

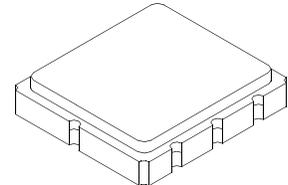
- **Ideal Front-End Filter for European Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**
- **AEC-Q200 Qualified**
- **Moisture Sensitivity Level: 1**

The RF3319D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 868.95 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, in Germany under FTZ 17 TR 2100, in the United Kingdom under DTI MPT 1340 (for automotive only), in France under PTT Specifications ST/PAA/TPA/AGH/1542, and in Scandinavia.

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. RFM's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching (not included).

**RF3319D**

**868.95 MHz  
SAW Filter**



**SM3838-8 Case  
3.8 x 3.8**

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C Absolute Frequency	$f_C$			868.95		MHz
Insertion Loss	IL			2.2	4.0	dB
3 dB Bandwidth	BW <sub>3</sub>		500	650	900	kHz
Attenuation: (relative to IL <sub>min</sub> )	10 - 700 MHz		50	55		dB
	700 - 830 MHz		40	45		
	830 - 850 MHz		35	40		
	850 - 865 MHz		20	24		
	871 - 878 MHz		21	30		
	878 - 883 MHz		15	20		
	883 - 900 MHz		28	35		
900 - 1000 MHz		40	45			
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 $Z_{IN} = R_{IN}/C_{IN}$	$Z_{IN}$	28.8 $\Omega$ // 1.93pF			
	Output $Z_{OUT} = R_{OUT}/C_{OUT}$	$Z_{OUT}$	26.9 $\Omega$ // 2.2pF			
Lid Symbolization (in addition to Lot and/or Date Codes)	668, <u>YWWS</u>					
Standard Reel Quantity 7 Inch Reel				500 Pieces/Reel		
Standard Reel Quantity 13 Inch Reel				3000 Pieces/Reel		

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

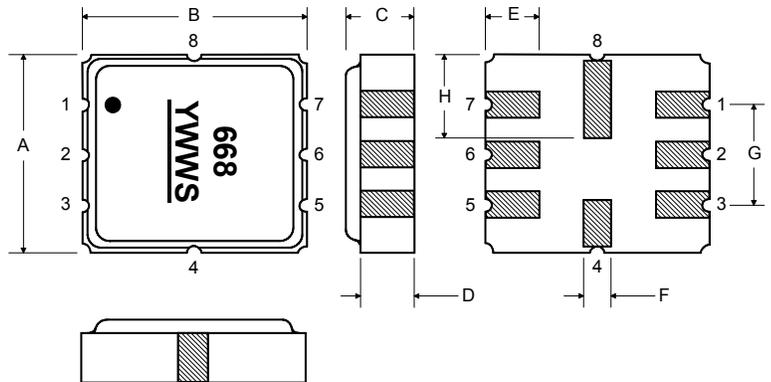
**NOTES:**

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.

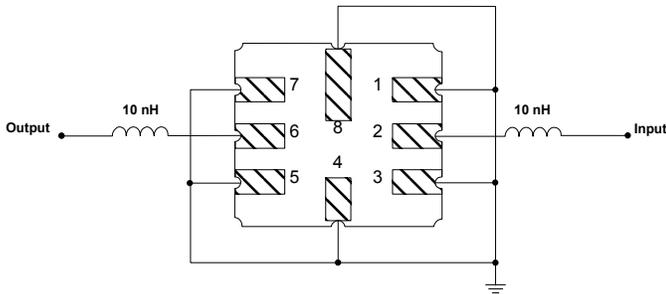
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature	(10 seconds / 5 cycles max.)	260 °C

### Electrical Connections

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



### Matching Circuit to 50Ω



### Case Dimensions

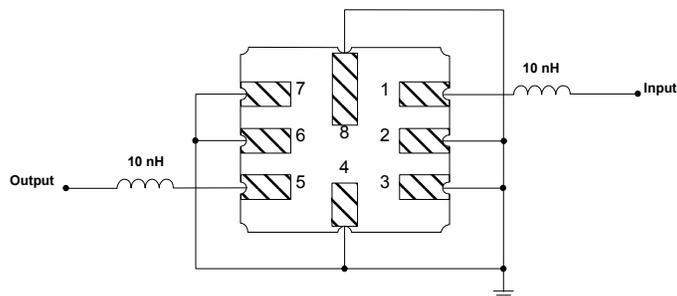
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069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

