

High Frequency Ceramic Solutions

Miniature Impedance-Matched Filter for Semtech SX1261, SX1262, LLCC68 for 868MHz and 915MHz. Integrated Passive Component (IPC)

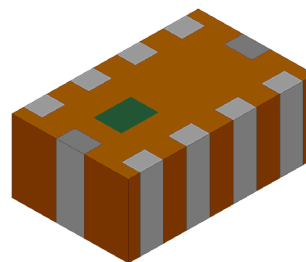
P/N 0900FM15K0039

Detail Specification: 3/23/2022

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General Specifications

Part Number	0900FM15K0039	
Frequency (MHz)	Tx (862 - 928)	Rx (862 - 928)
Insertion loss (dB)	1.1 Typ. (1.4 max.)	1.5 Typ. (2.0 max.)
Return Loss (dB)	10 min.	
Chipset-side Impedance (Ω)	Conjugate match to Semtech SX1261, SX1262, and LLCC68	
Antenna-side Impedance (Ω)	50	
Attenuation (dB)	20 min. @ 2Fo 40 min. @ 3Fo 40 min. @ 4Fo 30 min. @ 5Fo 20 min. @ 6Fo 15 min. @ 7Fo	
Recommended Storage Conditions unused Product on T&R*	+5 to +35°C Humidity: 45-75%RH 18 months max. in vacuum sealed bag 1 week (cumulatively) after opening.	



For the full app note and layout files, go to:
<https://www.johansontechnology.com/semtech>

Power Capacity (W)	2 max. (CW)
Operating Temperature	-40 to +85°C
Reel Quantity (pcs/reel)	4,000

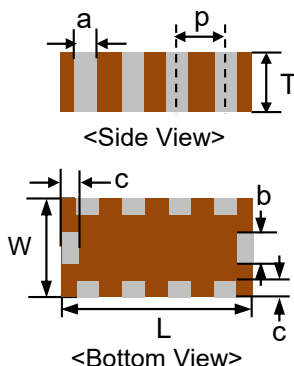
fa

Orderable Part Number Explanation

P/N Suffix	Packaging Style	Bulk (loose pcs.)	Suffix = S	E.g. 0900FM15K0039S
		T & R	Suffix = E	E.g. 0900FM15K0039E
	Termination Style	Ag	Suffix = None	E.g. 0900FM15K0039(E or S)

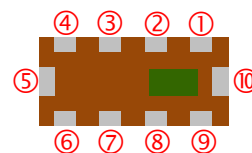
Mechanical Dimensions

	In	mm
L	0.079 ± 0.006	2.00 ± 0.15
W	0.049 ± 0.004	1.25 ± 0.10
T	0.031 ± 0.004	0.80 ± 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
p	0.020 ± 0.004	0.50 ± 0.10



Terminal Configuration

Pin		Pin	
1	RFO / VR_PA	6	SW_RFI (Ant In)
2	GND	7	GND
3	RFI_N	8	SW_RFO (Ant Out)
4	RFI_P	9	GND
5	GND	10	GND



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Ver. 1.0

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High Frequency Ceramic Solutions

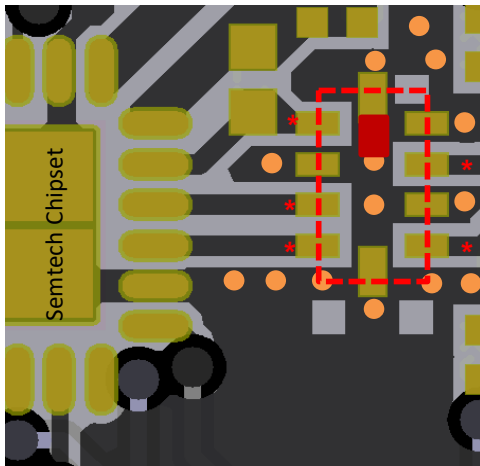
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Reference Layout



-  Johanson IPC
-  Solder Resist
-  Land
-  GND Via ($\phi 0.2\text{mm}$)

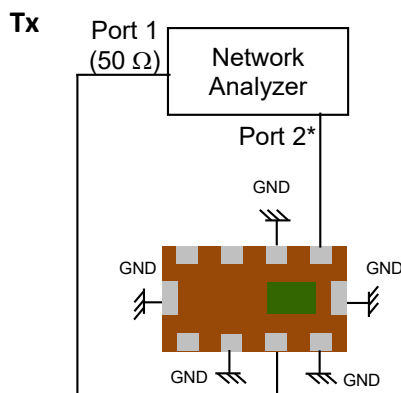
NOTE: GND via placement is crucial to the harmonic attenuation capability of the filter.

