

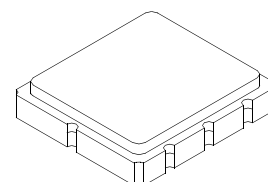
- **Ideal Front-End Filter for European Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**



The RF3319E 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 superheterodyne receivers with 10.7 MHz or lower intermediate frequencies, plus direct conversion and superregenerative receivers. Typical applications of these receivers are wireless remote-control and security devices operating in Europe under ETSI I-ETS 300 220 regulations.

## RF3319E

## 868.95 MHz SAW Filter



**SM3030-6 Case**  
**3.0 x 3.0**

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units	
Center Frequency @ 25°C	f <sub>C</sub>	1, 2, 3	868.80	868.95	869.10	MHz	
Insertion Loss	IL	1		2.4	4.0	dB	
3 dB Bandwidth	BW <sub>3</sub>	1, 3	800	900	1000	kHz	
Passband Ripple, Fc ±300 kHz		1, 3		1.2	2.0	dB <sub>P-P</sub>	
Attenuation: (relative to IL <sub>MIN</sub> )	10 - 859 MHz	1, 3	33	35		dB	
	859 - 864 MHz		32	34			
	864 - 867.2 MHz		12	14			
	870.6 - 872 MHz		19	21			
	872 - 895 MHz		15	17			
	895 - 1030 MHz		38	40			
Temperature Freq. Temp. Coefficient	FTC	3, 4		0.032		ppm/ °C <sup>2</sup>	
Frequency Aging	Absolute Value during the First Year	fA	5		<±10		ppm/yr
Impedance @ f <sub>C</sub>	Input Z <sub>IN</sub> = R <sub>IN</sub>    C <sub>IN</sub>	Z <sub>IN</sub>	1	84.13 Ω    6.0 pF			
	Output Z <sub>OUT</sub> = R <sub>OUT</sub>    C <sub>OUT</sub>	Z <sub>OUT</sub>		180.84 Ω    4.0 pF			
Lid Symbolization (in addition to Lot and/or Date Codes)		695 // YWWS					
Standard Reel Quantity	7 Inch Reel	9	500 Pieces/Reel				
Standard Reel Quantity	13 Inch Reel		3000 Pieces/Reel				

