

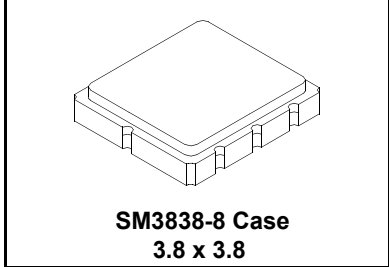


- **Ideal Front-End Filter for Wireless Receiver in the US and UK**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Surface-Mount Ceramic Case with 50 mm² Footprint**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**

RoHS
Compliant

RF3171D

418.0 MHz
SAW Filter



The RF3171D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 418.0 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 operating in the USA under FCC Part 15.

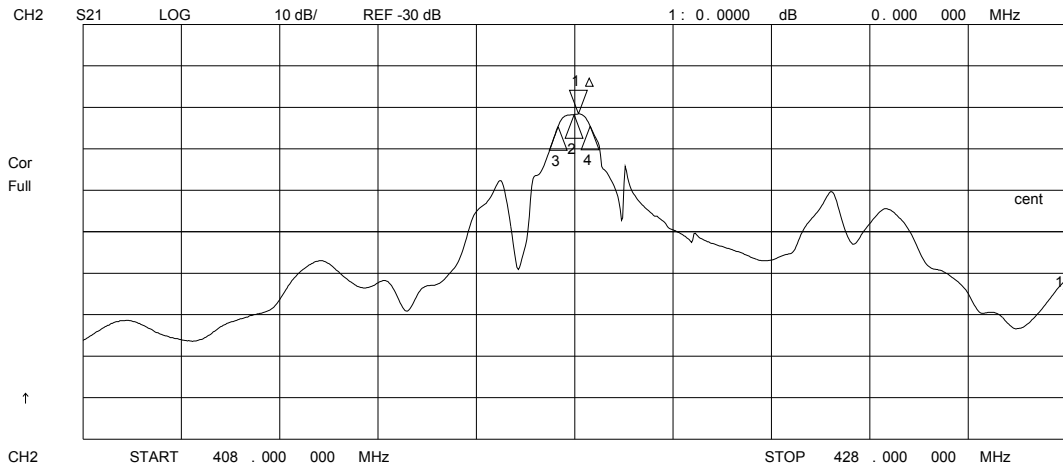
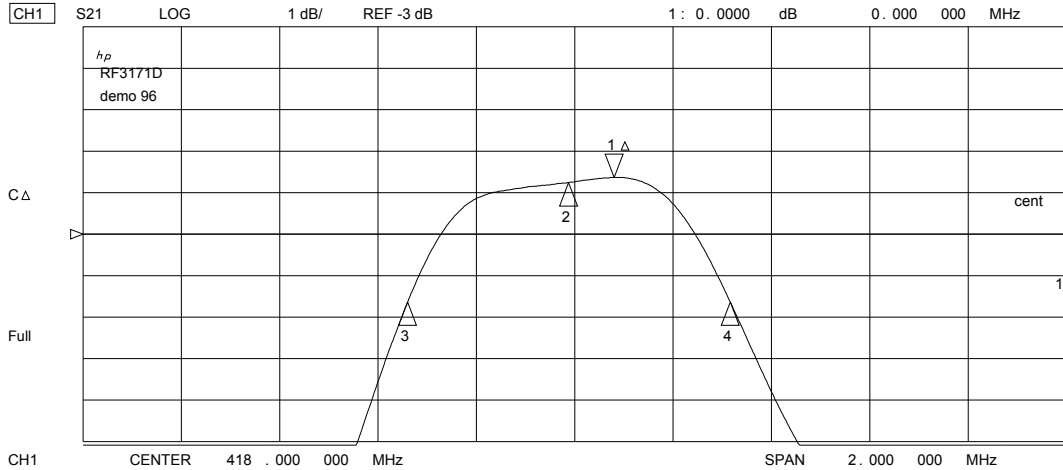
This coupled-resonator filter (CRF) uses selective null placement to provide suppression, typically greater than 40 dB, of the LO and image spurious responses of superhet receivers with 10.7 MHz IF. RFMi's advanced SAW design and fabrication technology is utilized to achieve high performance and very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

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency	F_C			418.0		MHz
Minimum I.L.	IL_{min}			1.6	2.5	dB
Pass bandwidth (relative to IL_{min})	BW_3		500	620	800	kHz
Attenuation: (relative to IL_{min})			10.00 - 400.00 MHz	50	60	dB
			400.00 - 413.00 MHz	30	35	
			413.00 - 417.00 MHz	13	15	
			419.00 - 426.00 MHz	10	11	
			426.00 - 435.00 MHz	35	38	
			435.00 - 1000 MHz	50	56	
Impedance at F_C ; Input	$Z_{IN}=R_{IN}/C_{IN}$		2.58 k Ω // 3.37 pF			Ω //pF
Impedance at F_C ; Output	$Z_{OUT}=R_{OUT}/C_{OUT}$		1.92 k Ω // 3.55 pF			Ω //pF
Frequency Aging	Absolute Value during the First Year	$ fA $		≤ 10		ppm/yr
Lid Symbolization (Y = Year, WW = Week, S = Shift)			775, <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.

