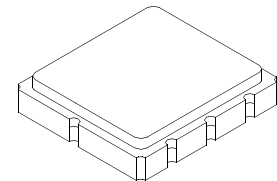


**RF3417D**

**315.0 MHz  
SAW Filter**



**SM3838-8 Case  
3.8 x 3.8**

- **Ideal Front-End Filter for 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 RF3417D 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 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	$f_c$		314.85	315.00	315.15	MHz
Insertion Loss	$IL_{MIN}$			1.6	2.5	dB
Passband Ripple Relative to $IL_{MIN}$ , $F_c \pm 200$ kHz				0.4	1.2	dB
3 dB Bandwidth	$BW_3$		500	600	800	kHz
Rejection Relative to $IL_{MIN}$			10 - 295 MHz	46	51	dB
			295 - 305 MHz	41	46	
			305 - 310 MHz	27	30	
			310 - 313 MHz	17	20	
			313 - 314 MHz	7	10	
			316 - 320 MHz	9	12	
			320 - 325 MHz	16	20	
			325 - 335 MHz	32	36	
			335 - 600 MHz	42	46	
			600 - 1000 MHz	55	60	
Temperature Freq. Temp. Coefficient	FTC			0.032		ppm/°C <sup>2</sup>
Frequency Aging	Absolute Value during the First Year	fAI		≤10		ppm/yr
Impedance @ $f_c$	Input: $Z_{IN} = R_{IN}    C_{IN}$	$Z_{IN}$	1.92 kΩ    5.93 pF			
	Output: $Z_{OUT} = R_{OUT}    C_{OUT}$	$Z_{OUT}$	1.28 kΩ    6.09 pF			
Lid Symbolization (Y=year WW=week S=shift)	550, YWWS					
Standard Reel Quantity	Reel Size 7 Inch			500 Pieces/Reel		
	Reel Size 13 Inch			3000 Pieces/Reel		

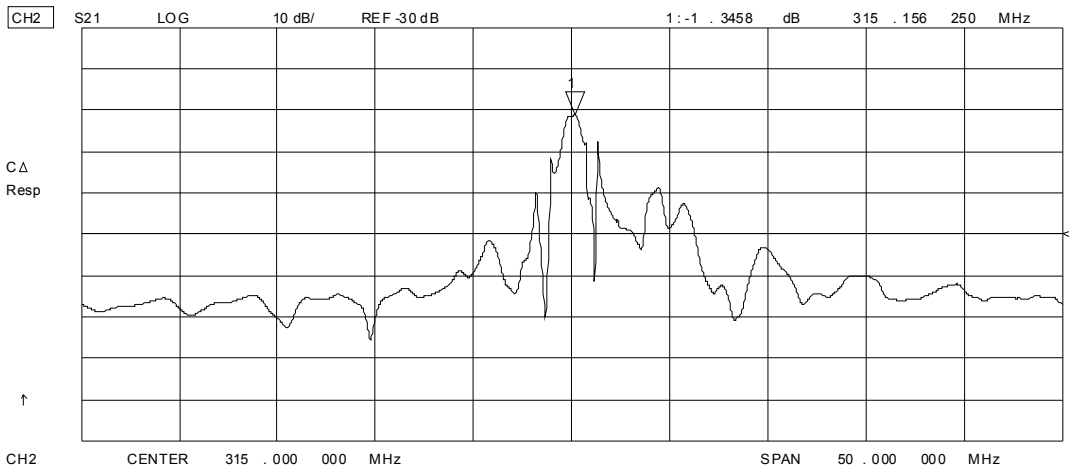
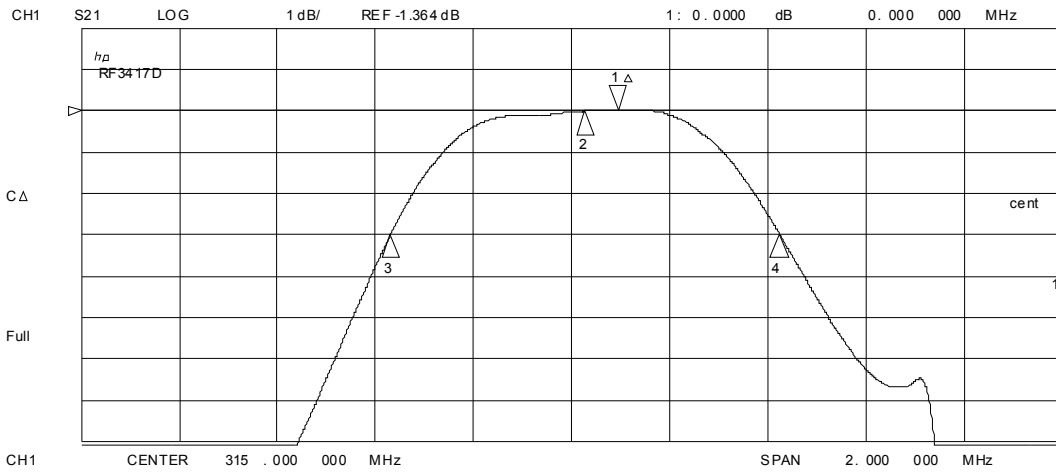
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**  
**NOTES:**

