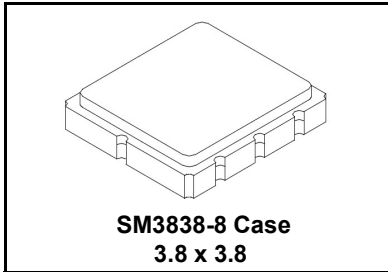


RF1415D

**315.0 MHz
 SAW Filter**



- **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**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

The RF1415D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 315.0 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superhet. 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

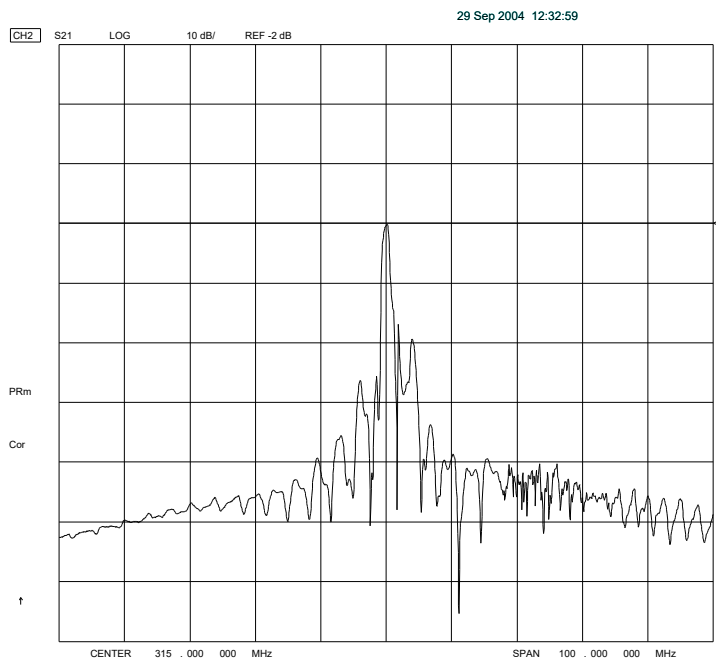
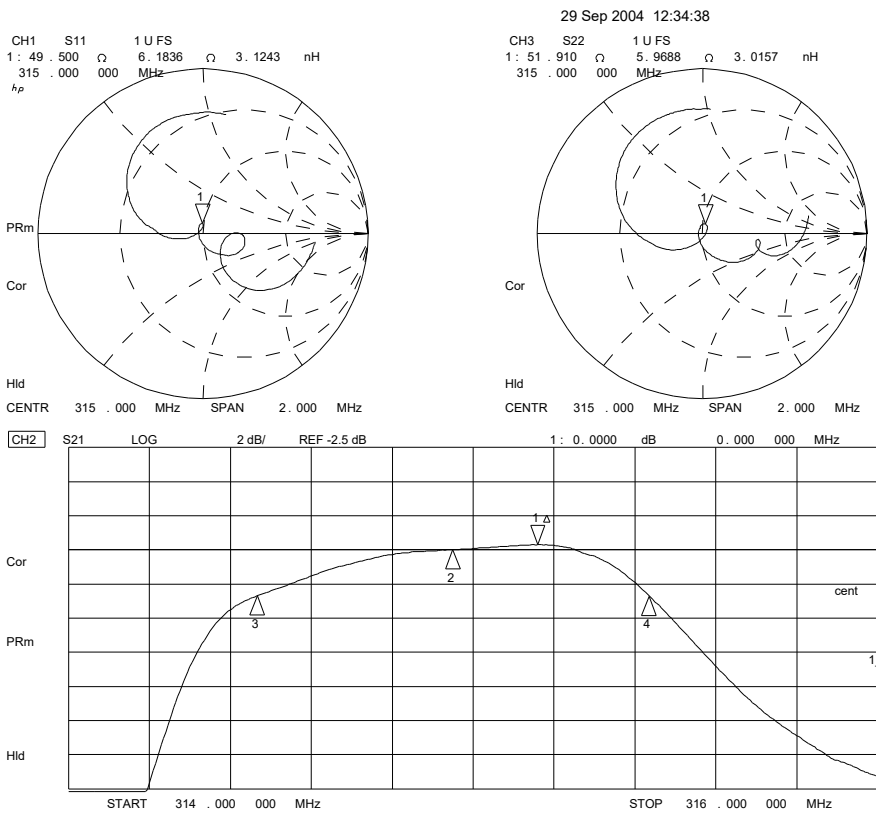
This coupled-resonator filter (CRF) uses selective null placement to provide suppression, typically greater than 40 dB, of the LO and image spurious responses of superhet receivers with 10.7 MHz IF. RFMi's advanced SAW design and fabrication technology is utilized to achieve high performance and very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

