High Frequency Ceramic Solutions

434MHz Impedance-Matched Balun+Filter Integrated Passive Device (IPD) for Silicon Labs EFR32 Chipset, EIA 0805. **0434BM15B0027**

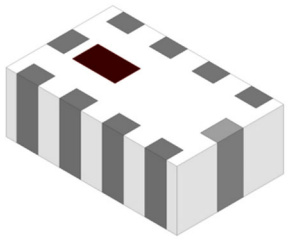
Detail Specification: 6/9/2021

Do you need a small sub-GHz or 2.4GHz antenna? Go to: https://www.johansontechnology.com/antennas

General Specifications

Part Number	0434BM15B0027	
Frequency (MHz)	431 - 437	
Unbalanced Impedance (Ω)	50	
Balanced Impedance (Ω)	Impedance matched to Silicon Labs EFR32	
Insertion Loss (dB)	2.0 typ. (2.3 max)	
Return Loss (dB)	15 typ. (10 min)	
Phase Balance (deg)	-155 ± 15	
Amplitude Difference (dB)	-5.0 ± 2.0	
Attenuation (dB @MHz)	22 typ. (18 min.)	862 - 874 MHz
	35 typ. (30 min.)	1293 - 1311 MHz
Voltage Rating (V)	3.6 max.	
Power Capacity (W)	3 max. CW	
Operating Temperature	-40°C to +85°C	

The entire sub-GHz discrete L/C circuit is integrated inside this small package!



Silicon Labs Approved!

Quantity/Reel	4,000
Storage Temperature Range	-40°C to +85°C
Storage Period	18 months max
Recommended Storage Conditions for unused T&R product	+5 ~ +35 °C, Humidity 45~75%RH, 18 mos. max

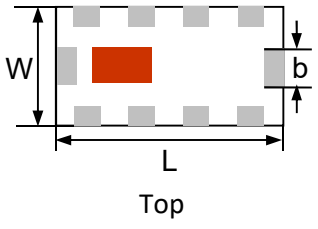
For more Silicon Labs matched balun-filters, go to: https://www.johansontechnology.com/silabs

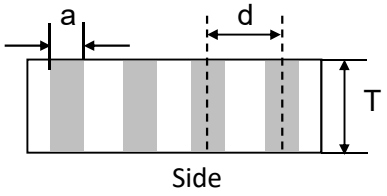
Part Number Explanation

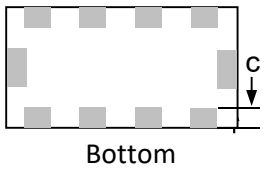
P/N Suffix	**Packing Style**	Bulk	Suffix = S	E.g. 0434BM15B0027S
		T & R	Suffix = E	E.g. 0434BM15B0027E

Mechanical Dimensions

	In	mm
L	0.079 ± 0.008	2.00 ± 0.20
W	0.049 ± 0.008	1.25 ± 0.20
T	0.035 ± 0.004	0.90 ± 0.10
a	0.010 ± 0.004	0.25 ± 0.10
b	0.012 ± 0.006	0.30 ± 0.15
c	0.008 +0.004/-0.006	0.20 +0.1/-0.15
d	0.020 ± 0.004	0.50 ± 0.10

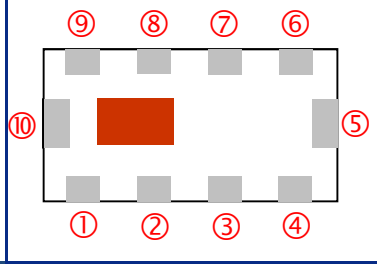






Terminal Configuration

No.	Function	No.	Function
1	GND	6	RX_N
2	ANT	7	RX_P
3	GND	8	TX_N
4	GND	9	TX_P
5	GND	10	GND or DC Feed/GND



