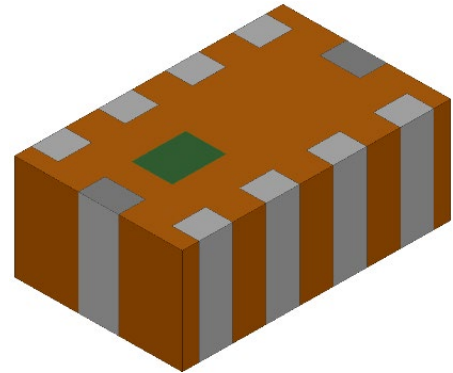


## 902 – 928 MHz Impedance-matched Filter for Semtech SX126x Series Transceiver Chipsets

- 915MHz ISM band only
- SMD, EIA 0805
- Designed for use with Semtech chipset part numbers:
  - SX1261
  - SX1262
  - LLCC68



### General Specifications<sup>1</sup>

Passband Frequency (MHz)	902 - 928
Impedance, Antenna-side ( $\Omega$ )	50
Impedance, Transceiver-side ( $\Omega$ )	Impedance match to Semtech SX1261, SX1262, LLCC8 chipsets
Insertion Loss (dB)	0.8 Typ. (1.4 Max.)
Return Loss (dB)	12 Min.
Attenuation	
Frequency Range (MHz)	1724 – 1856
Attenuation (dB)	25 Min.
Frequency Range (MHz)	2586 – 2784
Attenuation (dB)	35 Min.

<sup>1</sup> Typical value represents average measurement at 25°C. Min./Max. values represent measurements within the operating temperature specification unless stated otherwise.

**Maximum Ratings**

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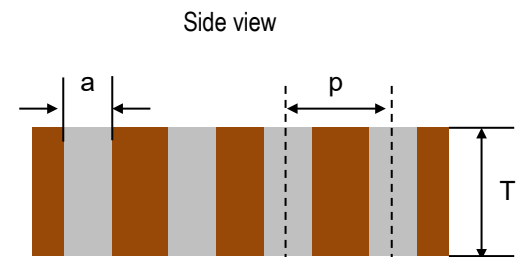
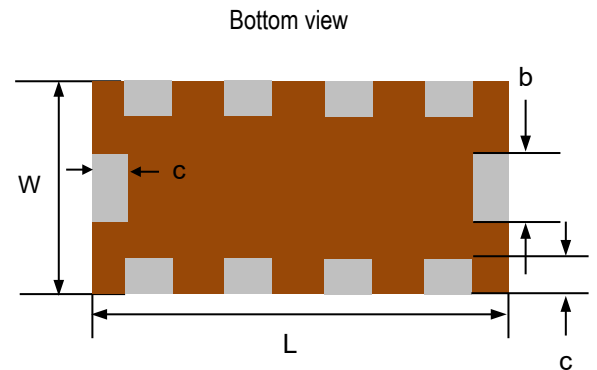
Power Capacity (W)	2 Max. (CW)
Operating Temperature (°C)	-40 to +85
Recommended Storage Conditions post-installation (°C)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product <sup>2</sup>	45% - 75% RH +5 to +35 °C 18 Months Max. Vacuum-sealed Bag

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<sup>2</sup> This is a silver-leaded part. Please keep un-used parts in vacuum sealed bags. For more information go to:  
<https://www.johansontechnology.com/silverleads-profile>

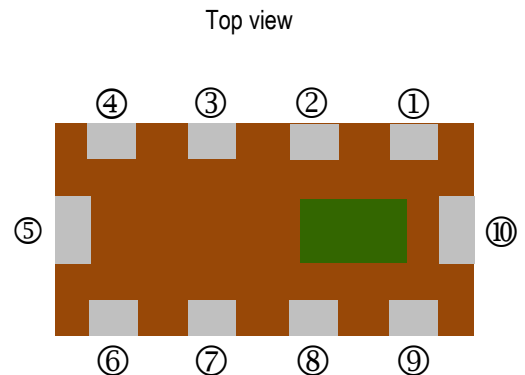
**Mechanical Dimensions**

	Inches			Millimeters		
<b>L</b>	0.079	± 0.006	2.00	± 0.15		
<b>W</b>	0.049	± 0.004	1.25	± 0.10		
<b>T</b>	0.031	± 0.004	0.80	± 0.10		
<b>a</b>	0.010	± 0.004	0.25	± 0.10		
<b>b</b>	0.012	± 0.006	0.30	± 0.15		
<b>c</b>	0.008	+0.004/-0.006	0.20	+0.10/-0.15		
<b>p</b>	0.020	± 0.004	0.50	± 0.10		