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C Absolute Frequency	f_c		314.840	315.00	315.170	MHz
Insertion Loss	IL_{MIN}			2.10	3.50	dB
3 dB Bandwidth	BW_3		800	950	1200	kHz
Rejection Attenuation: (relative to IL_{min})	10 - 285 MHz		42	44		dB
	285 - 305 MHz		32	34		
	305 - 309 MHz		30	32		
	309 - 313.9 MHz		15	17		
	316 - 327 MHz		10	12		
	327 - 335 MHz		33	35		
	335 - 450 MHz		35	37		
	450 - 1000 MHz		45	47		
Temperature Freq. Temp. Coefficient	FTC			0.032		ppm/ °C ²
Frequency Aging Absolute Value during the First Year	fA			≤10		ppm/yr
Impedance @ f_c	Input $Z_{IN}=R_{IN} C_{IN}$	Z_{IN}	19Ω // 3.08pf			
	Output $Z_{OUT}=R_{OUT} C_{OUT}$	Z_{OUT}	20.3Ω // 3.14pf			
Lid Symbolization (Y=year WW=week S=shift)	538, <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:

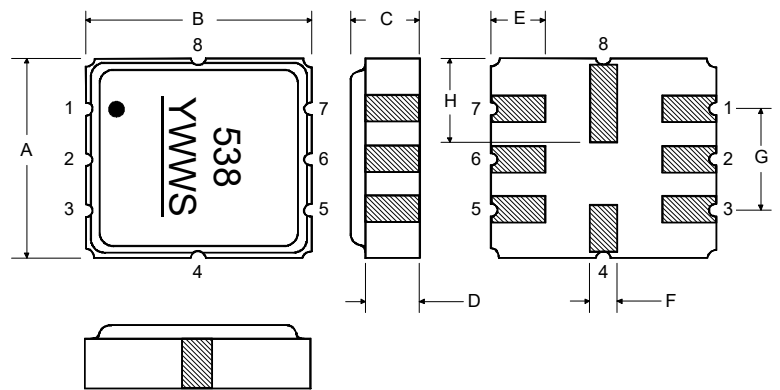
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.



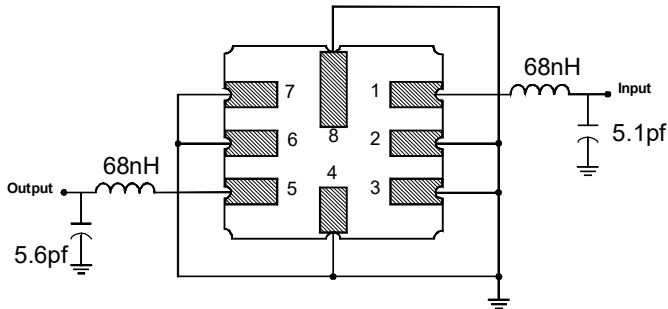
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature	(10 seconds / 5 cycles max.)	260 °C

Electrical Connections

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



Matching Circuit to 50Ω



Case Dimensions

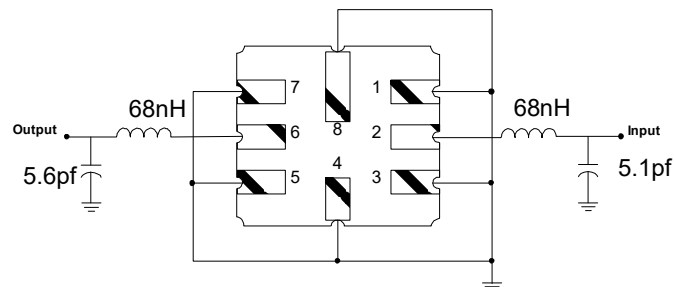
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069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

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.

