

- **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)<sup>10</sup>**

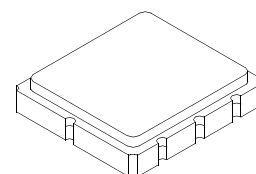


The RF3391D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 433.42 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superregen. Typical applications of these receivers are wireless remote-control and security devices operating in Europe under ETSI I-ETS 300 220.

Characteristic	Value	Units
Input Power Level	+10	dBm
DC Voltage	12	VDC
Storage Temperature Range	-40 to +125	°C
Operating Temperature Range	-40 to +125	°C
Soldering Temperature (10 seconds / 5 cycles maximum)	260	°C

**RF3391D**

**433.42 MHz  
SAW Filter**



**SM3838-8 Case  
3.8 x 3.8**

#### Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C	$f_c$	1, 2, 3		433.42		MHz
Insertion Loss	$IL_{MIN}$	1, 3		2.8	3.5	dB
Passband Ripple (Relative to $IL_{MIN}$ ) $f_c \pm 200$ kHz		1, 3		1.2	1.8	dB
3 dB Bandwidth	$BW_3$	1, 3	500	600	800	kHz
Rejection relative to $IL_{MIN}$		1, 3				dB
10 - 415 MHz			40	43		
415 - 425 MHz			30	33		
425 - 431 MHz			20	23		
435 - 440 MHz			10	13		
445 - 450 MHz			30	33		
450 - 1000 MHz			40	43		
Temperature Freq. Temp. Coefficient	FTC			0.032		ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	fA	5	≤10		ppm/yr
Impedance @ $f_c$	Input $Z_{IN} = R_{IN}    C_{IN}$	$Z_{IN}$	1	137.18 $\Omega$    7.58 pF		
	Output $Z_{OUT} = R_{OUT}    C_{OUT}$	$Z_{OUT}$		126.97 $\Omega$    7.87 pF		
Lid Symbolization (Y=year WW=week S=shift)				739 // YWWS		
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.**

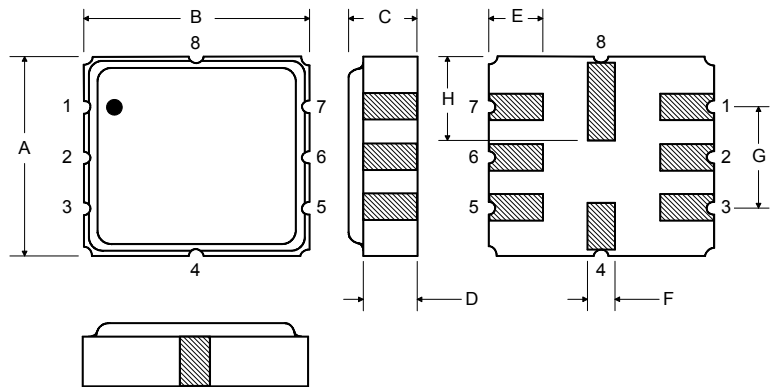
#### NOTES:

1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50  $\Omega$  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 of -40°C 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.
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.
10. This product complies with Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

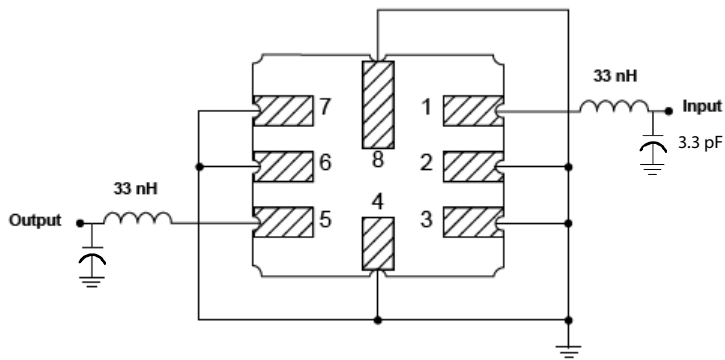
## PRIMARY

### Electrical Connections

Pin	Connection
1	Input Ground
2	Input
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