OPTIONAL

### Electrical Connections

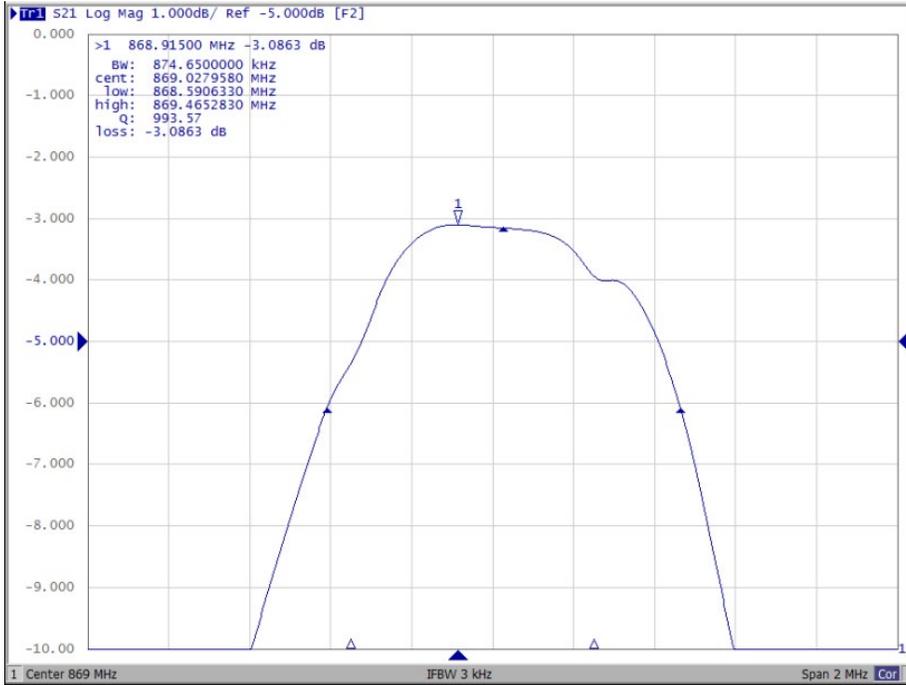
Pin	Connection
1	Input
2	Input Ground
3	N/C
4	Case Ground
5	Output
6	Output Ground
7	Case Ground
8	Case Ground

### Matching Circuit to 50Ω

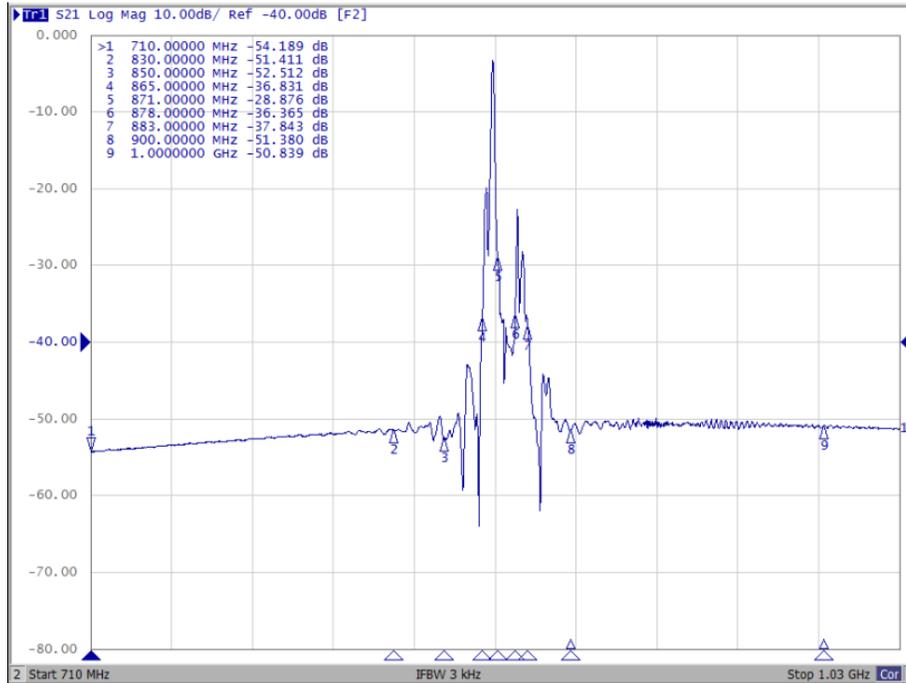


# Transfer function :

(1) S21 response (span : 2 MHz)