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CH1 S11 1 U FS

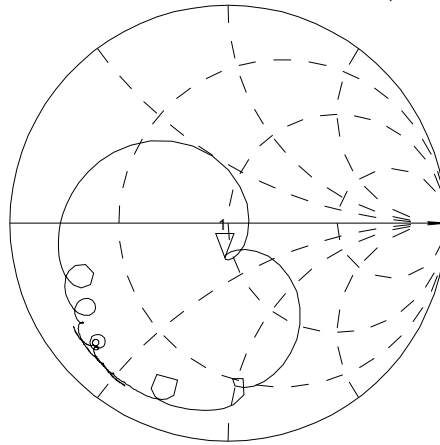
1: 46 . 314 Ω -15 . 008 Ω 25 . 370 pF 418 . 000 000 MHz

hp
RF3171D
demo 96

Cor

Full

↑

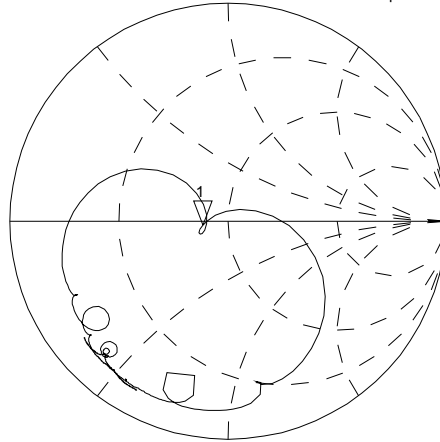


CH3 S22 1 U FS

1: 39 . 561 Ω -1 . 4668 Ω 259 . 58 pF 418 . 000 000 MHz

Cor

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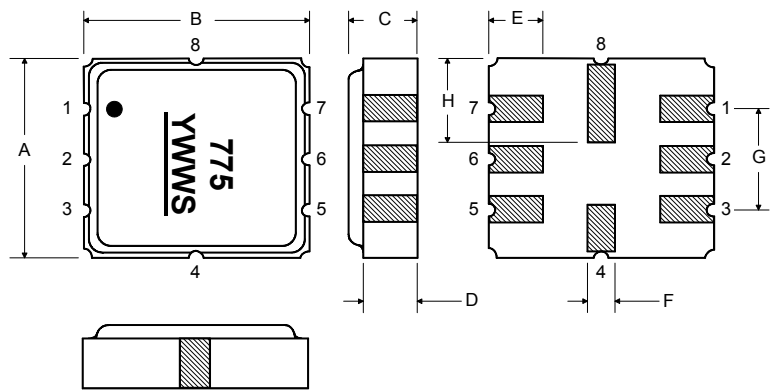
CENTER 418 . 000 000 MHz

SPAN 20 . 000 000 MHz

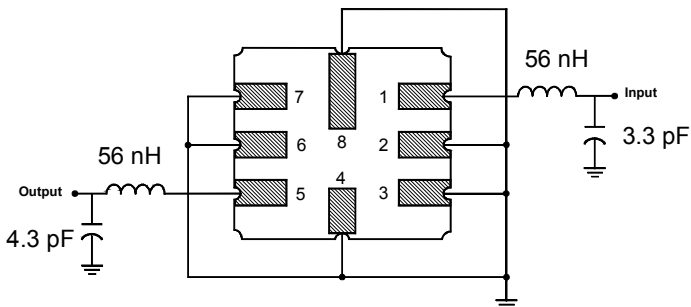
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature (10 sec. max.)	260	°C

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

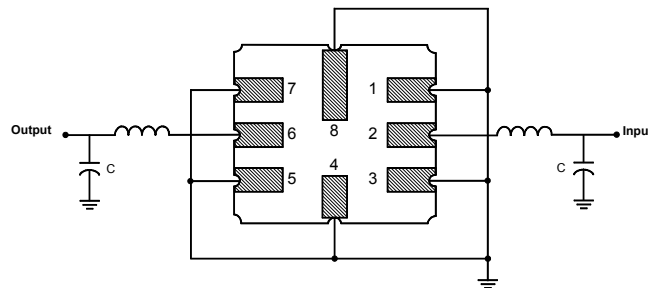
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069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

