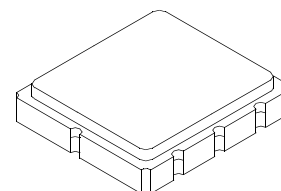




**RF3701E**

**433.92 MHz  
SAW Filter**



**SM3030-8 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 RF3701E is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end RF selectivity in 433.92 MHz receivers. Receiver designs using this filter include superheterodyne with 10.7 MHz or lower intermediate frequencies, plus direct conversion and superregeneratives.

**Electrical Characteristics**

Characteristic	Sym	Notes	Minimum	Typical	Maximum	Units
Center Frequency @ 25°C	$f_C$	1, 2, 3		433.92		MHz
Insertion Loss	$IL_{MIN}$	1, 3		2.5	3.2	dB
3 dB Bandwidth	$BW_3$	1, 2, 3	650	750	850	kHz
Passband Ripple, 433.72 to 434.12 MHz				0.5	1.0	dB <sub>p-p</sub>
Attenuation relative to $IL_{MIN}$	10 to 414 MHz	1, 3	44	47		dB
	414 to 424 MHz		42	45		
	424 to 431 MHz		27	30		
	431 to 432 MHz		17	20		
	432 to 433 MHz		14	17		
	434.92 to 442 MHz		13	16		
	442 to 550 MHz		33	37		
550 to 1000 MHz	47	50				
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	3530 Ω    2.42 pF		
	Output $Z_{OUT} = R_{OUT} \parallel C_{OUT}$	$Z_{OUT}$		3330 Ω    2.42 pF		
Lid Symbolization (in addition to Lot and/or Date Codes)				940 // 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

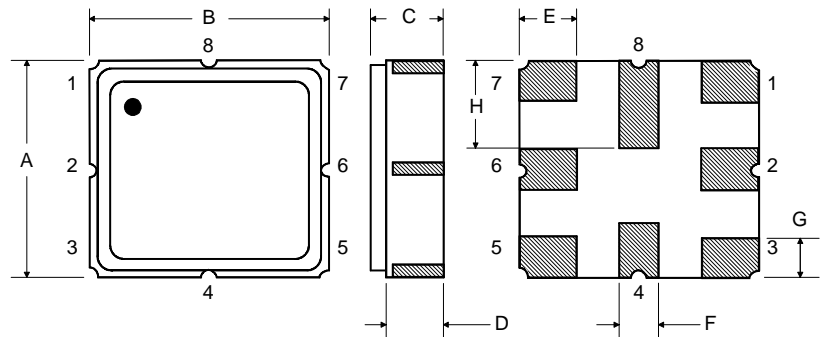
Characteristic	Value	Units
Input Power Level	10	dBm
DC Voltage	12	VDC
Storage Temperature	-40 to +125	°C
Operable Temperature Range	-40 to +125	°C
Soldering Temperature (10 seconds / 5 cycles maximum)	260	°C

## SM3030-8 Case

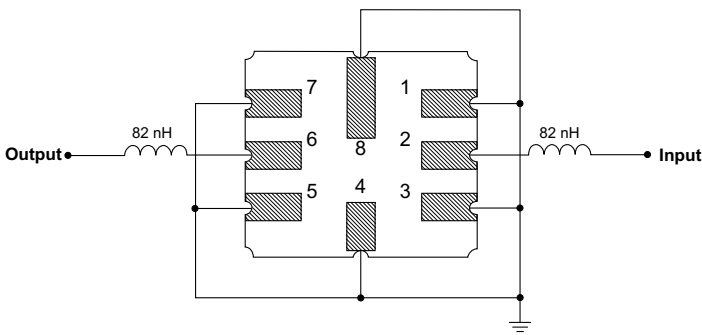
### 8-Terminal Ceramic Surface-Mount Case 3.0 x 3.0 mm Nominal Footprint

#### 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 Ω

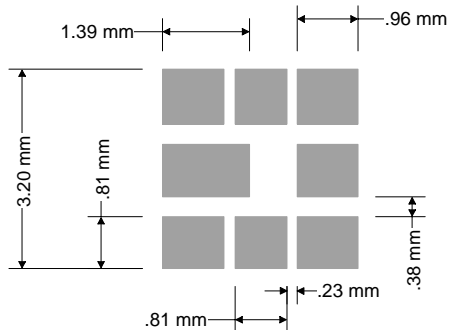


#### Case Dimensions

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

#### Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	



#### PCB Footprint Dimensions