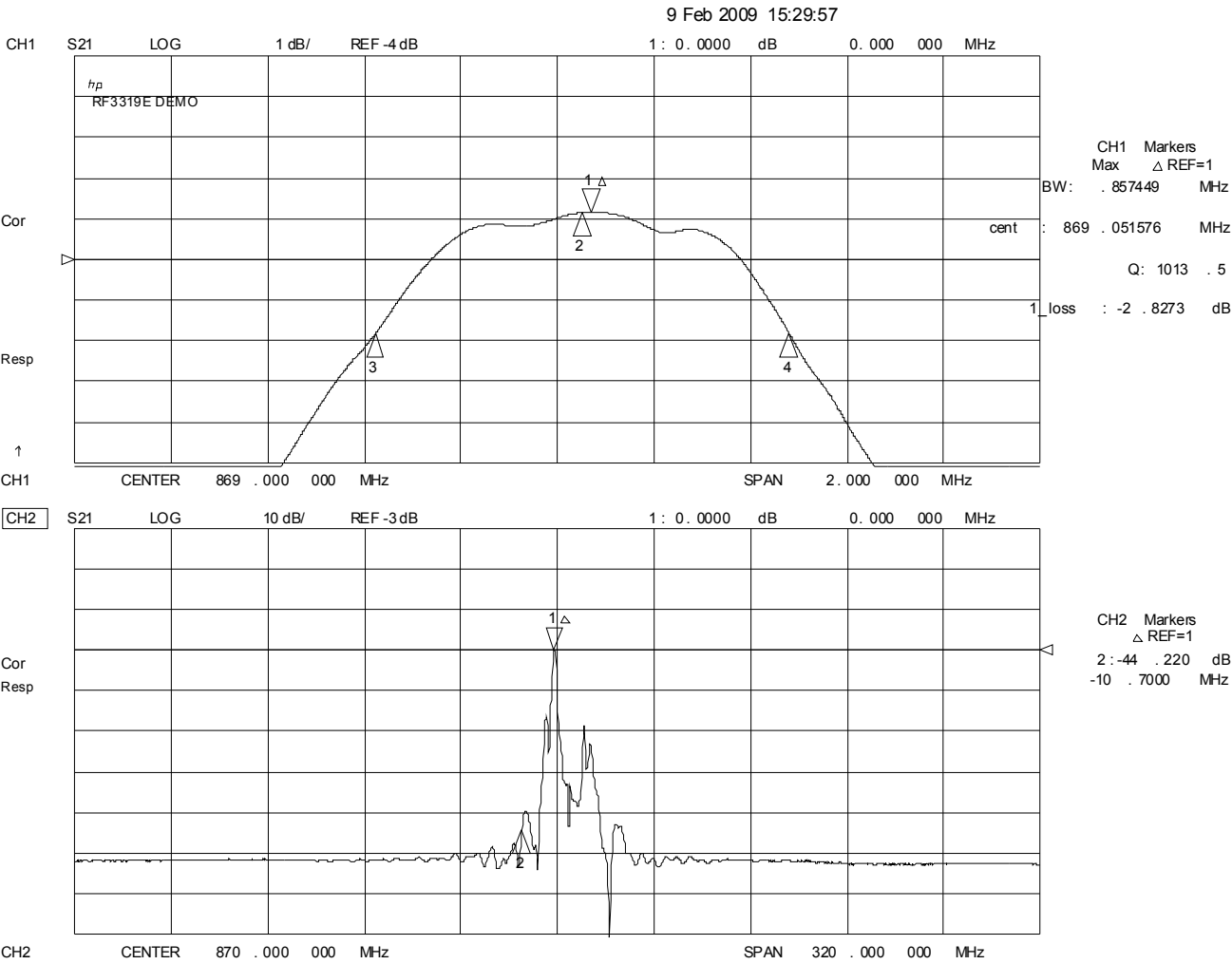


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

### NOTES:

1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50  $\Omega$  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 3 dB 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:  
$$f = f_O [1 - FTC (T_O - T_C)^2]$$
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.

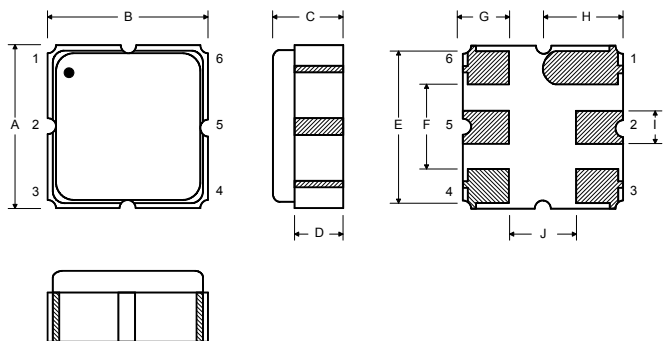
# RF3319E Passband and Broadband Amplitude Response



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

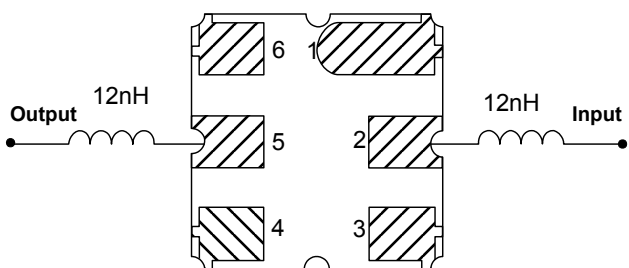
### Electrical Connections

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



### Case Dimensions

### Matching Circuit to 50Ω



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

OPTIONAL

### Electrical Connections

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

### Matching Circuit to 50Ω

