

# High Frequency Ceramic Solutions

## Miniature 2.45GHz Impedance Matched Front-End Filter Optimized for Semtech SX1280, SX1281

P/N 2450FM07D0034

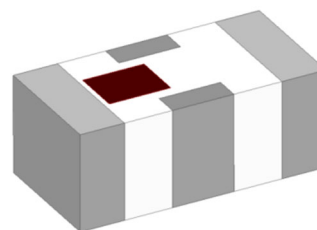
Detail Specification: 9/10/2019

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AEC-Q200 qualified component available, contact us at: [www.johansontechnology.com/ask-a-question](http://www.johansontechnology.com/ask-a-question)

### General Specifications

<b>Part Number</b>	2450FM07D0034
<b>Frequency (MHz)</b>	2400 - 2500
<b>Insertion loss (dB)</b>	0.75 Typ. (1.0 max.)
<b>Return Loss (dB)</b>	14 Typ. (10 min.)
<b>Input Impedance (Terminal Toward Chipset)</b>	Impedance matched to Semtech SX1280, SX1281
<b>Output Impedance</b>	50Ω
<b>Power Capacity</b>	3W max. (CW)



Attenuation (dB)		Reel Quantity	10,000 pcs
4800 - 5000MHz	35 Typ. (30 min.)	<b>Storage Temperature</b>	-40 to +85°C
7200 - 7500MHz	30 Typ. (25 min.)	<b>Operating Temperature</b>	-40 to +85°C
9600 - 10000MHz	30 Typ. (25 min.)	<b>Recommended Storage Conditions for unused T&amp;R product</b>	+5 to +35°C, Humidity: 45-75%RH, 18 mo. Max.
12000 - 12500MHz	25 Typ. (20 min.)		
14400 - 15000MHz	9.5 Typ. (4.5 min.)		
16800 - 17000MHz	8.0 Typ. (3.0 min.)		

This component is internally DC blocked. External DC blocking cap not needed!

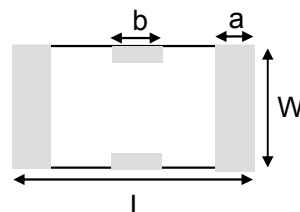
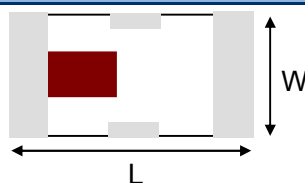
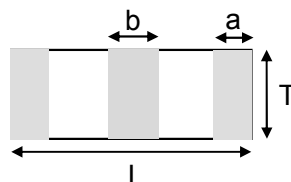
### Part Number Explanation

P/N Suffix	Packaging Style	Bulk	Suffix = S	E.g. 2450FM07D0034S
		T & R	Suffix = T	E.g. 2450FM07D0034T
	Termination Style	100% Tin	Suffix = None	E.g. 2450FM07D0034(T or S)

You can download the measured s-parameter file for this component at: <https://www.johansontechnology.com/semtech>

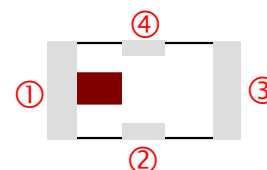
### Mechanical Dimensions

	In	mm
<b>L</b>	0.039 ± 0.002	1.00 ± 0.05
<b>W</b>	0.020 ± 0.002	0.50 ± 0.05
<b>T</b>	0.016 max.	0.40 max.
<b>a</b>	0.007 ± 0.004	0.18 ± 0.10
<b>b</b>	0.010 ± 0.004	0.25 ± 0.10



### Terminal Configuration

No.	Function
1	IN (Toward the chipset)
2	GND
3	OUT (Toward the antenna)
4	GND



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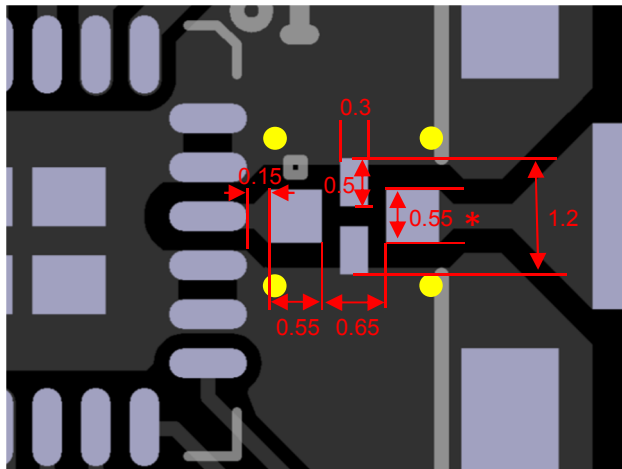
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## Mounting Pad Dimensions