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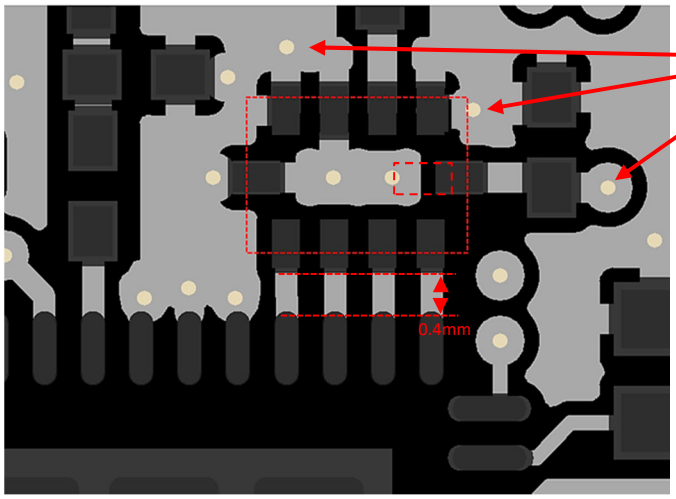
Pad-Soldermask Guidelines (with DC Feed)



GND vias are crucial for filter harmonic attenuation

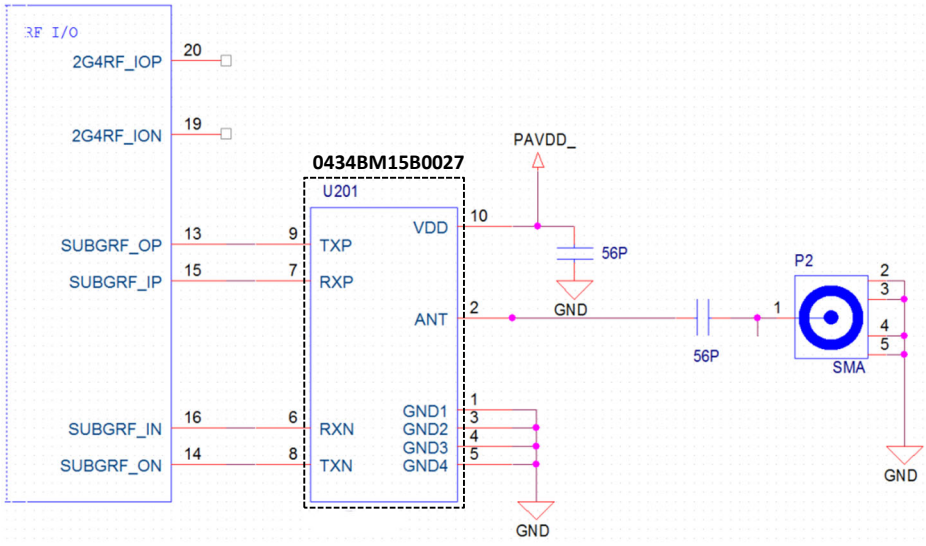
GND

Solder Pads

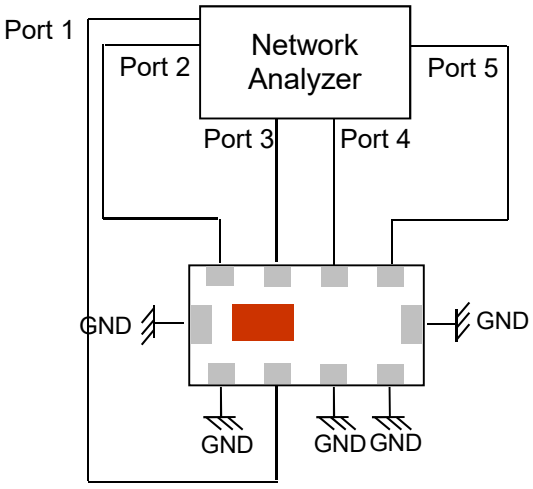
GND via (ϕ 0.20)

For reference design package and PCB CAD files, please contact us at: https://www.johansontechnology.com/ask-a-question

PCB Reference Design Schematic



Measuring Diagram



Tx mode:
Port 1 impedance: 50Ω
Port 2 and 3 impedance*: Complex conjugate to EFR32 $Z_{IC,TX\ on}$
Port 4 and 5 impedance*: Load impedance of EFR32 $Z_{IC,RX\ off}$

