

High Frequency Ceramic Solutions

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

0434BM15B0027

Detail Specification: 2/26/2018

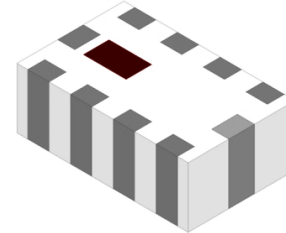
Page 1 of 6

Do you need a small sub-GHz or 2.4GHz antenna? Go to: 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 $+85^{\circ}\text{C}$	

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 $+85^{\circ}\text{C}$
Storage Period	18 months max
Recommended Storage Conditions for unused T&R product	$+5 \sim +35^{\circ}\text{C}$, Humidity 45~75%RH, 18 mos. max

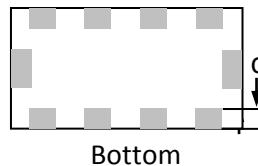
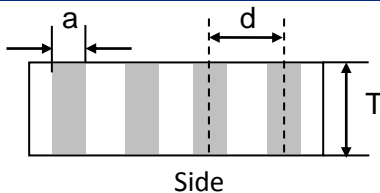
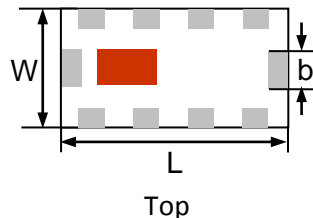
For more Silicon Labs matched balun-filters, go to: www.johansontechnology.com/silabs

Part Number Explanation

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

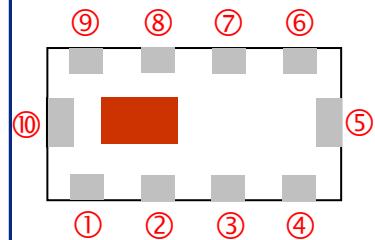
Mechanical Dimensions

	In	mm
L	0.079 ± 0.008	2.00 ± 0.20
W	0.049 ± 0.008	1.25 ± 0.20
T	0.028 ± 0.004	0.70 ± 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



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



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 1.0

2018 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

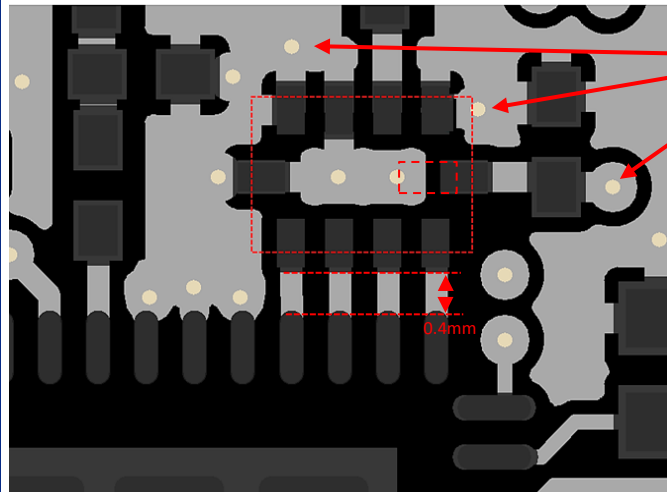
434MHz Impedance-Matched Balun+Filter Integrated Passive Device (IPD) for Silicon Labs EFR32 Chipset, EIA 0805.

0434BM15B0027

Detail Specification: 2/26/2018

Page 2 of 6

Pad-Soldermask Guidelines (with DC Feed)

