



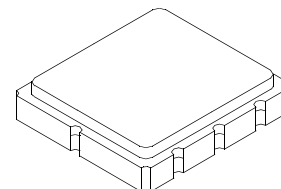
- **Ideal Front-End Filter for Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**



The RF1439E is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 315.0 MHz receivers. Receivers using this filter include superheterodynes with IF's at 10.7 MHz or 500 kHz, plus direct conversion and superregeneratives. Typical applications of these receivers are wireless remote-control and security devices operating in North America. This coupled-resonator filter (CRF) uses selective null placement to provide typically more than 40 dB suppression of LO and image responses in superheterodyne receivers with 10.7 MHz IF's. RFM's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

RF1439E

**315.00 MHz
SAW Filter**



**SM3030-6 Case
3.0 x 3.0**

Electrical Characteristics

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C	f _C	1, 2, 3	314.900	315.00	315.100	MHz
Insertion Loss	IL	1		2.0	2.5	dB
3 dB Bandwidth	BW ₃	1, 3	850	900	950	kHz
Passband Ripple (Relative to IL _{min}) f _c ±200 kHz	BW ₃	1, 3		0.4	1.2	dB
Rejection 10 - 297 MHz 297 - 307 MHz 307 - 312 MHz 312 - 314 MHz 316.5 - 325 MHz 325 - 329.5 MHz 329.5 - 339.4 MHz 339.4 - 1000 MHz		1, 3, 10, 11	48	51		dB
			40	44		
			30	34		
			13	16		
			14	17		
			35	38		
			43	46		
			47	50		
Frequency Temperature Coefficient	FTC	3, 4		0.032		ppm/°C ²
Frequency Aging	Absolute Value during the First Year	fA	5	<±10		ppm/yr
Impedance @ f _C	Input Z _{IN} = R _{IN} C _{IN}	Z _{IN}	TBD			
	Output Z _{OUT} = R _{OUT} C _{OUT}	Z _{OUT}	TBD			
Lid Symbolization (in addition to Lot and/or Date Codes)		793 // YWWS				
Standard Reel Quantity	7 Inch Reel	9	500 Pieces/Reel			
Standard Reel Quantity	13 Inch Reel		3000 Pieces/Reel			

