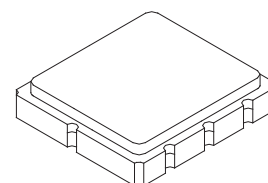


RF3417E-1

**314.90 MHz
SAW Filter**



**SM3030-6 Case
3.0 x 3.0**

- **Ideal Front-End Filter for Low Power 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 RF3417E-1 is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 314.90 MHz receivers. Receiver designs using this filter include super-heterodynes with 10.7 MHz or 500 kHz IFs, direct conversions and superregeneratives. Typical applications for these receivers include wireless remote control and security devices.

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 (not included).

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C	f_C		314.800	314.900	315.000	MHz
Insertion Loss	IL			1.8	2.5	dB
3 dB Bandwidth	BW ₃		525	600	675	kHz
1 dB Bandwidth	BW ₁			450		kHz
Rejection		10 - 275 MHz	40	60		dB
		275 - 306 MHz	40	45		
		306 - 313.2 MHz	25	30		
		313.2 - 314.2 MHz	7	15		
		315.8 - 317 MHz	12	15		
		317 - 321.8 MHz	25	30		
		321.8 - 326 MHz	12	17		
		326 - 355 MHz	37	45		
355 - 1000 MHz	50	55				
Temperature Freq. Temp. Coefficient	FTC			0.032		ppm/°C ²
Turnover Temperature	To		10		40	°C
Frequency Aging Absolute Value during the First Year	fA			<±10		ppm/yr
Impedance @ f_C	Input $Z_{IN} = R_{IN}/C_{IN}$	Z_{IN}	3.7kΩ // 2.03pF			
	Output $Z_{OUT} = R_{OUT}/C_{OUT}$	Z_{OUT}	5.4kΩ // 2.17pF			
Lid Symbolization (in addition to Lot and/or Date Codes)	922, YWWS					
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:

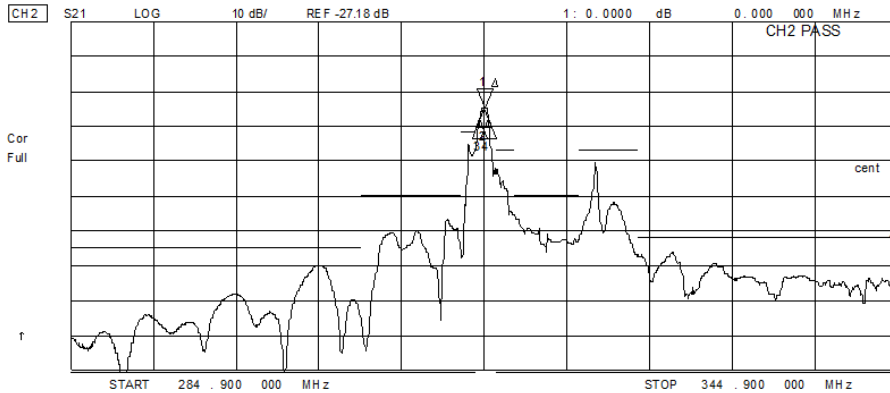
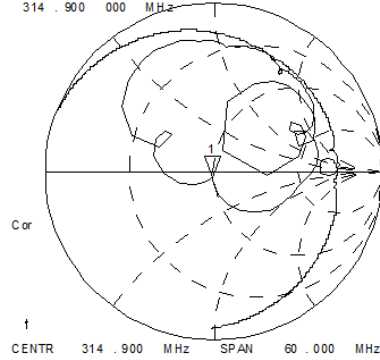
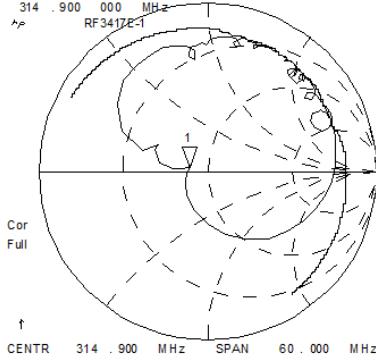
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

