



- **Ideal Front-End Filter for Wireless Receiver in the US and UK**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Surface-Mount Ceramic Case with 50 mm² Footprint**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**



The RF1171D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 418.0 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superregen. Typical applications of these receivers are wireless remote-control and security devices operating in the USA under FCC Part 15.

This coupled-resonator filter (CRF) uses selective null placement to provide suppression, typically greater than 40 dB, of the LO and image spurious responses of superhet receivers with 10.7 MHz IF. RFM's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C	f_c	1, 2, 3		418.0		MHz
Minimum I.L. (314.82-315.22 MHz)	IL_{min}	1, 3		1.6	2.5	dB
Passband (relative to IL_{min})	417.83 - 418.25	1, 3		1.0		dB
	417.78 - 418.30			1.5		
Pass bandwidth (relative to IL_{min})	BW_3	1, 3	500	620	800	kHz
Attenuation: (relative to IL_{min})	10.00 - 400.00 MHz	1, 3	50	60		dB
	400.00 - 413.00 MHz		30	35		
	413.00 - 417.00 MHz		13	15		
	419.00 - 426.00 MHz		10	11		
	426.00 - 435.00 MHz		35	38		
	435.00 - 1000 MHz		50	56		
Impedance at f_c ; Input	$Z_{IN}=R_{IN}/C_{IN}$					Ω/pF
Impedance at f_c ; Output	$Z_{OUT}=R_{OUT}/C_{OUT}$	1				Ω/pF
Frequency Aging	Absolute Value during the First Year		fA	5	≤10	ppm/yr
Lid Symbolization (in addition to Lot and/or Date Codes)						
Standard Reel Quantity	Reel Size 7 Inch	9		500 Pieces/Reel		
	Reel Size 13 Inch			3000 Pieces/Reel		



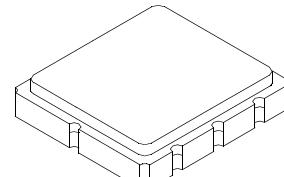
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with VSWR ≤ 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency, f_c . Note that insertion loss, bandwidth, and passband shape are dependent on the impedance matching component values and quality.
2. The frequency f_c is defined as the midpoint between the 3dB frequencies.
3. Unless noted otherwise, specifications apply over the entire specified operating temperature range. (-40 to +90°C)
4. The turnover temperature, T_O , is the temperature of maximum (or turnover) frequency, f_O . The nominal frequency at any case temperature, T_c , may be calculated from: $f = f_O [1 - FTC (T_O - T_c)^2]$.
5. Frequency aging is the change in f_c with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing significantly in subsequent years.
6. The design, manufacturing process, and specifications of this device are subject to change without notice.
7. One or more of the following U.S. Patents apply: 4,54,488, 4,616,197, and others pending.
8. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
9. Tape and Reel Standard Per ANSI / EIA 481.

RF1171D

**418.0 MHz
SAW Filter**



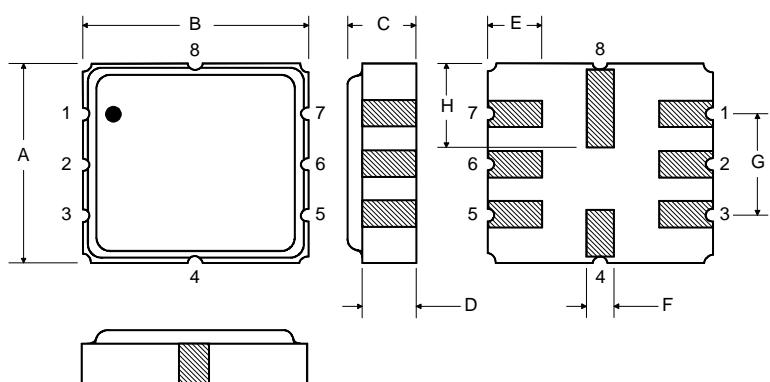
**SM3838-8 Case
3.8 x 3.8**

Absolute Maximum Ratings

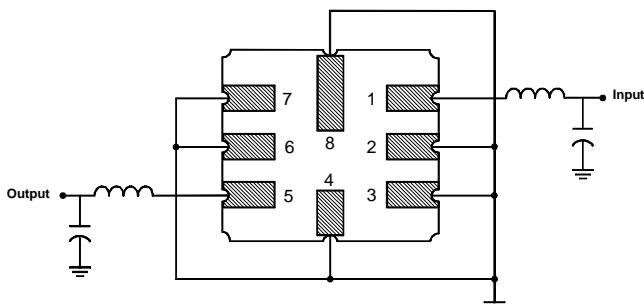
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature (10 sec. max.)	260	°C

Electrical Connections

Pin	Connection
1	Input
2	Input Ground
3	Ground
4	Case Ground
5	Output
6	Output Ground
7	Ground
8	Case Ground



Matching Circuit to 50Ω

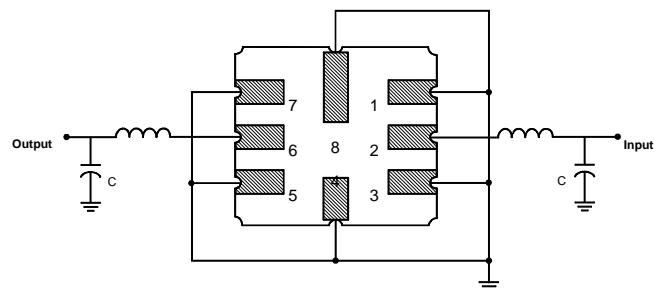


Optional

Electrical Connections

Pin	Connection
1	Input Ground
2	Input
3	Input Ground
4	Case Ground
5	Output Ground
6	Output
7	Output Ground
8	Case Ground

Matching Circuit to 50Ω



Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.037	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069	0.080