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 maximum)	260	°C

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C	$f_c$		314.85	315.00	315.15	MHz
Insertion Loss	$IL_{MIN}$			2.3	3.0	dB
Passband Ripple Relative to $IL_{MIN}$ , $f_c \pm 200$ kHz				0.5	1.4	dB
3 dB Bandwidth	$BW_3$		500	600	800	kHz
Rejection Relative to $IL_{MIN}$	10 - 295 MHz		44	49		dB
	295 - 305 MHz		39	44		
	305 - 310 MHz		27	30		
	310 - 313 MHz		17	20		
	313 - 314 MHz		7	10		
	316 - 320 MHz		9	12		
	320 - 325 MHz		16	20		
	325 - 335 MHz		32	36		
	335 - 600 MHz		42	45		
600 - 1000 MHz		55	60			
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 $Z_{IN} = R_{IN}    C_{IN}$	$Z_{IN}$	1.92 kΩ    5.93 pF			
	Output $Z_{OUT} = R_{OUT}    C_{OUT}$	$Z_{OUT}$	1.28 kΩ    6.09 pF			

19 Mar 2009 08:54:09



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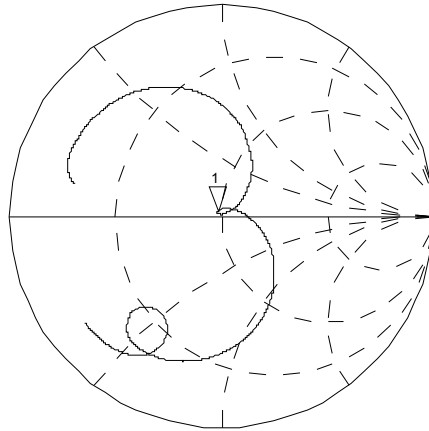
CH1 S11 1 UFS 1: 48.232  $\Omega$  2.3398  $\Omega$  1.1822 nH 315.000 000 MHz

hp  
RF3417D

C  $\Delta$

Full

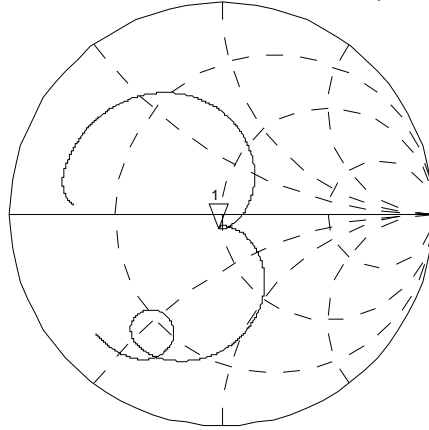
↑



CH3 S22 1 UFS 1: 48.295  $\Omega$  -6.4219  $\Omega$  78.677 pF 315.000 000 MHz

C  $\Delta$

↑

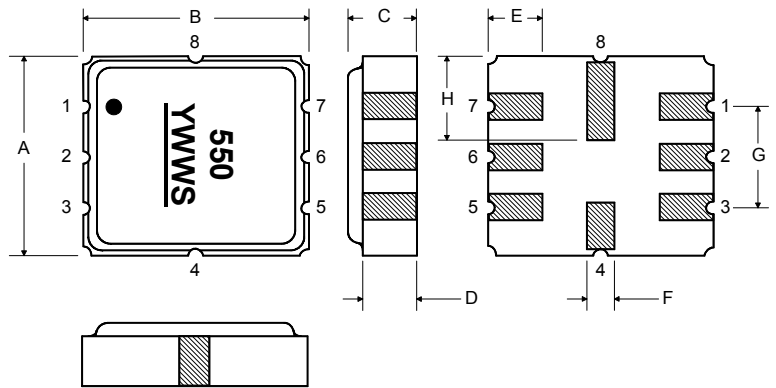


CENTER 315.000 000 MHz

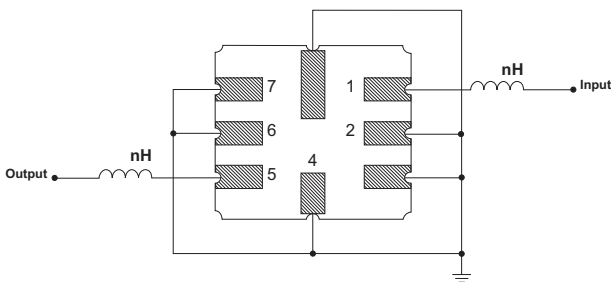
SPAN 2.000 000 MHz

### 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

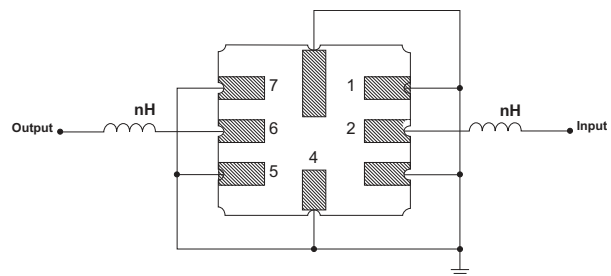
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069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

Optional

### Electrical Connections

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

### Optional 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.