Wideband Filter Plots

28 Jul 2009 14:25:42

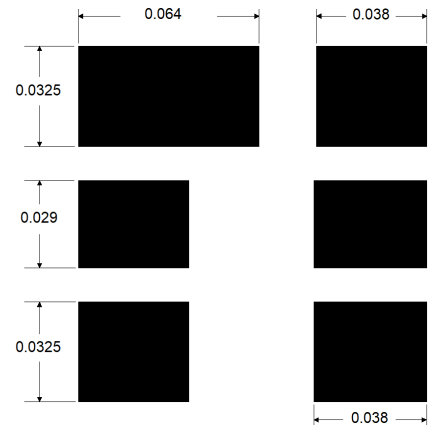
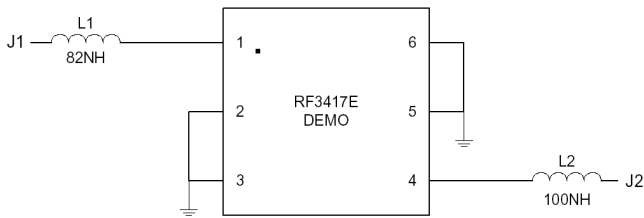
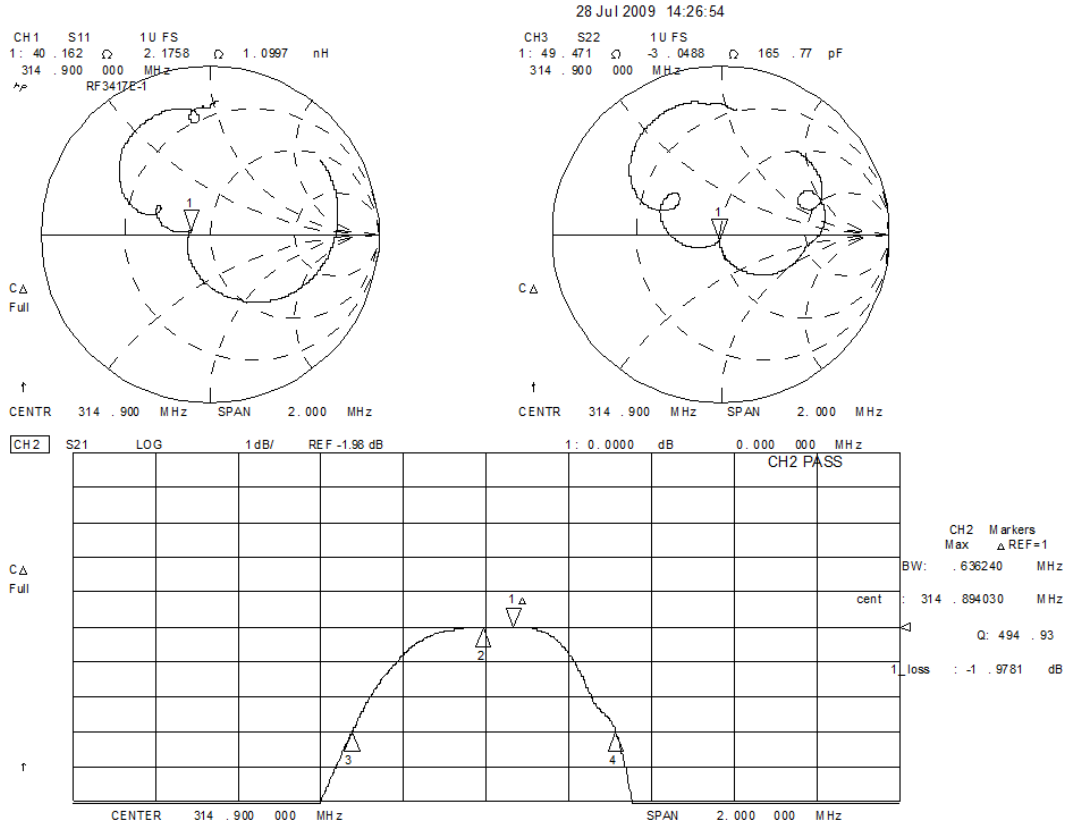
CH1 S11 1U FS
 1: 40 .203 Ω 2.2227 Ω 1.1234 nH
 314 .900 000 MHz
 RF3417E-1

CH3 S22 1U FS
 1: 49 .424 Ω -3 .0332 Ω 166 .63 pF
 314 .900 000 MHz



CH2 Markers
 Max Δ REF=1
 BW: .631660 MHz
 cent : 314 .891536 MHz
 Q: 498 .51
 loss : -1 .9740 dB

Narrowband Filter Plots

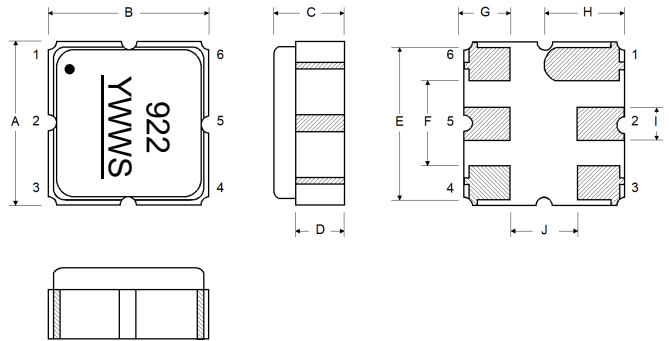


PCB Pad Layout in Inches

Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-55 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature	(10 seconds / 5 cycles maximum)	260 °C

Electrical Connections

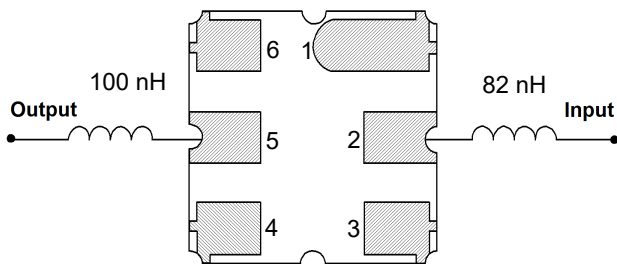
Pin	Connection
1	Input Ground
2	Input
3	Ground
4	Output Ground
5	Output
6	Ground



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

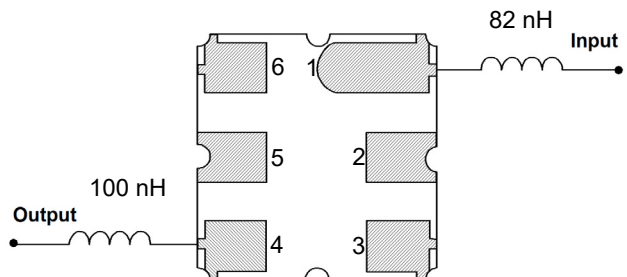
Matching Circuit to 50Ω



Optional Electrical Connections

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

