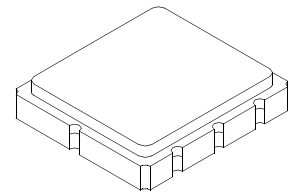


RF3404E

433.92 MHz SAW Filter



SM3030-6

- **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**

The RF3404E 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.

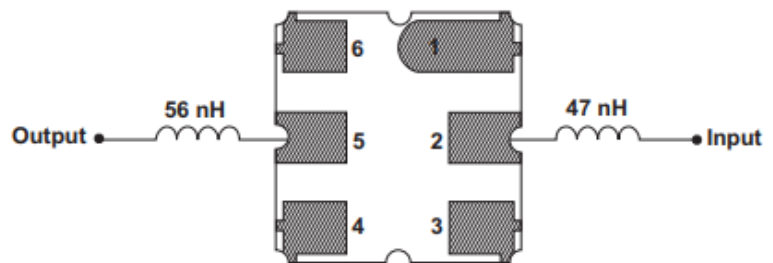
Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency at 25°C Absolute Frequency	f_c			433.92		MHz
Tolerance from MHz	Δf_c			± 100		kHz
Insertion Loss (433.760 - 434.080)	IL_{MIN}			2.3	3.5	dB
3 dB Bandwidth	BW_3		600	650	750	kHz
Rejection Attenuation: (relative to IL_{min})	10 - 414 MHz		30	40		dB
	414 - 424 MHz		27	35		
	424 - 430 MHz		16	20		
	430 - 432 MHz		8	10		
	436 - 437 MHz		19	25		
	437 - 440 MHz		25	32		
	441 - 445 MHz		15	20		
	445 - 1000 MHz		30	46		
Turnover Temperature	T_o		10	25	40	°C
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}	150Ω // 3.4pF			
	Output $Z_{OUT} = R_{OUT} C_{OUT}$	Z_{OUT}	175Ω // 4.1pF			
Lid Symbolization (Y=year WW=week S=shift)	697, <u>YWWS</u>					
Standard Reel Quantity	Reel Size 7 Inch		500 Pieces/Reel			
	Reel Size 13 Inch		3000 Pieces/Reel			

Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +105	°C
Soldering Temperature (10 seconds/5 cycles Max..)	260	°C

Primary Electrical Connections

Pin	Connection
1	Input Return
2	Input
3	Ground
4	Output Return
5	Output
6	Ground

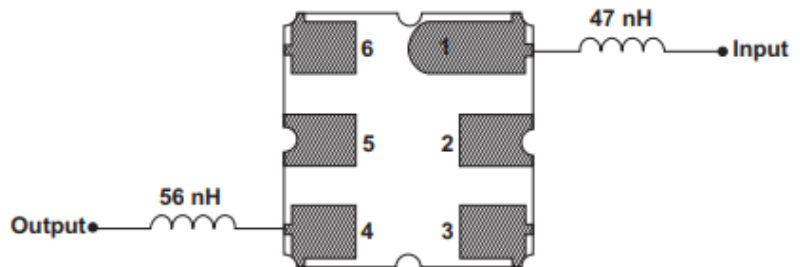
Primary Matching Circuit to 50 Ω



Alternate Electrical Connections

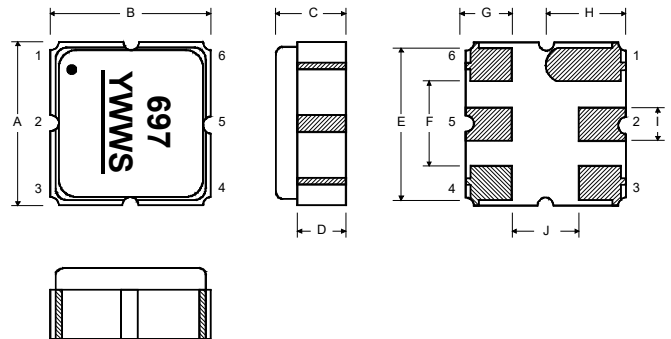
Pin	Connection
1	Input
2	Input Return
3	Ground
4	Output
5	Output Return
6	Ground

Alternate Matching Circuit to 50 Ω



Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.0	3.13	0.113	0.118	0.123
B	2.87	3.0	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.6	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	1.5	1.63	0.054	0.059	0.064
I	0.47	0.60	0.73	0.019	0.024	0.029
J	1.17	1.30	1.43	0.046	0.051	0.056



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CH1 S11 1 UFS 1: 51.947 Ω 3.0938 Ω 1.1347 nH 433.920000 MHz

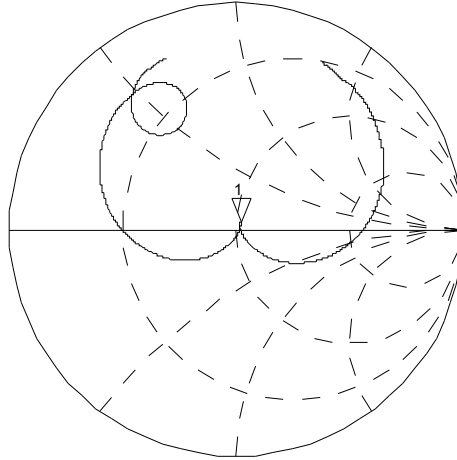
hp
RF3404E DEMO
USING 401-1564-001 PCB.

