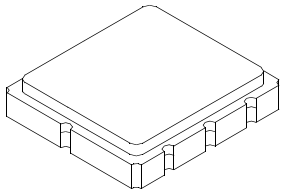
RF1396C

434.42 MHz SAW Filter

- ***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 RF1396C is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 434.420 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 Europe under ETSI I-ETS 300 220.

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.



SM5050-8 Case
5 x 5

Electrical Characteristics

Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C	Absolute Frequency	f_c	1, 2		434.420		MHz
	Tolerance from 434.420 MHz	Δf_C				±160	kHz
Insertion Loss		IL	1		3.0	5.0	dB
3 dB Bandwidth		BW_3	1, 2	500	700	800	kHz
Rejection	at f_c - 21.4 MHz (Image)		1	40	-		dB
	at f_c - 10.7 MHz (LO)			30	-		
	Ultimate				-		
Temperature	Operating Case Temp.	T_C	3, 4	-40		+85	°C
	Turnover Temperature	T_O		15	25	35	°C
	Turnover Frequency	f_O			f_c		MHz
	Freq. Temp. Coefficient	FTC			0.032		ppm/°C^2
Frequency Aging	Absolute Value during the First Year	|fA|	5		≤10		ppm/yr
Impedance @ fc	Input $Z_{IN} = R_{IN}//C_{IN}$	Z_{IN}	1	227 Ω // 3.3 pF			
	Output $Z_{OUT} = R_{OUT}//C_{OUT}$	Z_{OUT}		227 Ω // 3.3 pF			
Lid Symbolization (Y=year WW=week S=Shift)		427 YWWS					
Standard Reel Quantity	7 Incn Reel	500 Pieces/Reel					
Standard Reel Quantity	13 Inch Reel	3000 Pieces/Reel					

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

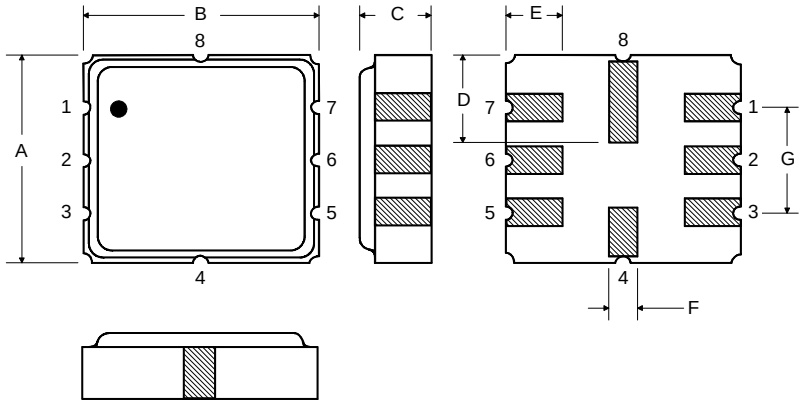
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with VSWR ≤ 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency, f_c. Note that insertion loss and bandwidth 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. Where noted specifications apply over the entire specified operating temperature range.
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 fc 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.

Absolute Maximum Ratings

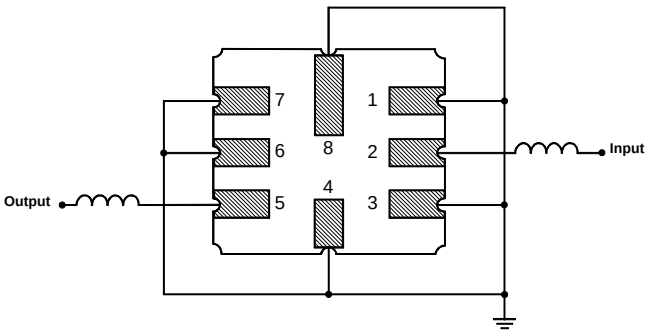
Rating		Value	Units
Input Power Level		10	dBm
DC Voltage		12	VDC
Storage Temperature		-40 to +85	°C
Soldering Temperature	(10 seconds / 5 cycles max.)	260	°C

Electrical Connections

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



Matching Circuit to 50Ω



Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.8	5.0	5.2	0.189	0.197	0.205
B	4.8	5.0	5.2	0.189	0.197	0.205
C			1.7			0.067
D		2.08			0.082	
E		1.17			0.046	
F		0.64			0.025	
G	2.39	2.54	2.69	0.094	0.100	0.106

Optional

Electrical Connections

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

Matching Circuit to 50Ω