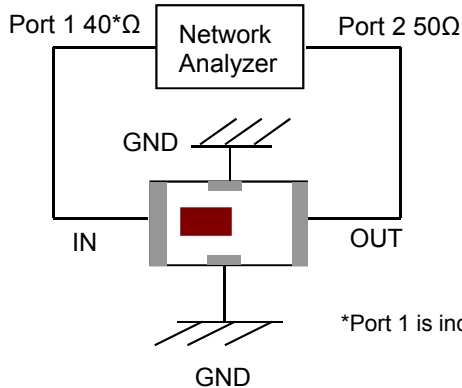
-  Solder Resist
-  Land
-  Through-hole ( $\phi$  0.20)

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

Units in mm

Do you need the layout files of the above? Go to: <https://www.johansontechnology.com/ask-a-question>

## Measurement Schematic



Port 1: Filter IN (red marking side toward chipset)  
Port 2: Filter OUT (toward antenna)

\*Port 1 is indeed 40ohms!

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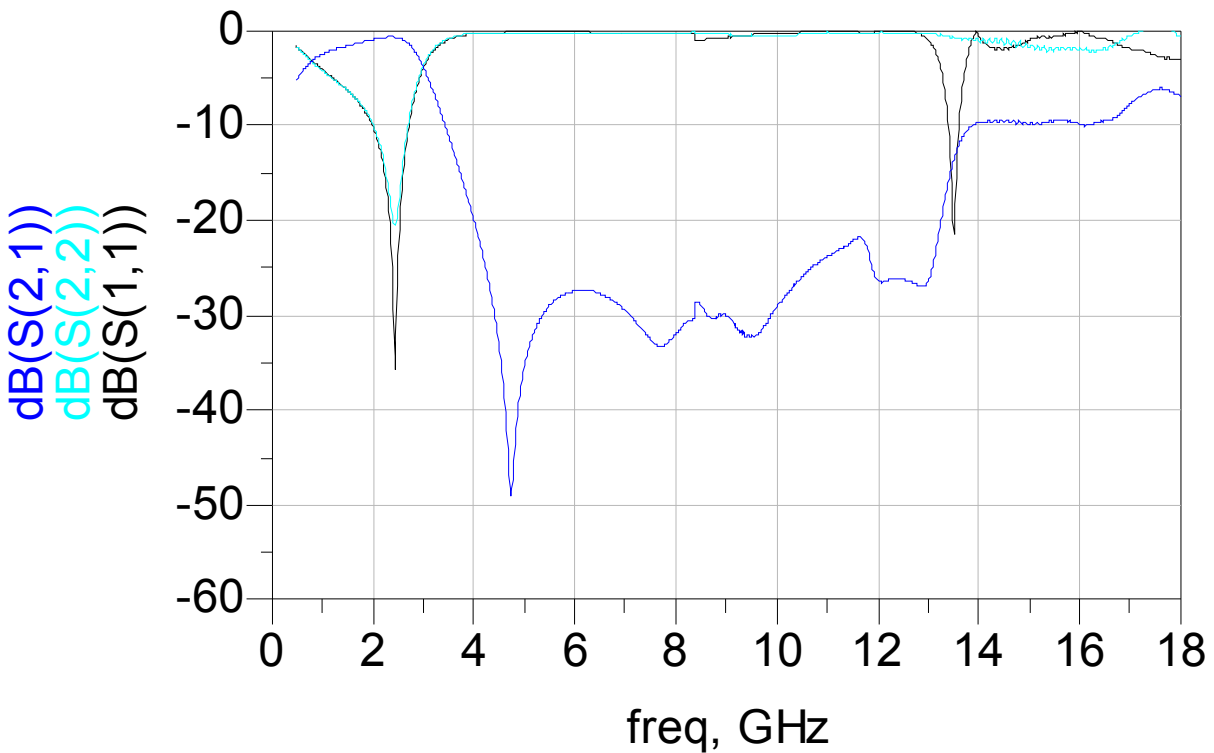
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## Typical Electrical Characteristics (T=25°C)



If you would like recommendation on a mini 2.4G embedded antenna, free layout verification, reference design files (gerbers, schematic, etc) or s-parameter files, please contact us at:

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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>

## 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/rohs-compliance>

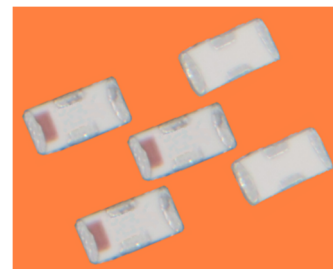
## Antenna layout and tuning techniques

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

## Antenna layout review, tuning, and characterization services

<https://www.johansontechnology.com/ipc-antenna-services>

Johanson uses 6/6 RoHS Green Low-Temperature-Co-fired-Ceramic (LTCC) integrated passive technology in a 4-pin (Sn plated) 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 the L/C discrete solution.



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