Cor

PRm

Full

↑



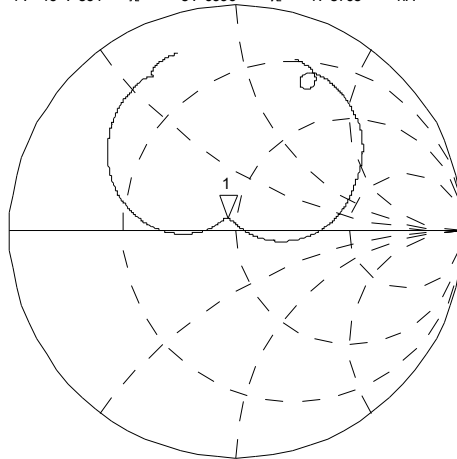
CH2 S22 1 UFS 1: 46.564 Ω 5.0996 Ω 1.8705 nH 433.920000 MHz

Cor

Full

PRm

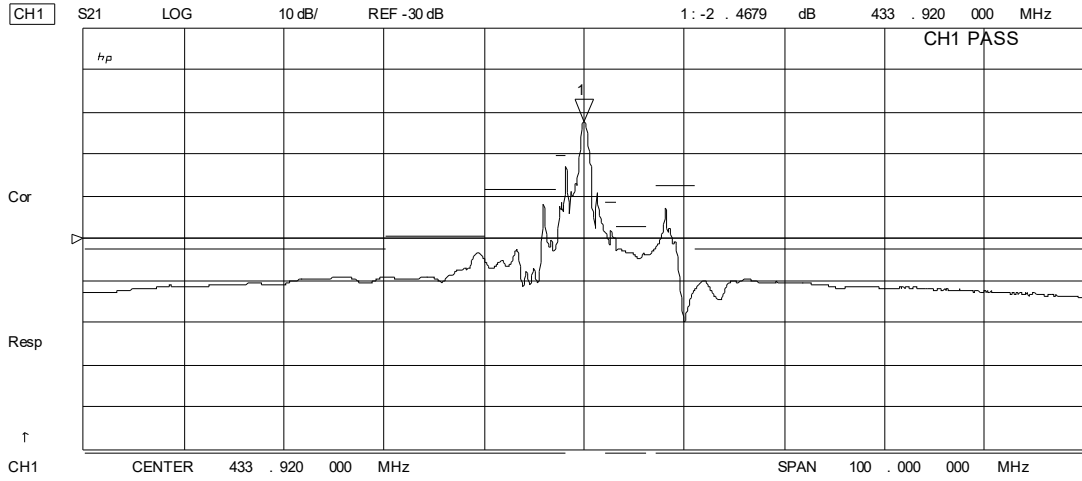
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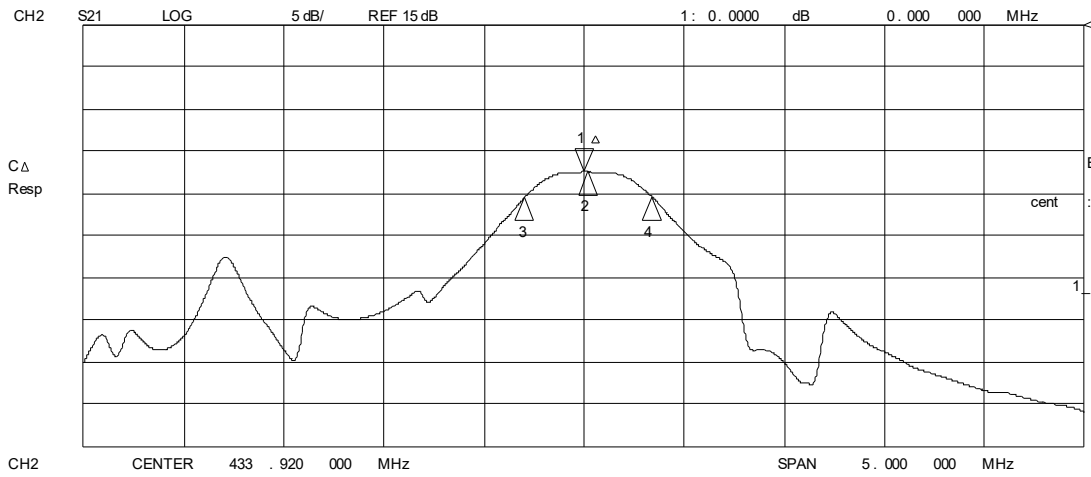
CENTER 433.920000 MHz

SPAN 2.000000 MHz

11 Jan 2008 10:22:38



Max



CH2 Markers
Max Δ REF=1
BW: .635090 MHz
cent : 433.940705 MHz
Q: 683.27
1_loss : -2.4810 dB

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.