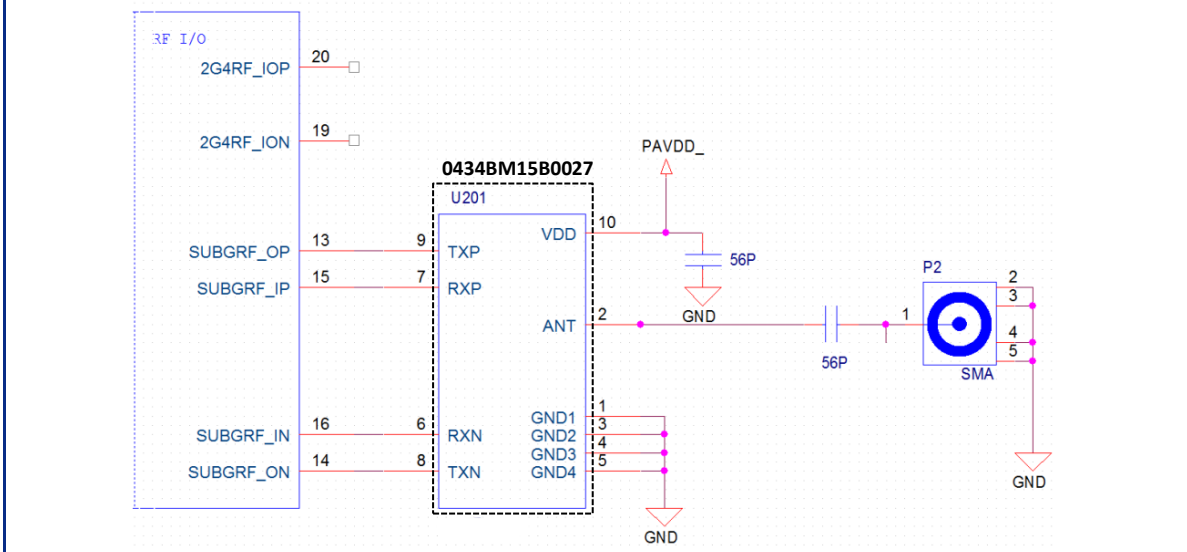


GND vias are crucial for filter harmonic attenuation

- GND
- Solder Pads
- GND via (ϕ 0.20)

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

PCB Reference Design Schematic



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



www.johansontechnology.com
 4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821
 Ver. 1.0

2018 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

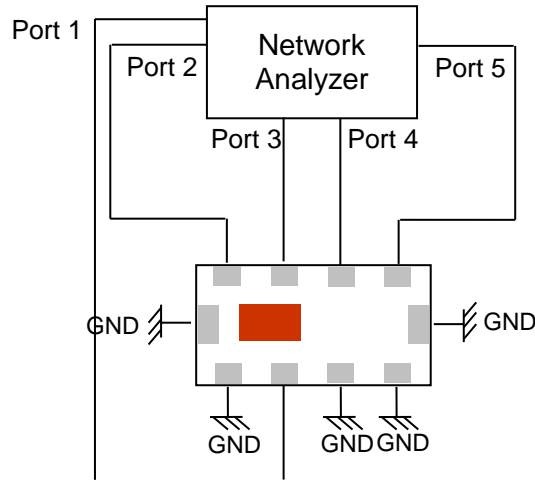
434MHz Impedance-Matched Balun+Filter Integrated Passive Device (IPD) for Silicon Labs EFR32 Chipset, EIA 0805.