IL=TX S_{DS21}
RL=TX S_{SS11} / TX S_{DD22}
Amplitude Difference = dB(S(1,2)/S(1,3))
Phase Balance = Phase(S(1,2)/S(1,3))

Rx mode:
Port 1 impedance: 50Ω
Port 4 and 5 impedance*: Complex conjugate to EFR32 $Z_{IC,RX\ on}$
Port 2 and 3 impedance*: Load impedance of EFR32 $Z_{IC,TX\ off}$

IL=RX S_{DS21}
RL=RX S_{SS11} / RX S_{DD22}
Amp_balance = dB(S(1,4)/S(1,5))
Phase_balance = Phase(S(1,4)/S(1,5))

*Termination impedance included in s-parameters

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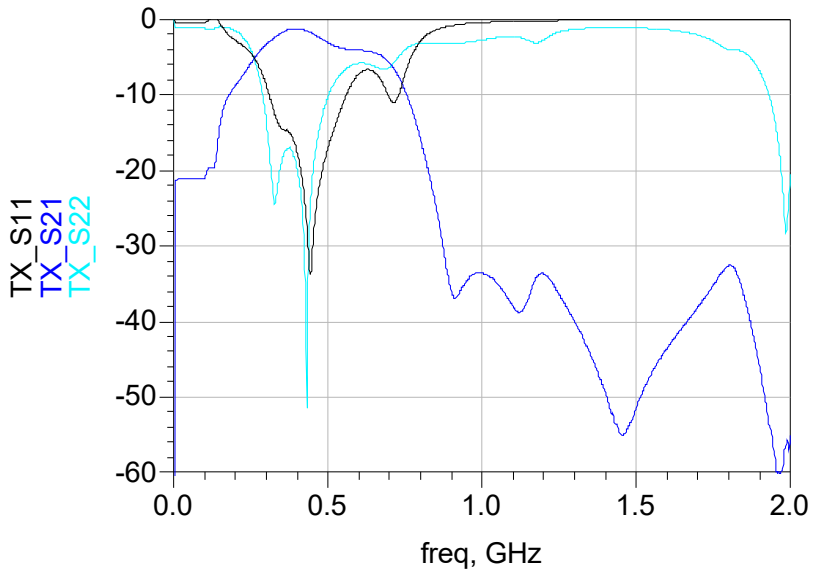
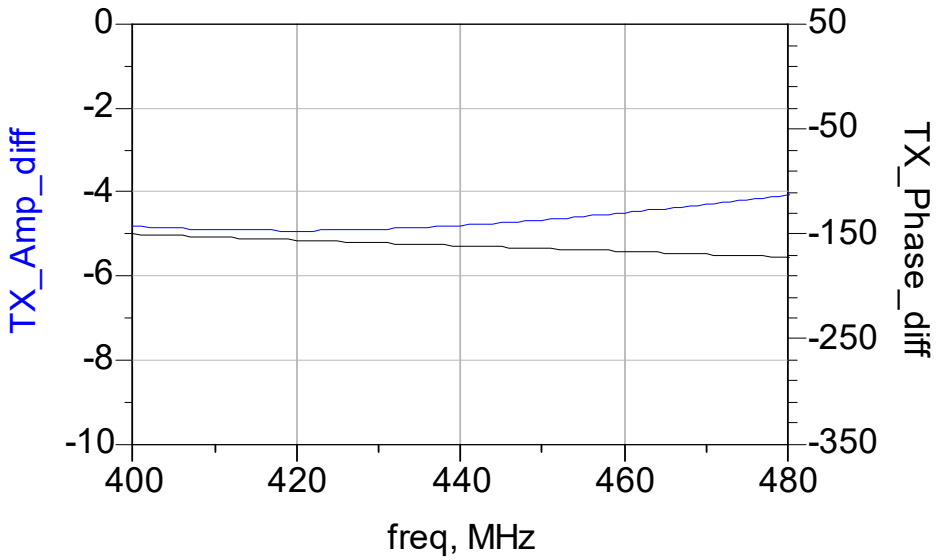
Typical Electrical Characteristics (T=25°C)