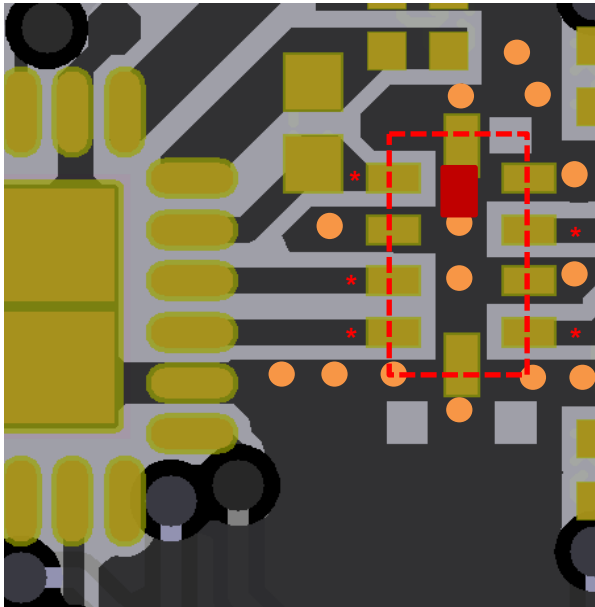





**Terminal Configuration**

Pin Number	Function
1	RFO
2	GND
3	RFI_N
4	RFI_P
5	GND
6	SW_RFI
7	GND
8	SW_RFO
9	GND
10	GND



**PCB Reference Design Layout**



-  Solder Resist
-  Land
-  GND Via ( $\varnothing$  0.2mm)

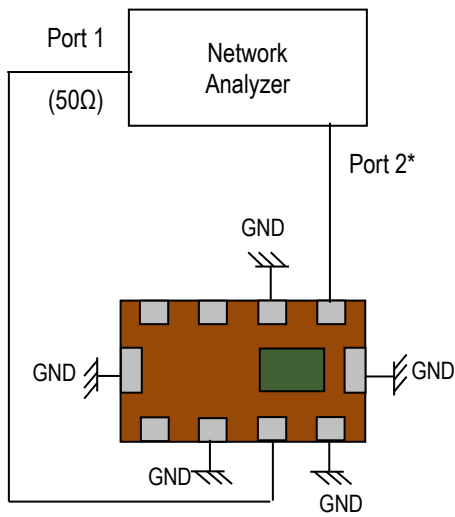
**NOTE:** GND via placement is crucial to the harmonic attenuation capability of the filter.

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

If you would like the full reference design package or have any questions, contact our application engineers at <https://www.johansontechnology.com/ask-a-question>

**Measuring Diagram**

**TX Path**



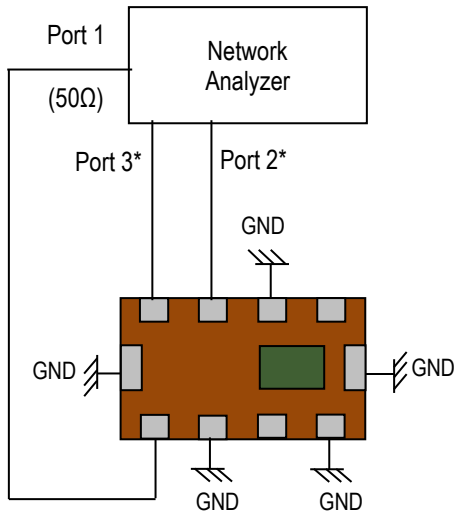
Port 1: Antenna port

Port 1 Load impedance: 50Ω

Port 2: RFO

\*Port 2 Load impedance: Complex conjugate match to SEMTECH SX1261, SX1262, LLCC68