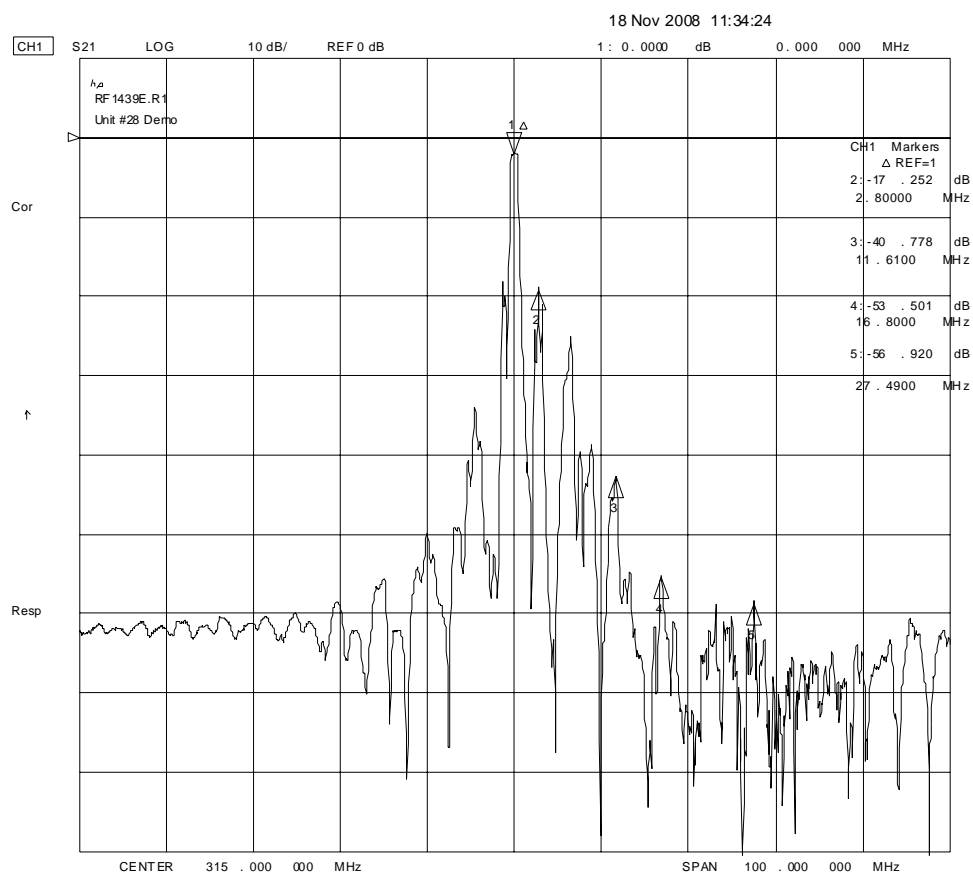


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

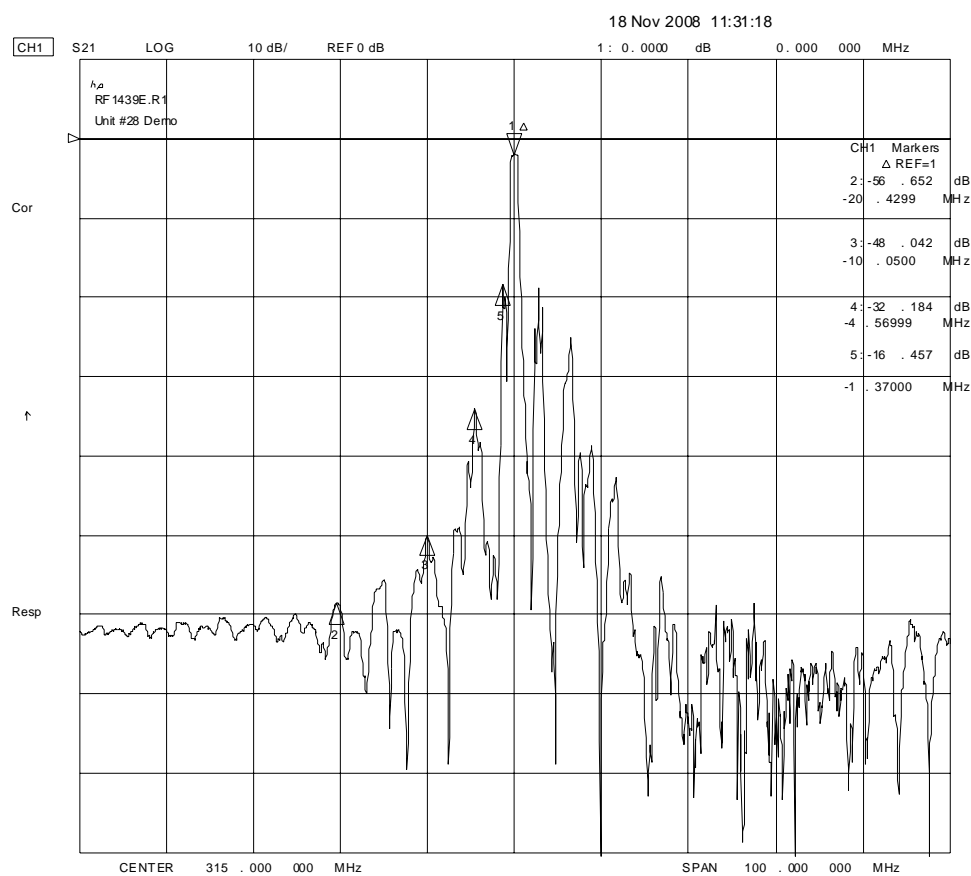
Notes:

1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with VSWR \leq 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency, f_c . Note that insertion loss and bandwidth are dependent on the impedance matching component values and quality.
2. The frequency f_c is defined as the midpoint between the 3dB frequencies.
3. Where noted, specifications apply over the entire specified operating temperature range of -40 to 90°C.
4. The turnover temperature, T_O, is the temperature of maximum (or turnover) frequency, f_o . The nominal frequency at any case temperature, T_c, may be calculated from: $f = f_o [1 - \text{FTC} (T_o - T_c)^2]$.
5. Frequency aging is the change in f_c with time and is specified at +65°C or less. Aging may exceed the specification for prolonged temperatures above +65°C. Typically, aging is greatest the first year after manufacture, decreasing significantly in subsequent years.
6. The design, manufacturing process, and specifications of this device are subject to change without notice.
7. One or more of the following U.S. Patents apply: 4,54,488, 4,616,197, and others pending.
8. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
9. Tape and Reel Standard for ANSI / EIA 481.
10. These values are attainable by using the optional pin out.
11. Typical rejection is defined as the typical rejection at the worst frequency in the band.