Transmit Mode Insertion Loss, Return Loss, and Attenuation



Transmit Mode Phase Balance, Amplitude Difference



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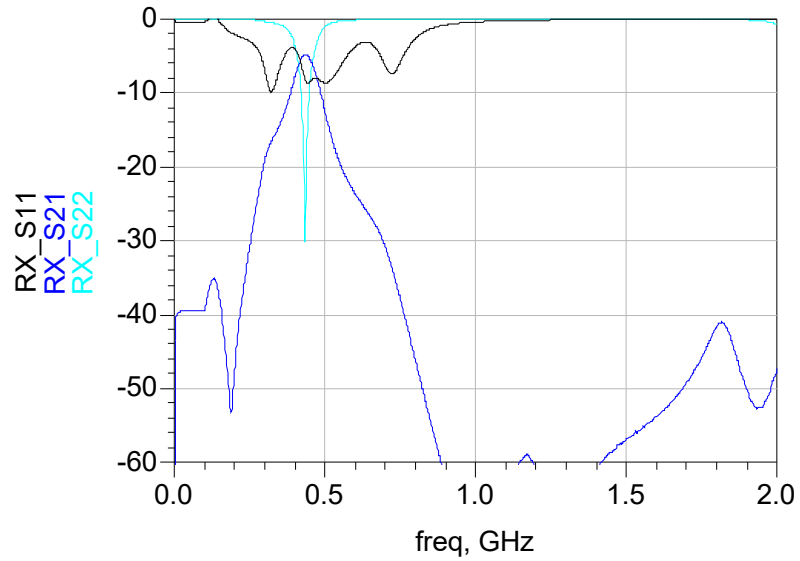
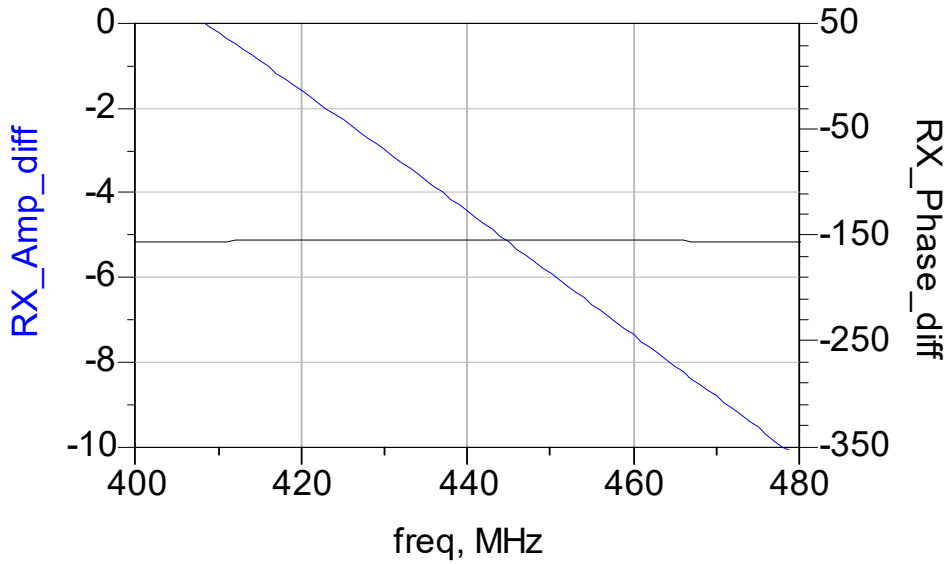
Typical Electrical Characteristics (T=25°C)

Receive Mode Insertion Loss, Return Loss, and Attenuation



Receive Mode Phase Balance, Amplitude Difference



Application Notes, Layout Files, and more
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Packaging information
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Terminal Pad Composition
100% Tin (Sn)

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