**RX Path**



Port 1: Antenna port

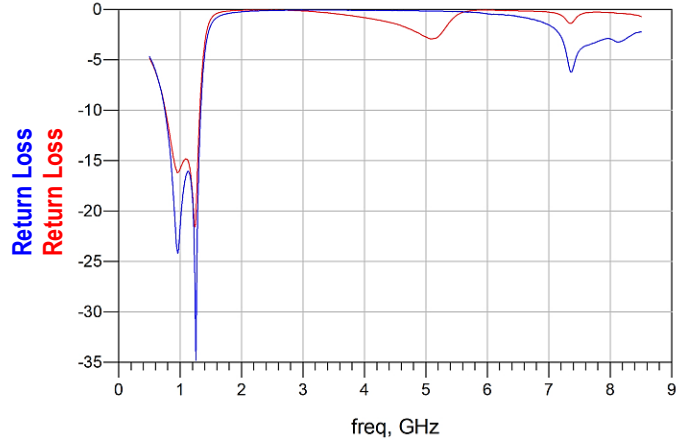
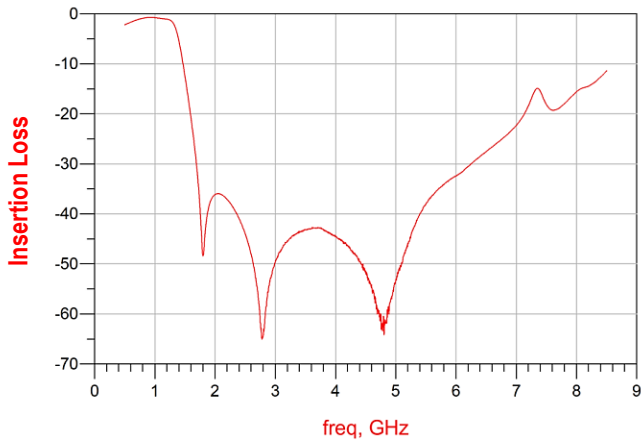
Port 1 Load impedance: 50Ω

Ports 2 and 3: RFI Balanced Port

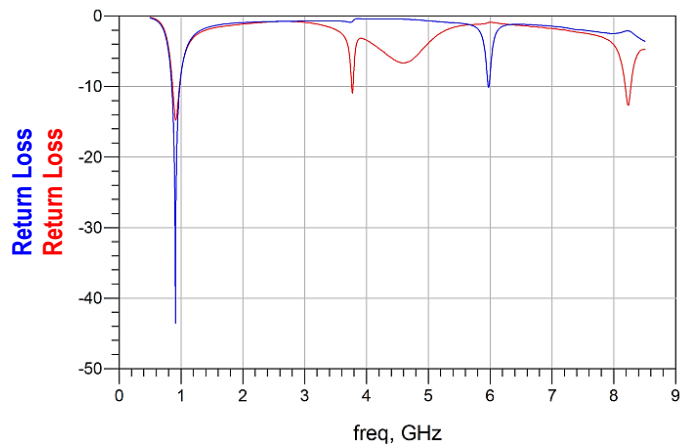
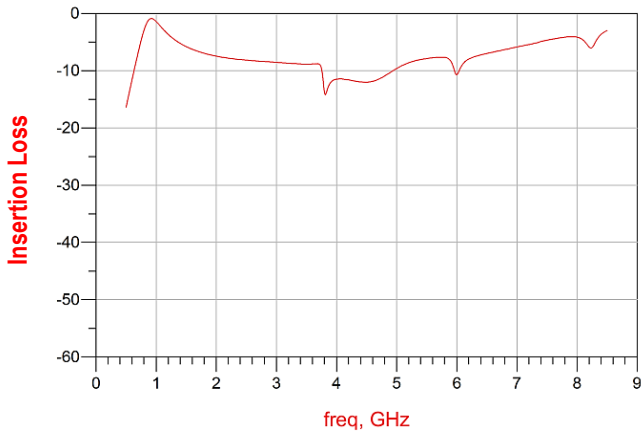
\*Port 2 and 3 Load impedance: Complex conjugate match to SEMTECH SX1261, SX1262, LLCC68

**RF Measurement**

**RFO Path Insertion Loss, Return Loss**



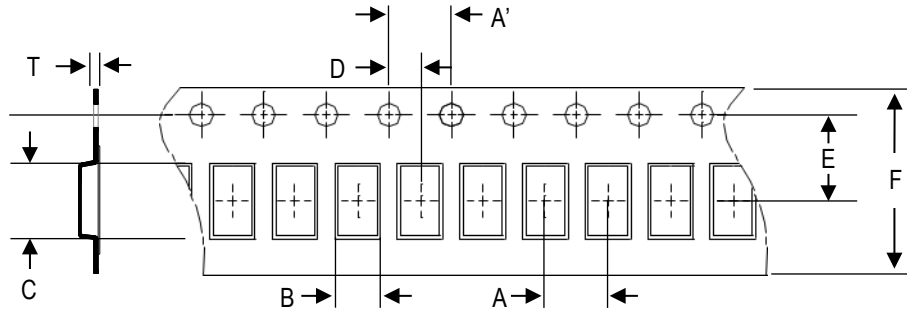
**RFI Path Insertion Loss, Return Loss**



