



**THE DATASHEET OF
2450FM07D0034001T**



High Frequency Ceramic Solutions

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

P/N 2450FM07D0034

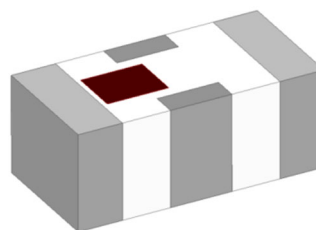
Detail Specification: 9/10/2019

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AEC-Q200 qualified component available, contact us at: www.johansontechnology.com/ask-a-question

General Specifications

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



| Attenuation (dB) | | Reel Quantity | Storage Temperature |
|------------------|---------------------|---|--|
| 4800 - 5000MHz | 35 Typ. (30 min.) | 10,000 pcs | -40 to +85°C |
| 7200 - 7500MHz | 30 Typ. (25 min.) | Operating Temperature | -40 to +85°C |
| 9600 - 10000MHz | 30 Typ. (25 min.) | Recommended Storage Conditions for unused T&R product | +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!

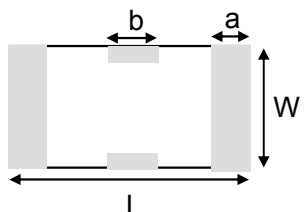
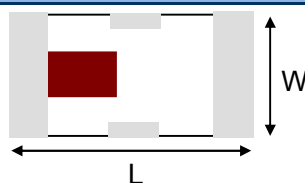
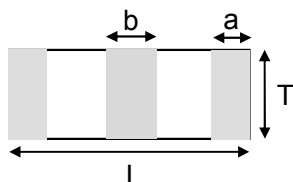
Part Number Explanation

| 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>

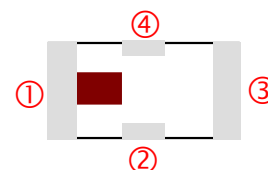
Mechanical Dimensions

| | In | mm |
|---|---------------|-------------|
| L | 0.039 ± 0.002 | 1.00 ± 0.05 |
| W | 0.020 ± 0.002 | 0.50 ± 0.05 |
| T | 0.016 max. | 0.40 max. |
| a | 0.007 ± 0.004 | 0.18 ± 0.10 |
| 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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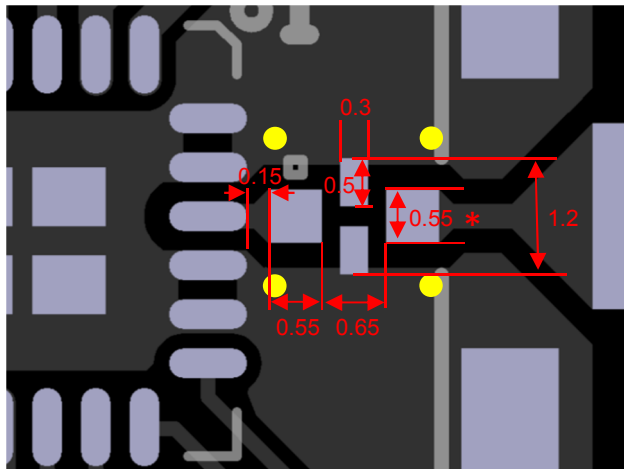
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Mounting Pad Dimensions

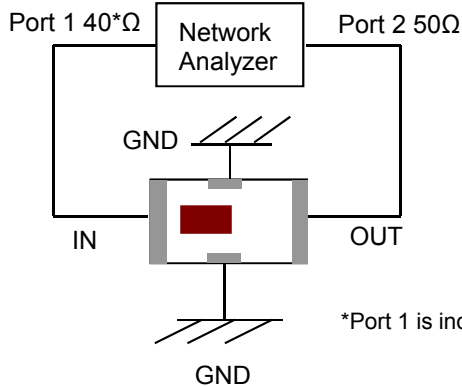


-  Solder Resist
-  Land
-  Through-hole (ϕ 0.20)

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

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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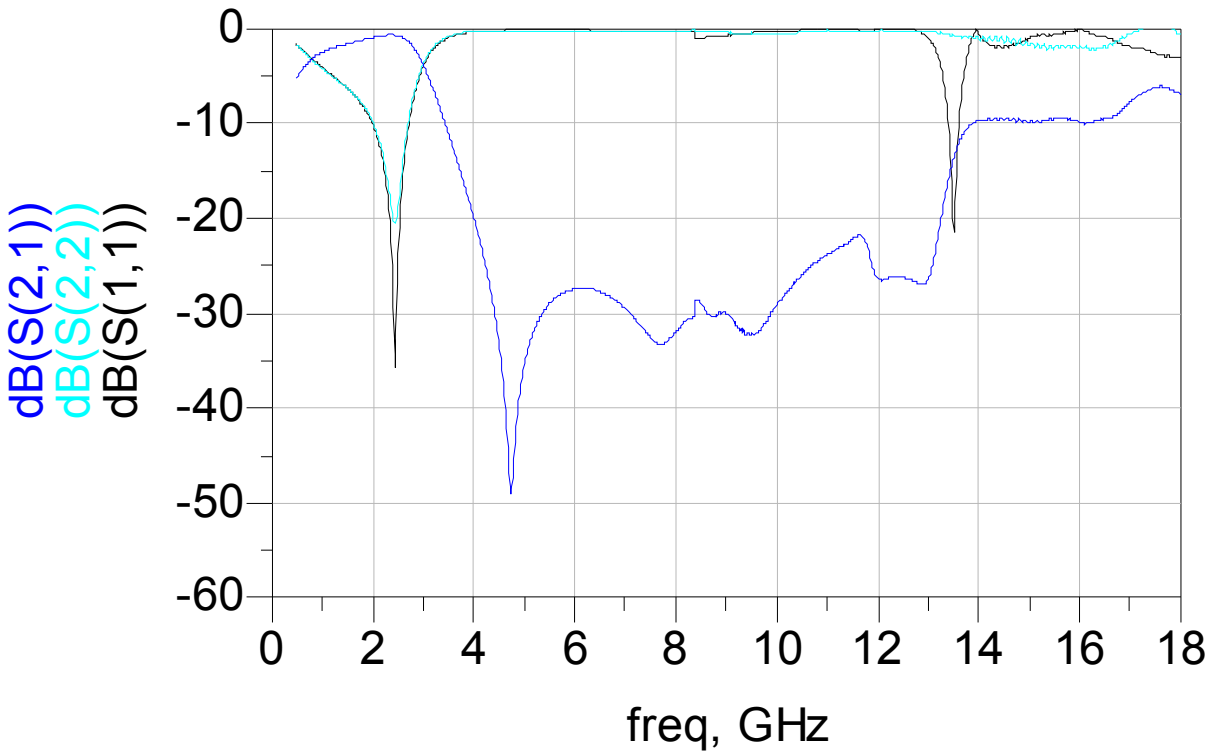
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Typical Electrical Characteristics (T=25°C)



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>

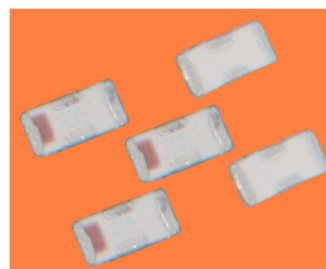
Antenna layout and tuning techniques

<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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