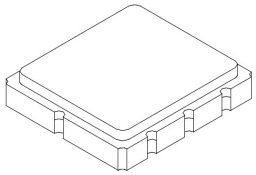
RFMi
A BRAND OF AKOUSTIS

RF1404D

433.92 MHz SAW Filter

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

RoHS Compliant



SM3838-8 Case
3.8 x 3.8

The RF1404D is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 433.92 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.

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			433.92		MHz
Insertion Loss		IL_{MIN}			1.6	2.5	dB
Passband Ripple (Relative to IL_{MIN}) Fc ±200kHz					1.2	1.8	dB
3 dB Bandwidth		BW_3		500	600	800	kHz
Rejection Attenuation: (relative to ILmin)	10 - 414 MHz			50	55		dB
	414 - 424 MHz			45	50		
	424 - 431 MHz			30	34		
	431 - 432 MHz			18	22		
	432 - 433 MHz			12	17		
	434.92 - 442 MHz			11	14		
	442 - 550 MHz			35	38		
	550 - 1000 MHz			50	55		
Temperature	Freq. Temp. Coefficient	FTC			0.032		ppm/°C^2
Frequency Aging	Absolute Value during the First Year	|fA|			≤10		ppm/yr
Impedance @ fc	Input $Z_{IN} = R_{IN} \| C_{IN}$	Z_{IN}		2853Ω // 1.66pf			
	Output $Z_{OUT} = R_{OUT} \| C_{OUT}$	Z_{OUT}		2411Ω // 1.73pf			
Lid Symbolization (Y=year WW=week S=shift)		539, 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.

Characteristic	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

Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C	Absolute Frequency	f_c			433.92		MHz
Insertion Loss		IL_{MIN}			2.3	3.0	dB
Passband Ripple (Relative to IL_{MIN}) Fc ±200kHz					1.2	2.0	dB
3 dB Bandwidth		BW_3		500	600	800	kHz
Rejection Attenuation: (relative to ILmin)	10 - 414 MHz			50	53		dB
	414 - 424 MHz			45	50		
	424 - 431 MHz			30	34		
	431 - 432 MHz			18	22		
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Standard Reel Quantity	Reel Size 7 Inch			500 Pieces/Reel			
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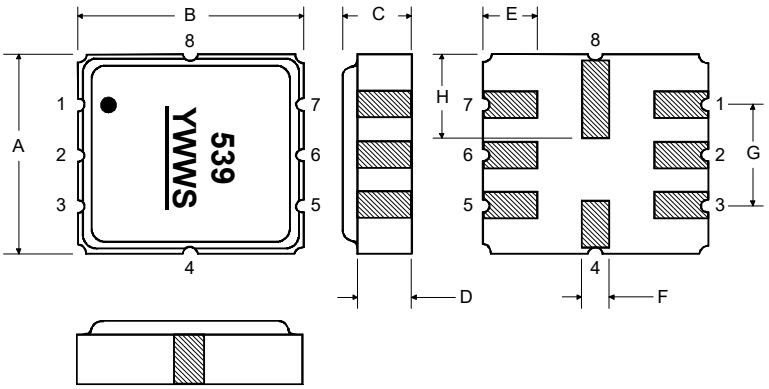
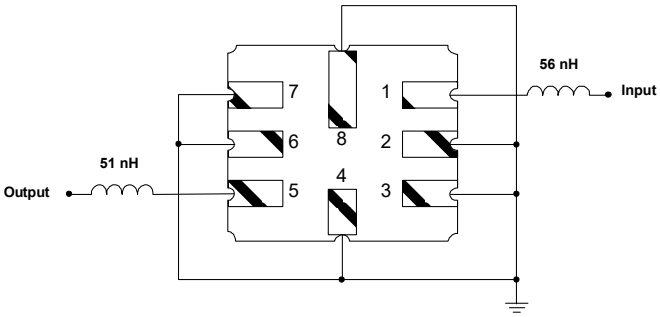
PRIMARY

