



- **Ideal Front-End Filter for European Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**

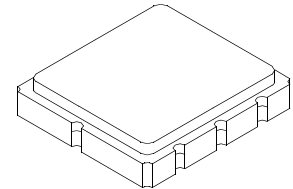


The RF1411D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 869.2625 MHz receivers. Receiver designs using this filter include superhet IF, direct conversion and superregen. Typical applications of these receivers are wireless remote-control and security devices operating in Europe under ETSI I-ETS 300 220, in Germany under FTZ 17 TR 2100, in the United Kingdom under DTI MPT 1340 (for automotive only), in France under PTT Specifications ST/PAA/TPA/AGH/1542, and in Scandinavia.

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 (not included).

**RF1411D**

**869.2625 MHz  
SAW Filter**



**SM3838-8 Case  
3.8 x 3.8**

#### Electrical Characteristics

Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C		f <sub>C</sub>	1, 2, 3		869.2625		MHz
I.L.			1, 3		3.3	4.5	dB
PassBand (relative to IL <sub>min</sub> )	868.9125 -869.6125				0.4	1.0	dB
Pass Bandwidth (relative to IL <sub>min</sub> )		BW <sub>3</sub>	1, 3		1250		kHz
Rejection (relative to IL <sub>min</sub> )	10-700 MHz		1, 3	50	55		dB
	700-842 MHz			35	40		
	842-864 MHz			25	28		
	864-866 MHz			15	24		
	872-879 MHz			8	13		
	879-909 MHz			15	20		
	909-1000 MHz			40	45		
Temperature Coeff				0.032			ppm/ °C <sup>2</sup>
Operating Temperature Range				-45		+85	°C
Impedance @ fc	Input Z <sub>IN</sub> = R <sub>IN</sub>    C <sub>IN</sub>	Z <sub>IN</sub>	1	117Ω    3.7pf			
	Output Z <sub>OUT</sub> = R <sub>OUT</sub>    C <sub>OUT</sub>	Z <sub>OUT</sub>	1	117Ω    3.7pf			
Lid Symbolization (in addition to Lot and/or Date Codes)		512 // YWWS					
Standard Reel Quantity	7 Inch Reel		8	500 Pieces/Reel			
	13 Inch Reel			3000 Pieces/Reel			



**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

Notes:

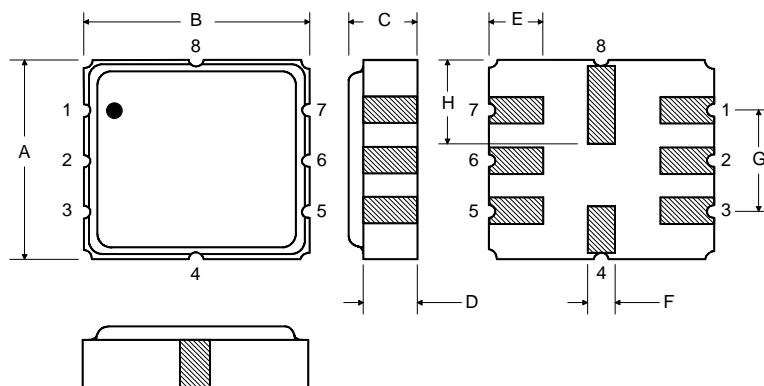
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with  $VSWR \leq 1.2:1$ . The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency,  $f_c$ . Note that insertion loss and bandwidth 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. Where noted, specifications apply over the entire specified operating temperature range of -45°C to +85°C.
4. 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.
5. The design, manufacturing process, and specifications of this device are subject to change.
6. One or more of the following U.S. Patents apply: 4,54,488, 4,616,197, and others pending.
7. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
8. Tape and reel standard per ANSI / EIA 481.

## Absolute Maximum Ratings

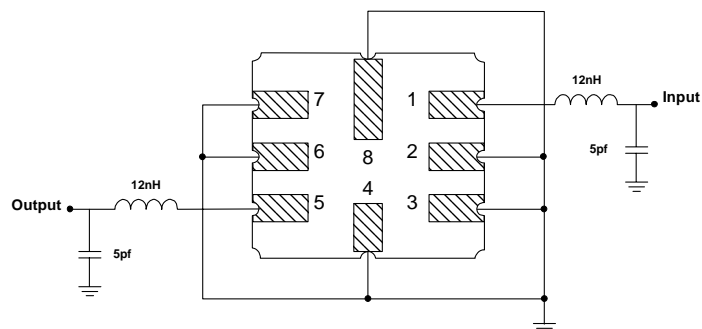
Rating	Value	Units
Input Power Level	+10	dBm
DC Voltage	12	VDC
Storage Temperature	-45 to +85	°C
Soldering Temperature	(10 seconds / 5 cycles max.)	260
		°C

## 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



## 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	0.033	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

