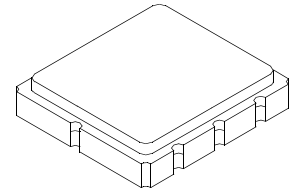




**RF3319E**

**868.95 MHz  
SAW Filter**



**SM3030-6 Case  
3.0 x 3.0**

- **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.

**Electrical Characteristics**

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C	$f_c$	1, 2, 3	868.80	868.95	869.10	MHz
Insertion Loss	IL	1		2.4	4.0	dB
3 dB Bandwidth	$BW_3$	1, 3	800	900	1000	kHz
Passband Ripple, $F_c \pm 300$ kHz		1, 3		1.2	2.0	dB <sub>p-p</sub>
Attenuation: (relative to $IL_{MIN}$ )	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 @ $f_c$	Input $Z_{IN} = R_{IN} \parallel C_{IN}$	1	84.13 $\Omega$    6.0 pF			
	Output $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		180.84 $\Omega$    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		



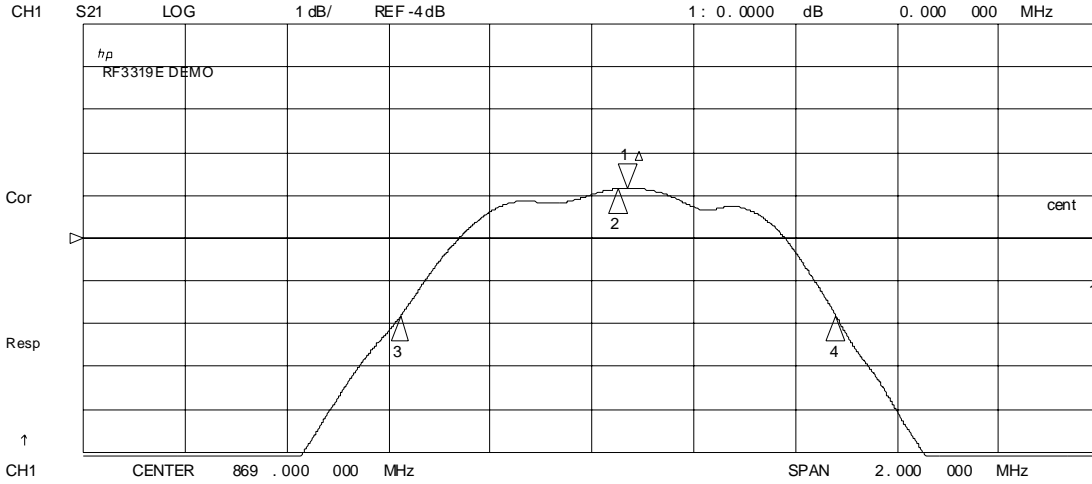
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**Notes:**

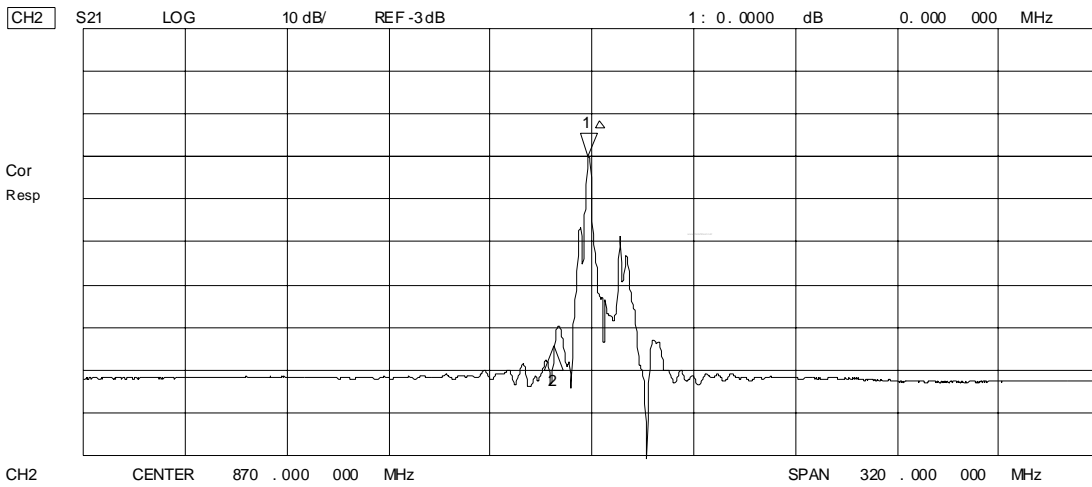
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50  $\Omega$  test system with VSWR  $\leq$  1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency,  $f_c$ . Note that 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

9 Feb 2009 15:29:57



CH1 Markers  
Max  $\Delta$  REF=1  
BW: .857449 MHz  
cent : 869 .051576 MHz  
Q: 1013 .5  
1\_loss : -2 .8273 dB



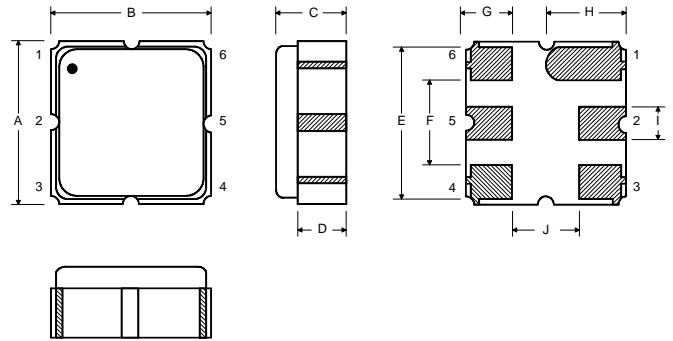
CH2 Markers  
 $\Delta$  REF=1  
2 : -44 .220 dB  
-10 .7000 MHz

## Absolute Maximum Ratings

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

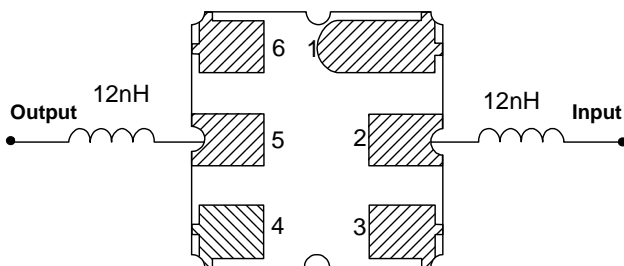
Pin	Connection
1	Input Ground
2	Input
3	Ground
4	Output Ground
5	Output
6	Ground



## Case Dimensions

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