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

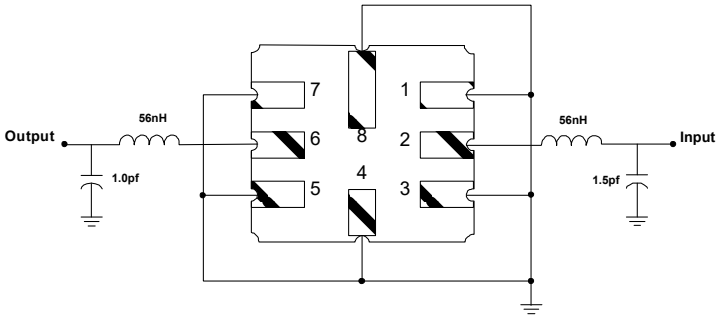
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.14	0.15	0.16
B	3.6	3.8	4.0	0.14	0.15	0.16
C	1.00	1.20	1.40	0.04	0.05	0.055
D	0.95	1.10	1.25	0.033	0.043	0.05
E	0.90	1.0	1.10	0.035	0.04	0.043
F	0.50	0.6	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069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

OPTIONAL

Electrical Connections

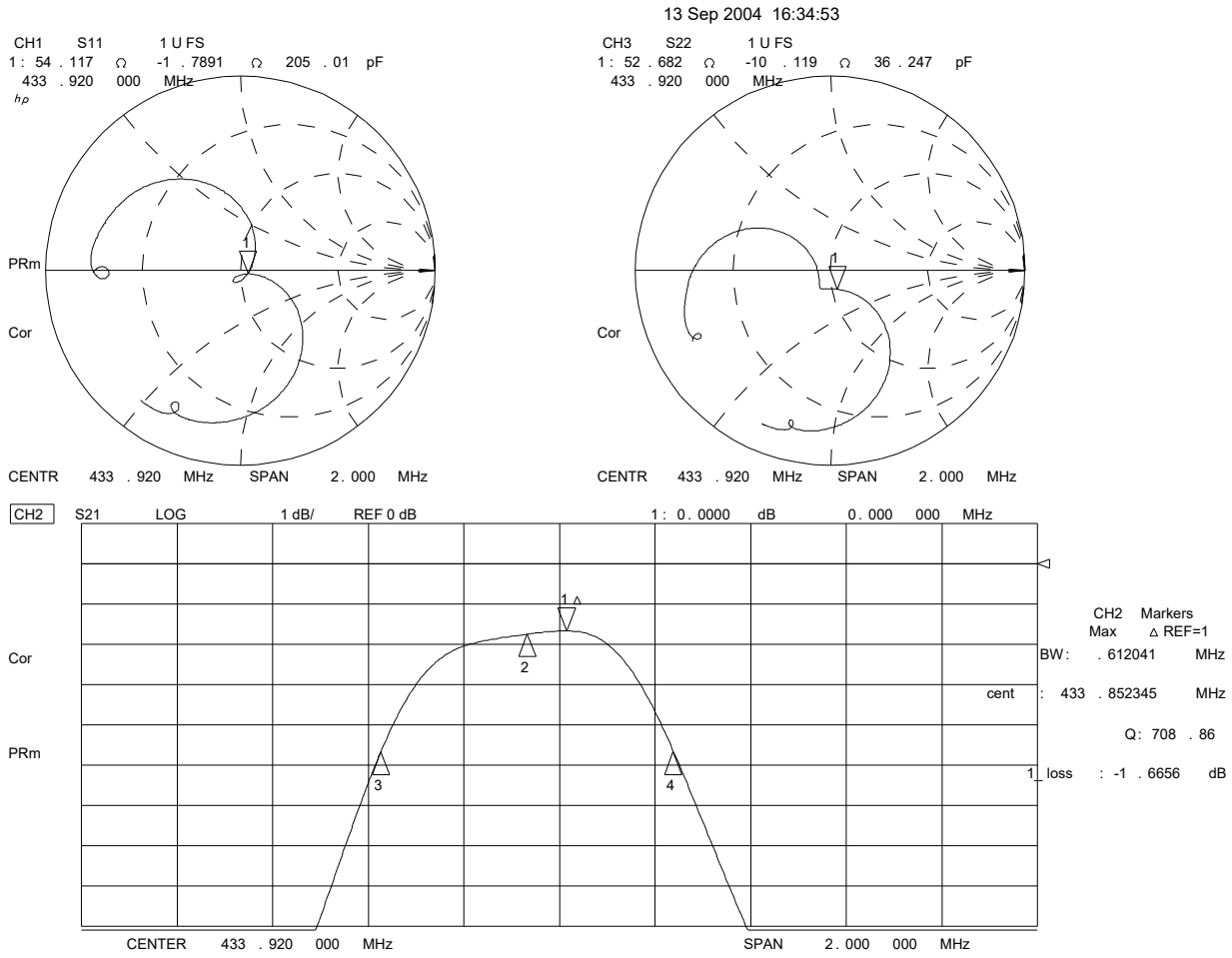
Pin	Connection
1	Input Ground
2	Input
3	Ground
4	Case Ground
5	Output Ground
6	Output
7	Ground
8	Case Ground

