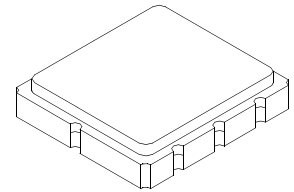


# RF1408D

## 447.7 MHz SAW Filter



**SM3838-8 Case**  
3.8 x 3.8

- **Ideal Front-End Filter for Domestic Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**

The RF1408D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 447.7 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 (especially for automotive keyless entry) operating in the USA under FCC Part 15, in Canada under RSS-210, and in Italy

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. RFMI's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C Absolute Frequency	$f_c$			447.7		MHz
Insertion Loss	$IL_{MIN}$			1.5	2.0	dB
3 dB Bandwidth	$BW_3$		500	840	1100	kHz
Rejection Attenuation: (relative to $IL_{min}$ )						dB
10 - 409 MHz			45	60		
409 - 434 MHz			40	55		
434 - 443 MHz			33	35		
443 - 445 MHz			20	33		
445 - 446.7 MHz			9	12		
448.7 - 449.7 MHz			9	15		
449.7 - 456 MHz			16	20		
456 - 458 MHz			31	38		
458 - 487 MHz			38	40		
487 - 1000 MHz			39	55		
Temperature Freq. Temp. Coefficient	FTC			0.032		ppm/°C <sup>2</sup>
Frequency Aging Absolute Value during the First Year	$ fA $			≤10		ppm/yr
Impedance @ $f_c$ Input $Z_{IN}=R_{IN}  C_{IN}$	$Z_{IN}$			221.86Ω // 1.25pf		
Output $Z_{OUT}=R_{OUT}  C_{OUT}$	$Z_{OUT}$			172.02Ω // 126.49fF		
Lid Symbolization (Y=year WW=week S=shift)	511, <u>YWWS</u>					
Standard Reel Quantity Reel Size 7 Inch	500 Pieces/Reel					
Reel Size 13 Inch	3000 Pieces/Reel					



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

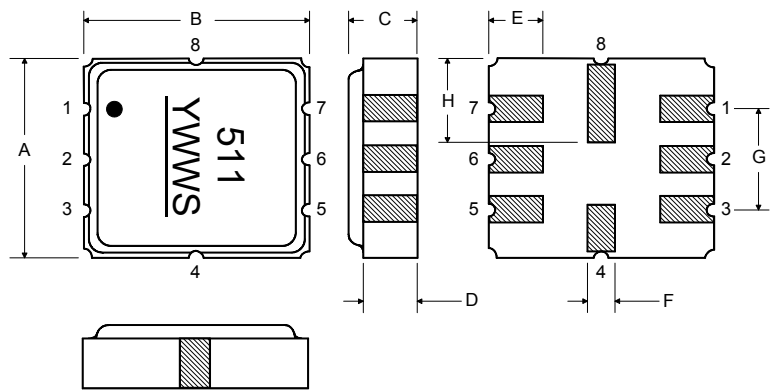
**NOTES:**

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

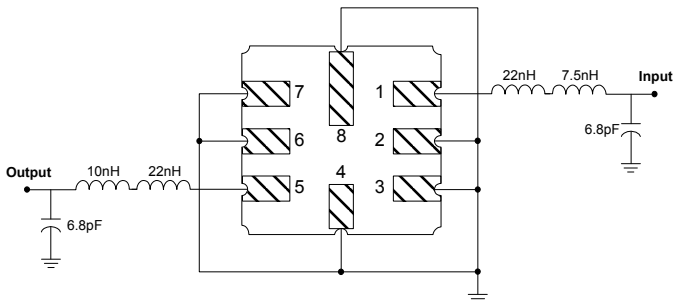
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature (10 seconds / 5 cycles Max.)	260	°C

### Electrical Connections

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



### Matching Circuit to 50Ω



### Case Dimensions

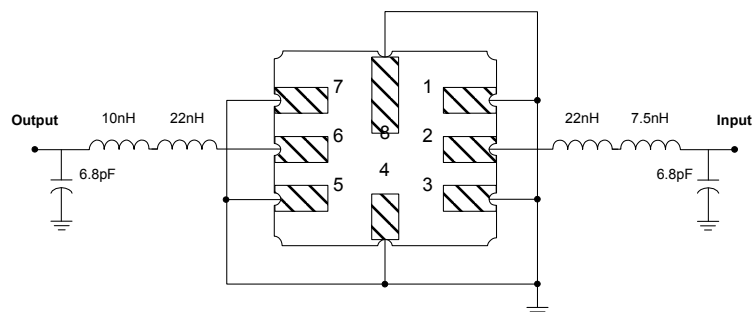
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069	0.080

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



## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