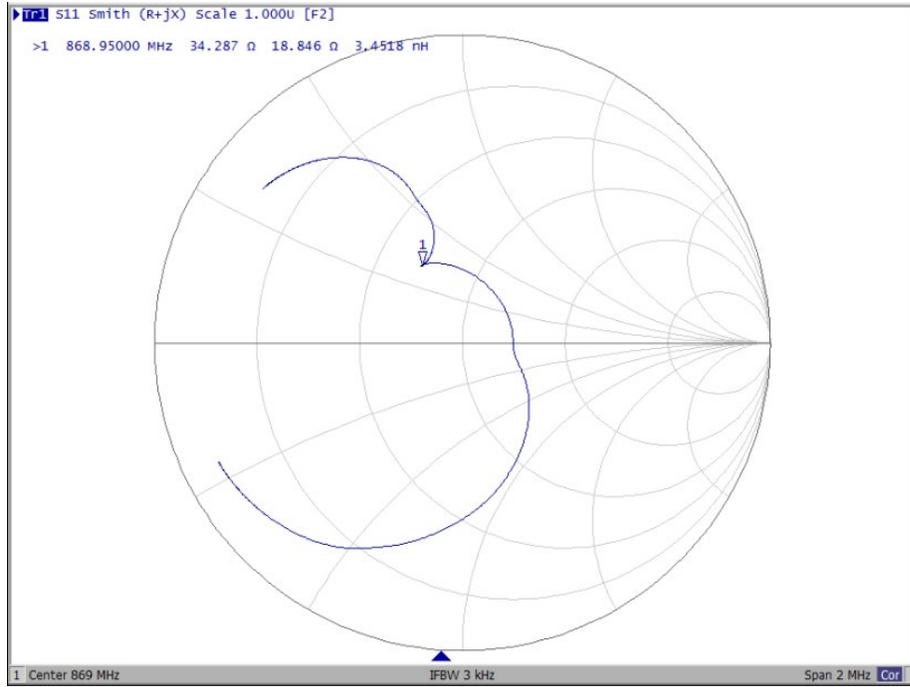


(2) S21 response (span : 320 MHz)

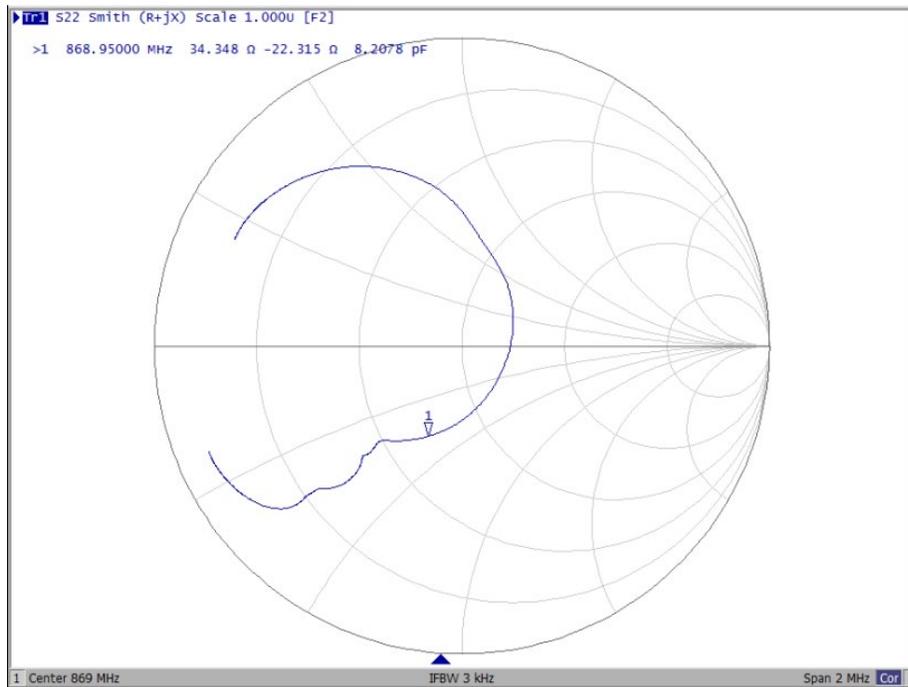


# Reflection functions :

## S11 Smith Chart



## S22 Smith Chart



# 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.

