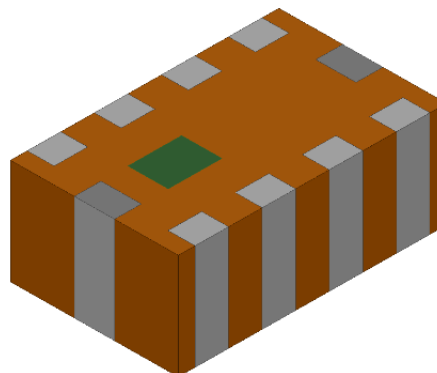




862 – 928 MHz Impedance-matched Filter for Semtech SX126x Series Transceiver Chipsets

- 862 - 928 MHz passband
- Designed for Semtech chipsets:
 - SX1261
 - SX1262
 - LLCC68
- For Sub-GHz ISM applications such as sensors, asset tracking, IoT, general consumer electronics, etc.
- EIA 0805 SMD (2.0mm x 1.25mm x 0.8mm)



General Specifications¹

		Impedance match for:
Impedance, Transceiver Side (Ω)	862 - 928 MHz	SX1261 SX1262 LLCC68
Impedance, Antenna Side (Ω)	862 - 928 MHz	50
Insertion Loss, TX (dB)	862 - 928 MHz	1.4 Max. (1.1 Typ.)
Insertion Loss, RX (dB)	862 - 928 MHz	2.0 Max (1.5 Typ.)
Return Loss (dB)	862 - 928 MHz	10 Min.
Attenuation (dB)	1724 – 1856 MHz	20 Min.
	2586 – 2784 MHz	40 Min.
	3448 – 3712 MHz	40 Min.
	4310 – 4640 MHz	30 Min.
	5172 – 5568 MHz	20 Min.
	6034 – 6496 MHz	15 Min.

Maximum Ratings

Power Capacity (W)	2 Max. (CW)
Operating Temperature ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions Post-installation ($^{\circ}\text{C}$)	-40 to +85
Recommended Storage Conditions and Period for Unused T&R Product ²	45% - 75% RH
	+5 to +35 $^{\circ}\text{C}$
	18 Months Max.

¹ Typical value represents average measurement at 25 $^{\circ}\text{C}$. Min./Max. values represent measurements over specified operating temperature.

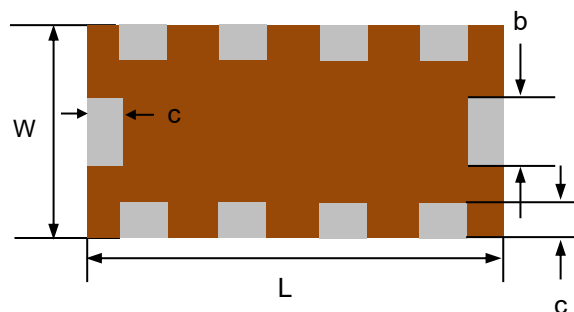
² This is a silver-leaded part. Storage period is 18 months in vacuum sealed bag and 1 week after opened. Please keep un-used parts in vacuum sealed bags. SAC 305 solder is recommended. For more information go to: <https://www.johansontechnology.com/silverleads-profile>



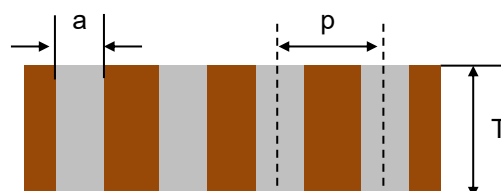
Mechanical Dimensions

	Inches			Millimeters		
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	+0.10/-0.15	
p	0.020	±	0.004	0.50	±	0.10