0434BM15B0027

Detail Specification: 2/26/2018

Page 3 of 6

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 $Z_{IC,RX\ off}$

$$IL=TX\ S_{DS21}$$

$$RL=TX\ S_{SS11} / TX\ S_{DD22}$$

$$\text{Amplitude Difference} = dB(S(1,2)/S(1,3))$$

$$\text{Phase Balance} = \text{Phase}(S(1,2)/S(1,3))$$

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 $Z_{IC,TX\ off}$

$$IL=RX\ S_{DS21}$$

$$RL=RX\ S_{SS11} / RX\ S_{DD22}$$

$$\text{Amp_balance} = dB(S(1,4)/S(1,5))$$

$$\text{Phase_balance} = \text{Phase}(S(1,4)/S(1,5))$$

*Termination impedance included in s-parameters

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 1.0

2018 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

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

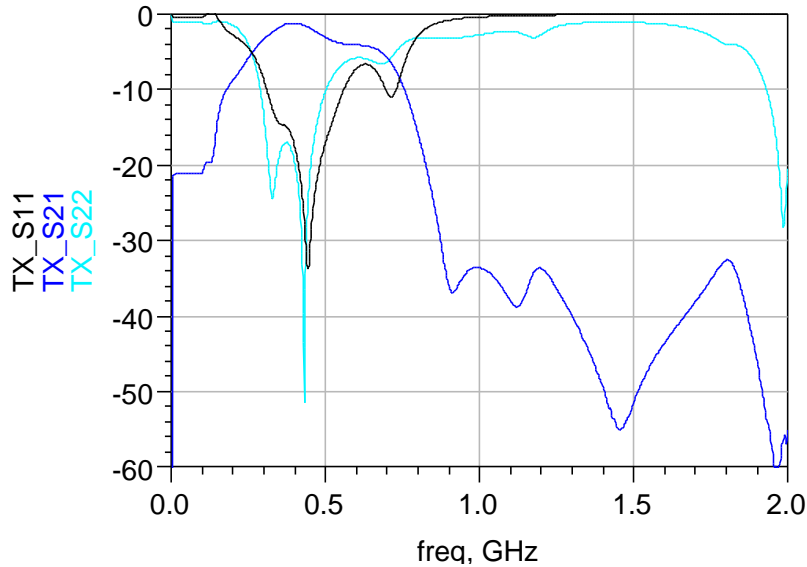
0434BM15B0027

Detail Specification: 2/26/2018

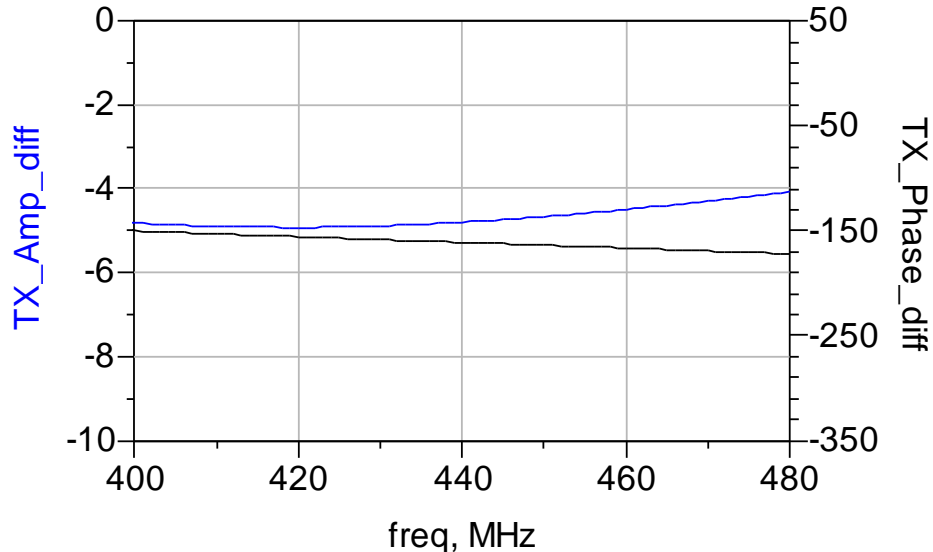
Page 4 of 6

Typical Electrical Characteristics (T=25°C)