S-parameter and layout files available upon request. Please contact <https://www.johansontechnology.com/ask-a-question>

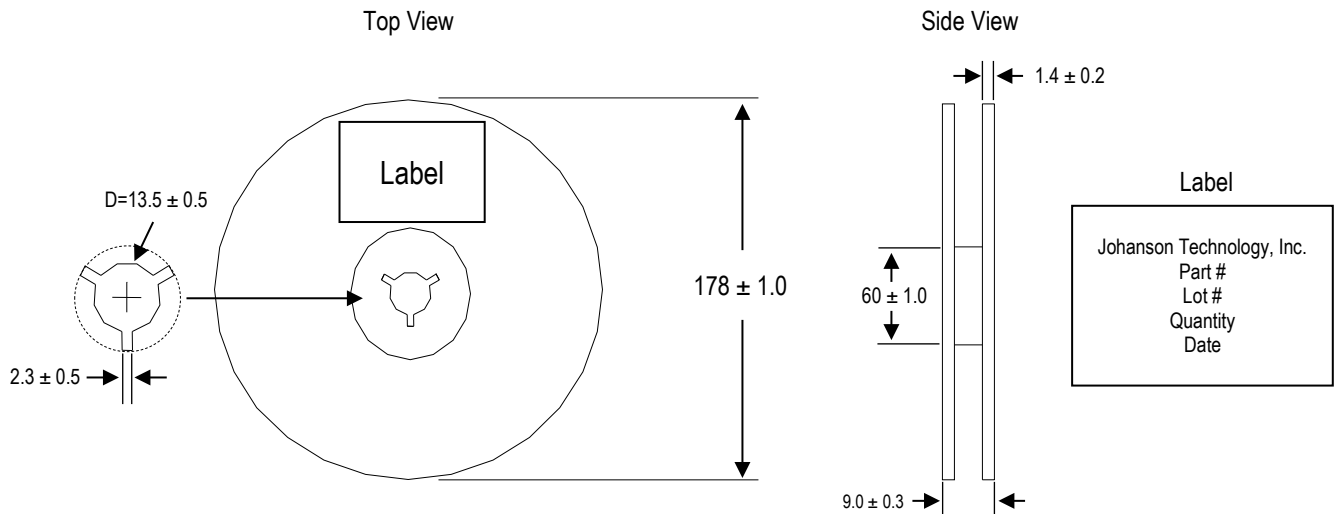
**Tape and Reel Specification (Units in mm)**

**Tape Dimensions**

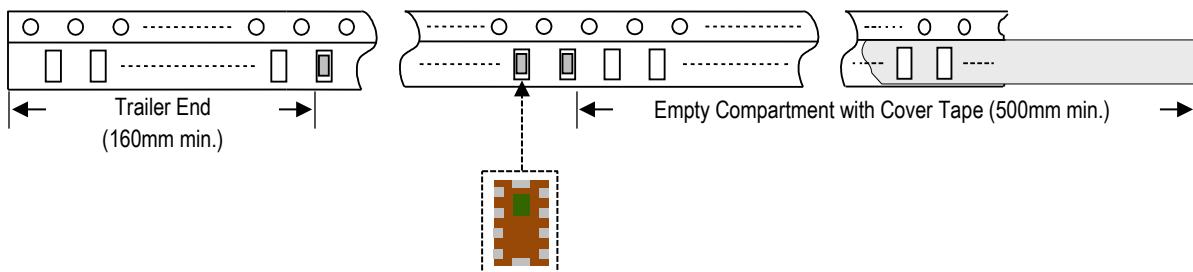


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0±0.1	4.0±0.1	1.35±0.05	2.15±0.05	2.0±0.05	3.5±0.1	8.0±0.1	1.00±0.05	4,000pcs	Plastic (Embossed)

**Reel Dimensions**



**Leader and Trailer Dimensions**



**Orderable Part Number**

Packaging Style	Part Number
Bulk (loose pcs.)	0900FM15D0039001B
T & R (7" Reel Embossed Tape)	0900FM15D0039001E (Qty: 4,000 pcs./reel)

**Important Links**

[0900FM15D0039001E Product Page](#)

[0900FM15D0039001E Application Note AN100](#)

[900MHz Chip Antennas](#)

[Antenna Tuning, Optimization, and Validation Services](#)

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

[Recommended Storage Condition and Max Shelf Life](#)

[RoHS Compliance](#)