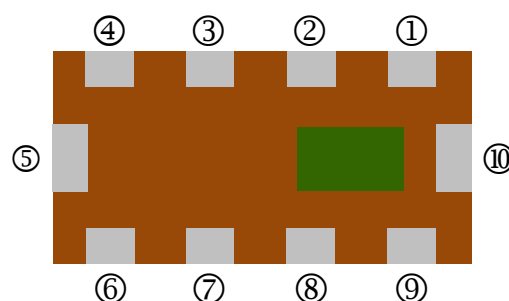
Bottom view



Side view



Top view



Terminal Configuration³

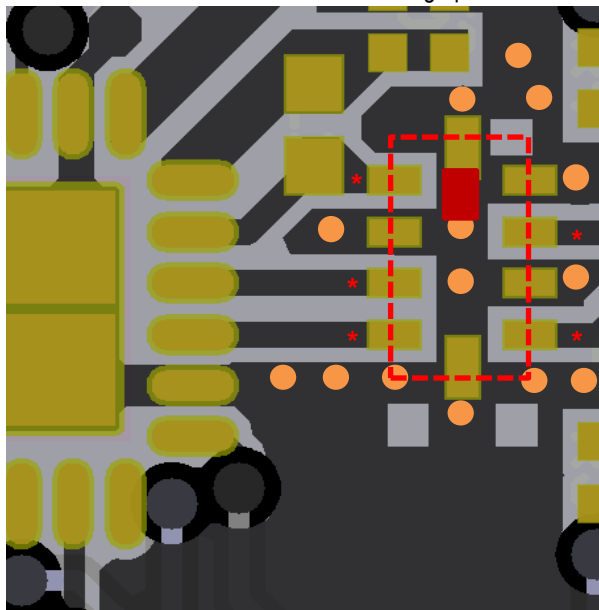
Pin Number	Function
1	RFO
2	GND
3	RFI_N
4	RFI_P
5	GND
6	SW_RFI
7	GND
8	SW_RFO
9	GND
10	GND

³ The termination type is Silver. Go to: <https://www.johansontechnology.com/ipcsoldering-profile> for Typical Soldering Profile.



Recommended PCB Layout

Note: Mount device with colored mark facing up.



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

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

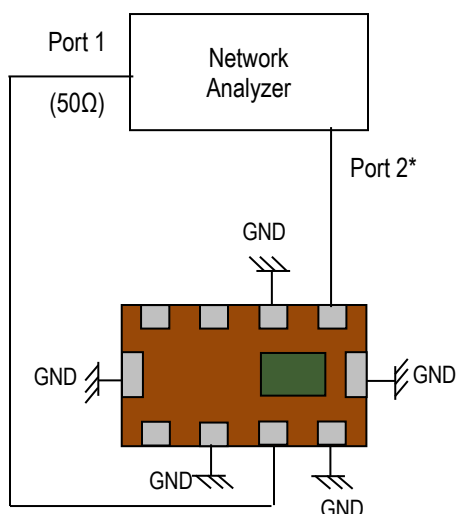
* Transmission line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

If you'd like the CAD PCB layout or have any questions,
contact our application engineers at <https://www.johansontechnology.com/ask-a-question>



