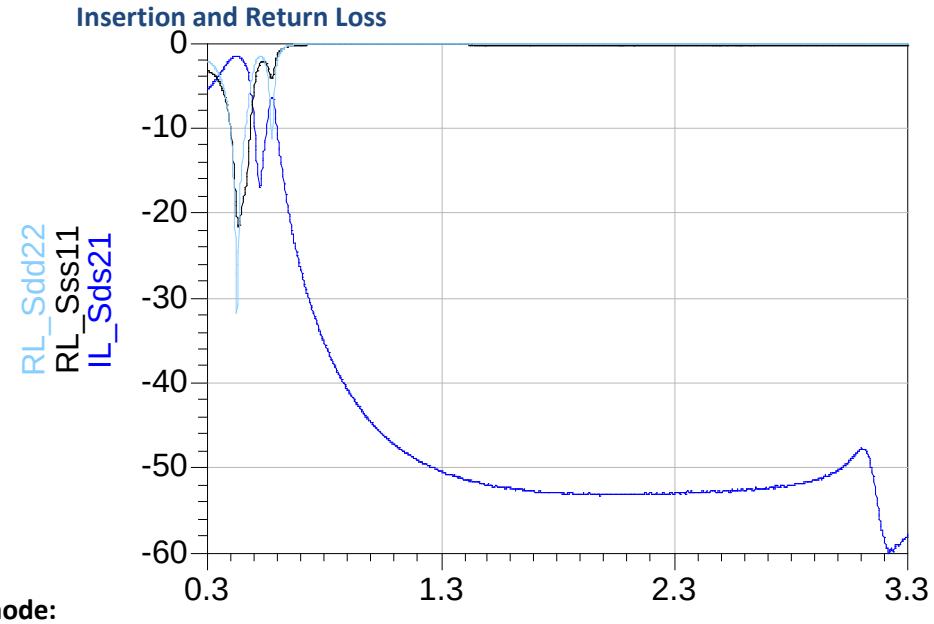
Typical Electrical Characteristics (T=25oC)

TX mode:



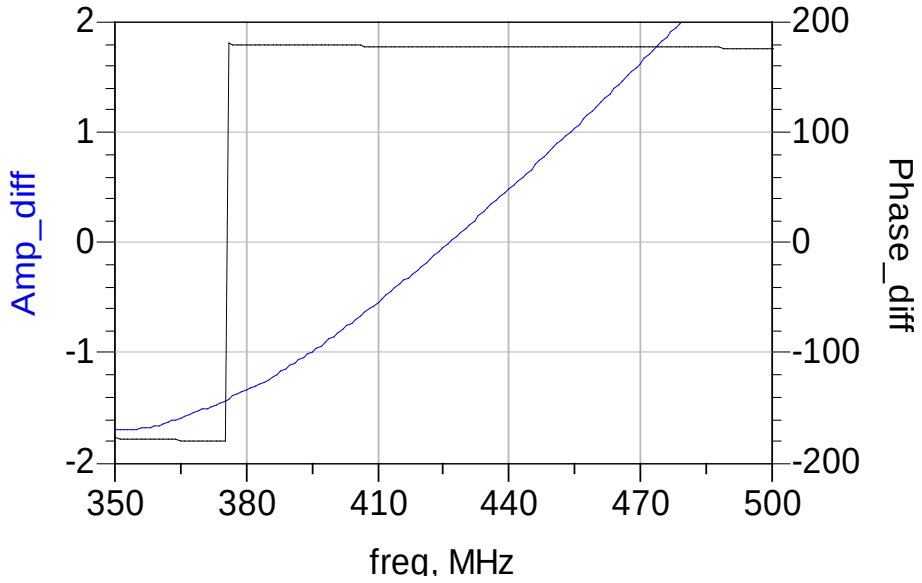
Typical Electrical Characteristics (T=25oC)

RX mode:



RX mode:

Amplitude and Phase Balance



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