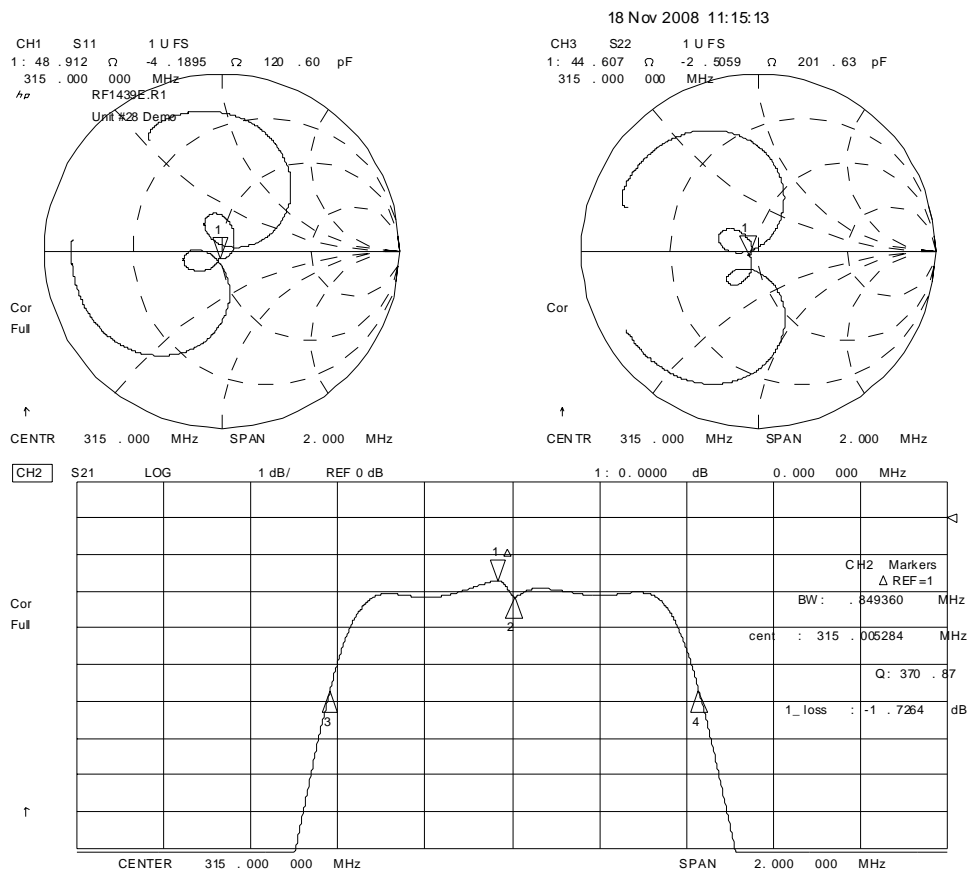
RF1439E Filter Plot with High-Side Attenuation Markers



RF1439E Filter Plot with Low-Side Attenuation Markers



RF1439E Filter Pass-band Impedance and Amplitude Plots

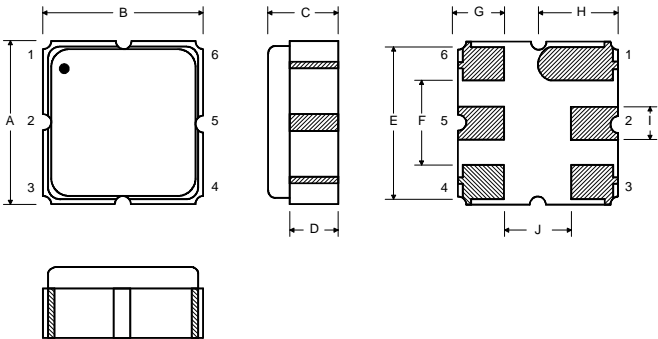


Absolute Maximum Ratings

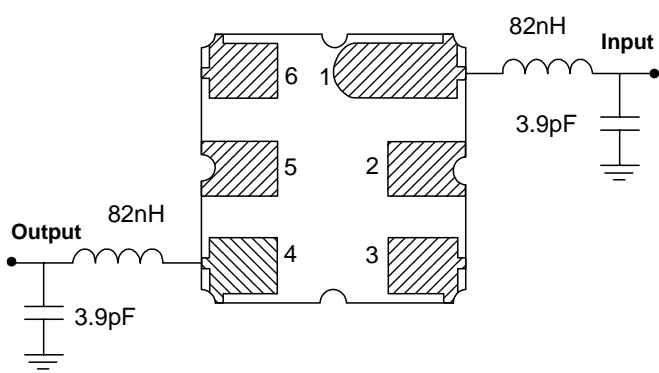
Rating	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature	10 seconds / 5 cycles maximum	260 °C

Electrical Connections

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



Matching Circuit to 50Ω



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