Measuring Diagram

TX Path



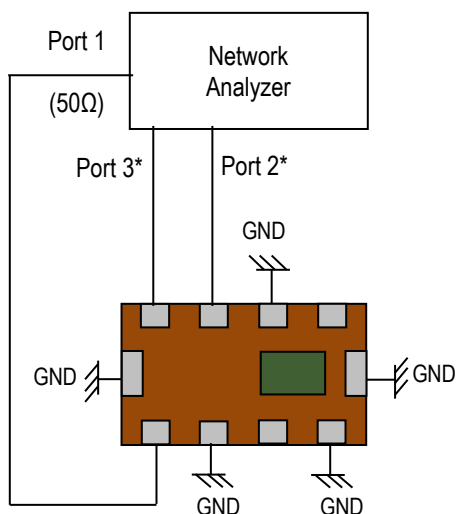
Port 1: Antenna port

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

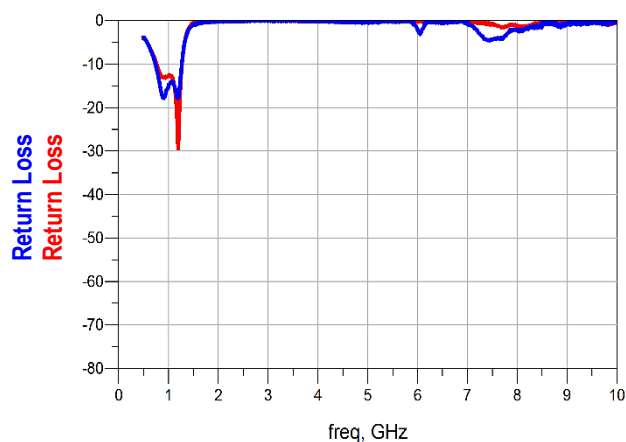
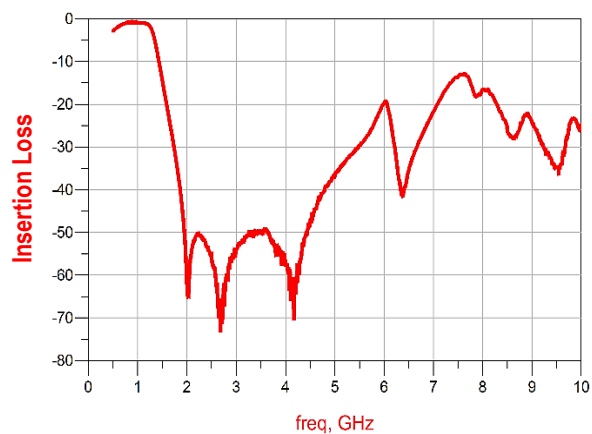
Port 1 Load impedance: 50Ω

Ports 2 and 3: RFI Balanced Port

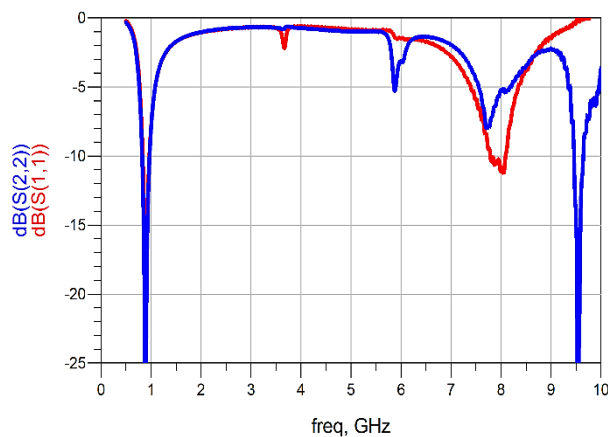
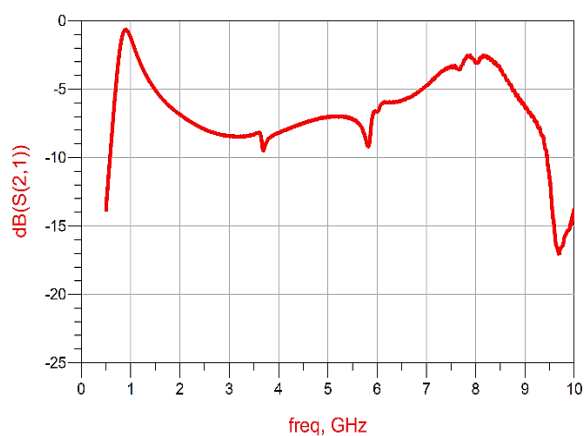
*Port 2 and 3 Load impedance: Complex conjugate match to SEMTECH SX1261, SX1262, LLCC68

RF Measurement (T = 25°C)

