

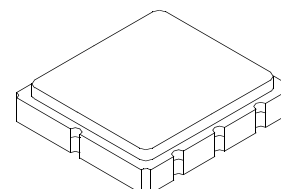


# RF3600E

- **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)**



## 868.60 MHz SAW Filter



**SM3030-8 Case**  
**3.0 x 3.0**

The RF3600E is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 868.6 MHz receivers. Receiver designs using this filter include superheterodyne with 10.7 MHz or lower intermediate frequencies, plus direct conversion and superregeneratives. Typical applications of these receivers are wireless remote-control and security devices operating in Europe under ETSI I-ETS 300 220.

Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C		$f_C$	1, 2, 3		868.60		MHz
Insertion Loss		IL	1, 3		1.8	2.3	dB
3 dB Bandwidth		BW <sub>3</sub>	1, 2, 3		1600	2100	kHz
Passband Ripple, 868 to 870 MHz					0.8	1.5	dB <sub>p-p</sub>
Attenuation: (relative to IL <sub>MIN</sub> )	10 to 800 MHz		1, 3	47	50		dB
	800 to 858 MHz			32	35		
	858 to 862 MHz			25	28		
	862 to 864 MHz			17	20		
	872 to 876 MHz			19	22		
	876 to 888 MHz			15	18		
	888 to 890 MHz			32	35		
	902 to 1000 MHz			35	38		
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 $Z_{IN} = R_{IN} \parallel C_{IN}$	$Z_{IN}$	1	4.7 KΩ    1.57 pF			
	Output $Z_{OUT} = R_{OUT} \parallel C_{OUT}$	$Z_{OUT}$		3.8 KΩ    1.74 pF			
Lid Symbolization (in addition to Lot and/or Date Codes)				816 // YWWS			
Standard Reel Quantity	Reel Size 7 Inch		9	500 Pieces/Reel			
	Reel Size 13 Inch			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 ≤ 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 and passband shape 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:  

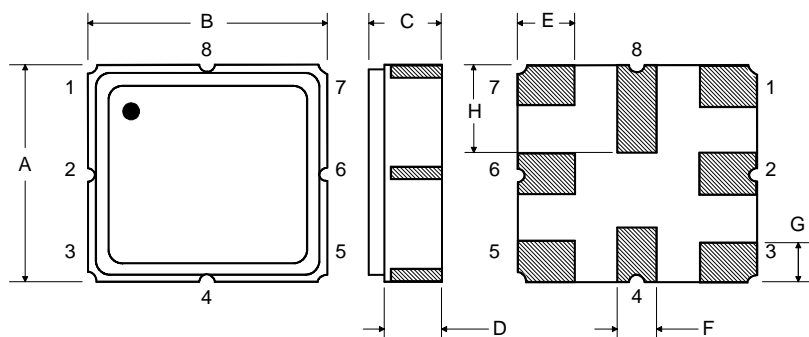
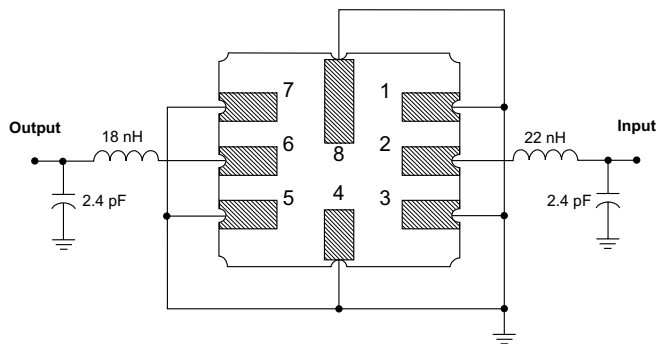
$$f = f_O [1 - FTC (T_O - T_C)^2]$$
5. Frequency aging is the change in  $f_C$  with time and is specified at +65 °C or less. Aging may exceed the specification for prolonged temperatures above +65 °C. Typically, aging is greatest the first year after manufacture, decreasing significantly in subsequent years.
6. The design, manufacturing process, and specifications of this device are subject to change.
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.

## 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 Ground
2	Input
3	Ground
4	Case Ground
5	Output Ground
6	Output
7	Ground
8	Case Ground

Matching Circuit to 50  $\Omega$ 

## 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	1.14	1.27	1.40	0.045	0.050	0.055
D	0.79	0.92	1.05	0.031	0.036	0.041
E	0.62	0.75	0.88	0.024	0.029	0.034
F	0.47	0.60	0.73	0.018	0.024	0.029
G	0.47	0.60	0.73	0.018	0.024	0.029
H	1.07	1.20	1.33	0.042	0.047	0.052

## OPTIONAL

## Electrical Connections

Pin	Connection
1	Input
2	Input Ground
3	Ground
4	Case Ground
5	Output
6	Output Ground
7	Ground
8	Case Ground

Matching Circuit to 50  $\Omega$ 