Matching Circuit to 50Ω



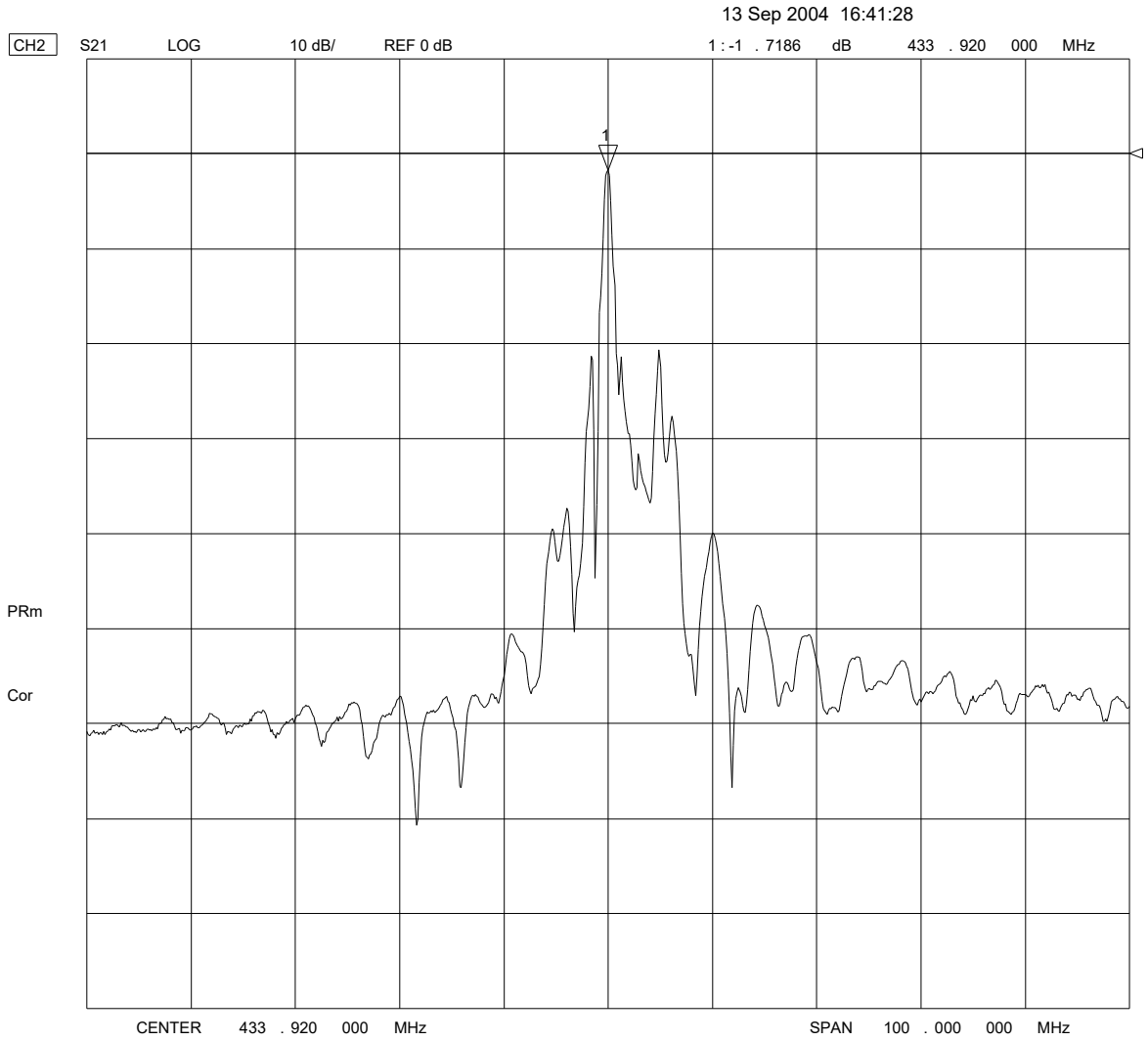
RF1404D (PRIMARY)

Inductor only match



RF1404D (PRIMARY)

Inductor only match



Recommended Reflow Profile

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