For gerber/layout files or a free layout review, contact our RF engineers directly at:
<https://www.johansontechnology.com/ask-a-question>

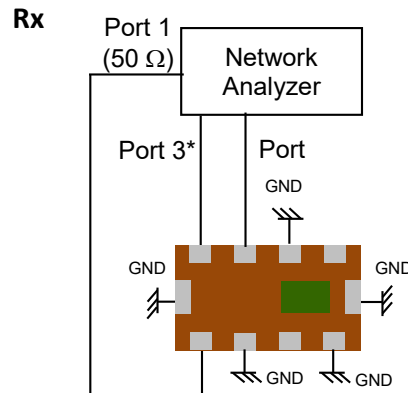
For App Notes, Reference Designs, and samples go to:
<https://www.johansontechnology.com/semtech>

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

Measurement Schematic (For Mass Production and Passive RF characteristics)



Port 1: Antenna Port
 Port 1 Terminate impedance: 50 Ω
 Port 2: Tx Port
 *Port 2 Terminate impedance:
 Complex conjugate match to RFO impedance



Port 1: Antenna Port
 Port 1 Terminate impedance: 50 Ω
 Ports 2 and 3: Rx Balanced Port
 *Port 2 and 3 Terminate impedance:
 Complex conjugate match to RFI balanced impedance/2

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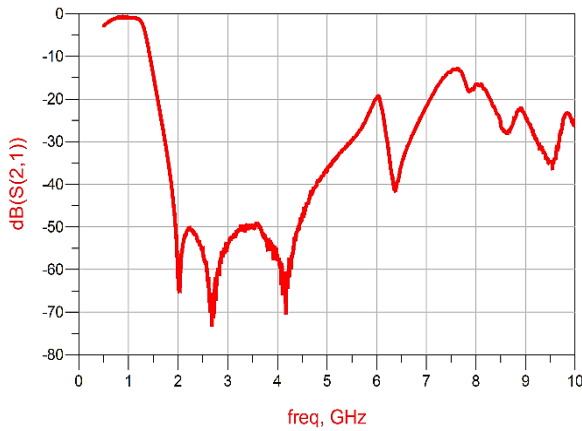
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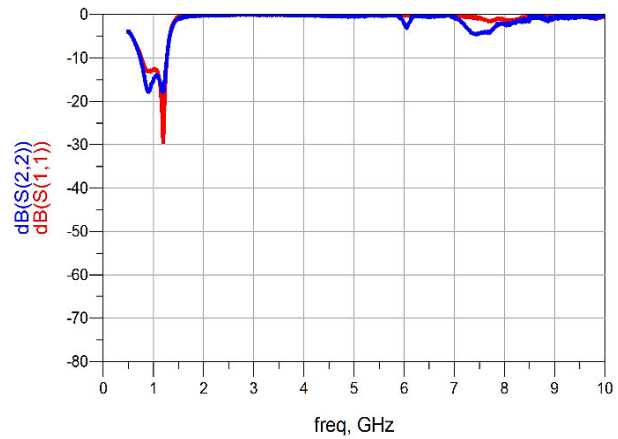
Typical Electrical Characteristics (T=25°C)

Tx mode:

Insertion Loss

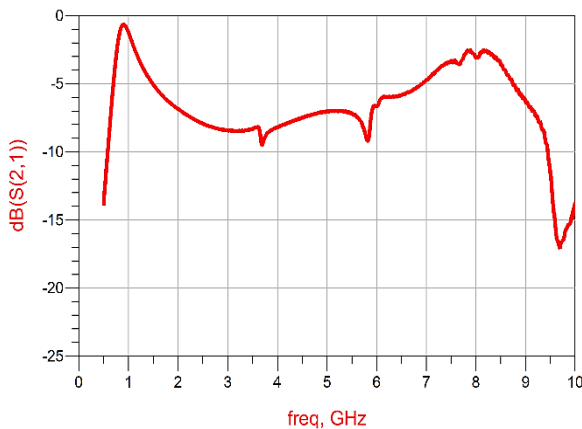


Return Loss

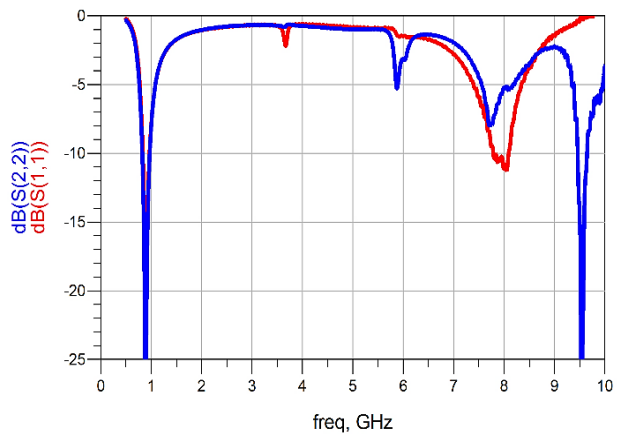


Rx mode:

Insertion Loss



Return Loss



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Application Notes, Layout Files, and more

<https://www.johansontechnology.com/semtech>

Packaging information

<https://www.johansontechnology.com/tape-reel-packaging>

Soldering Information

<https://www.johansontechnology.com/ipcsoldering-profile>

Silver Termination Information

<https://www.johansontechnology.com/silverleads-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/technical-notes/rohs-compliance>

Antenna layout and tuning techniques

<https://www.johansontechnology.com/tuning>

Johanson uses 6/6 RoHS Green Low-Temperature-Co-fired-Ceramic (LTCC) integrated passive technology in a monolithic structure. This component is 100% RF Tested, making it a more reliable system, impedance controlled environment, consistent-guaranteed RF performance in a very small RF front end-solution compared to an L/C discrete solution.

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