Transmit Mode Insertion Loss, Return Loss, and Attenuation



Transmit Mode Phase Balance, Amplitude Difference



Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com

4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 1.0

2018 Johanson Technology, Inc. All Rights Reserved

High Frequency Ceramic Solutions

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

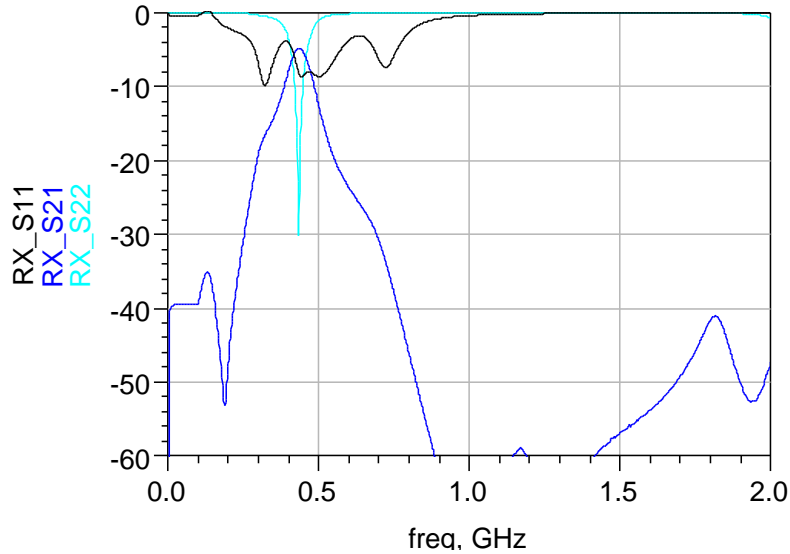
0434BM15B0027

Detail Specification: 2/26/2018

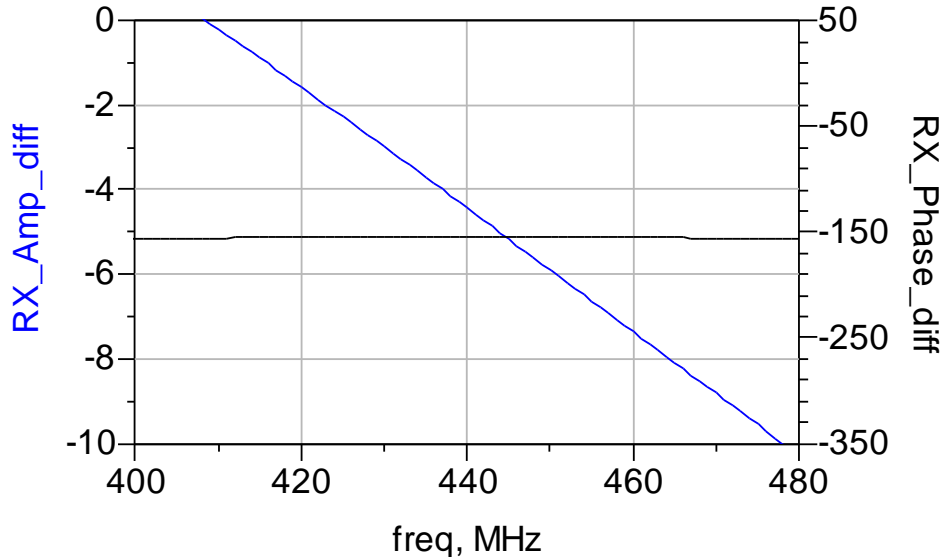
Page 5 of 6

Typical Electrical Characteristics (T=25°C)

Receive Mode Insertion Loss, Return Loss, and Attenuation



Receive Mode Phase Balance, Amplitude Difference



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



High Frequency Ceramic Solutions

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

0434BM15B0027

Detail Specification: 2/26/2018

Page 6 of 6

Application Notes, Layout Files, and more

www.johansontechnology.com/silabs

Small SMD 433MHz (or 900M, 2.4G, 5G) antennas

www.johansontechnology.com/antennas

RoHS Compliance

www.johansontechnology.com/rohs-compliance

Soldering Information

www.johansontechnology.com/ipcsoldering-profile

Antenna layout and tuning techniques

www.johansontechnology.com/tuning

Antenna layout review, tuning, and characterization services

www.johansontechnology.com/ipc-antenna-services

MSL Info

www.johansontechnology.com/msl-rating

Recommended Storage Condition and Max Shelf Life

www.johansontechnology.com/recommended-storage-conditions

Packaging information

www.johansontechnology.com/tape-reel-packaging

Terminal Pad Composition

100% Tin (Sn)

Would you like us to review your layout for free? Need an embedded antenna recommendation for your application?

Contact us at:

www.johansontechnology.com/ask-a-question

Johanson Technology, Inc. reserves the right to make design changes without notice.

All sales are subject to Johanson Technology, Inc. terms and conditions.



www.johansontechnology.com
4001 Calle Tecate • Camarillo, CA 93012 • TEL 805.389.1166 FAX 805.389.1821

Ver. 1.0

2018 Johanson Technology, Inc. All Rights Reserved



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.