RFO Path Insertion Loss, Return Loss



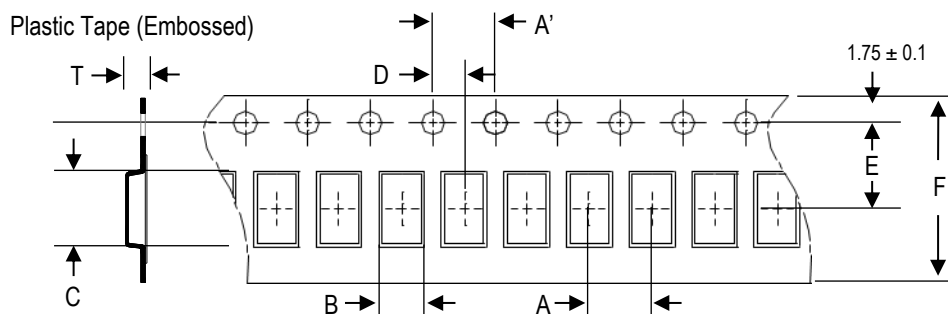
RFI Path Insertion Loss, Return Loss



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

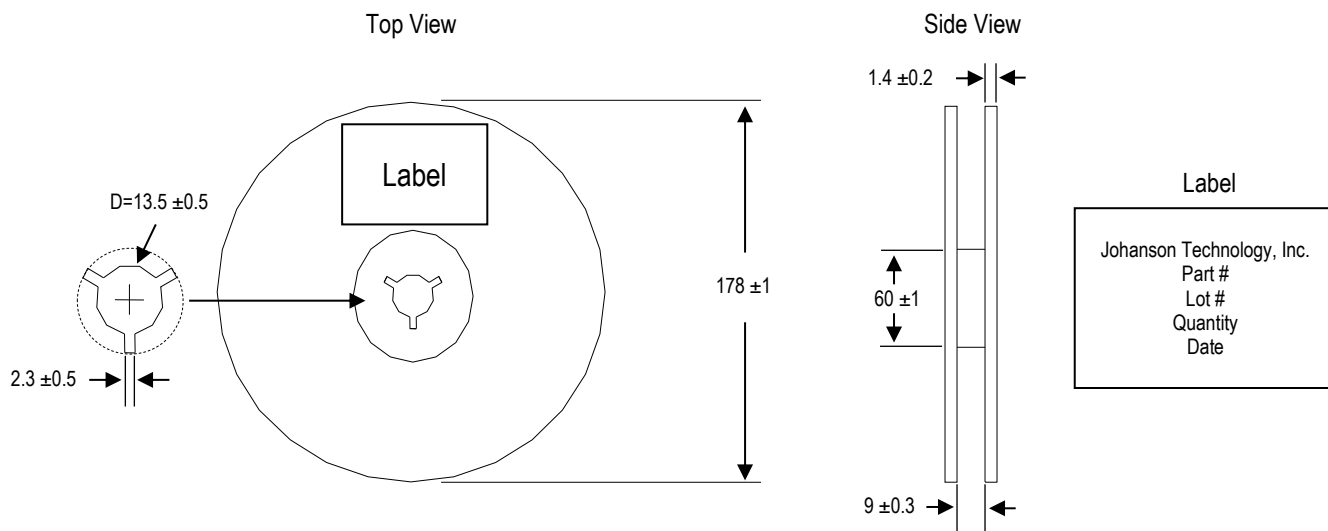
Tape and Reel Specification (Units in mm)

Tape Dimensions

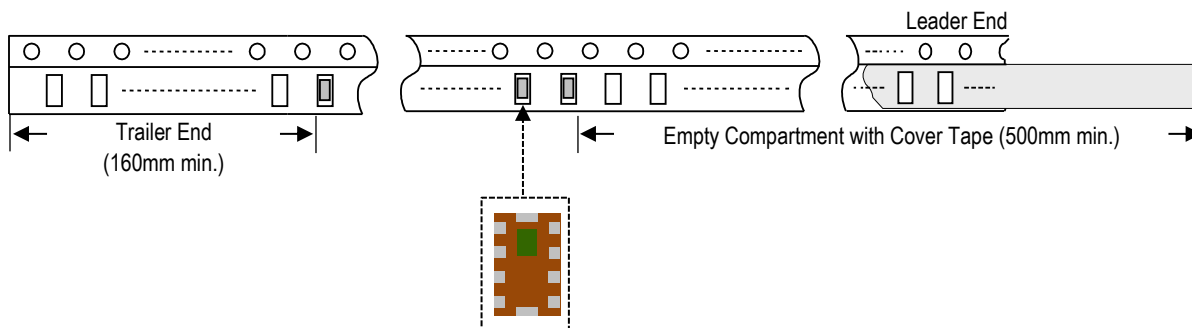


A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
4.0 ± 0.1	4.0 ± 0.1	1.35 ± 0.05	2.15 ± 0.05	2.0 ± 0.05	3.5 ± 0.1	8.0 ± 0.1	1.00 ± 0.05	4,000pcs	Plastic (Embossed)

Reel Dimensions



Leader and Trailer Dimensions



Orderable Part Number

Packaging Style	Part Number	Termination
Bulk (loose pcs.)	0900FM15K0039001B	Silver
T & R (7" Reel Embossed Tape)	0900FM15K0039001E (Qty: 4,000 pcs/reel)	

Important Links

[0900FM15K0039001E Product Page](#)

[More Semtech Reference Designs](#)

[Sub-GHz Antennas](#)

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

[Soldering Information](#)

[MSL Information](#)

[Packaging Information](#)

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

[RoHS Compliance](#)

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