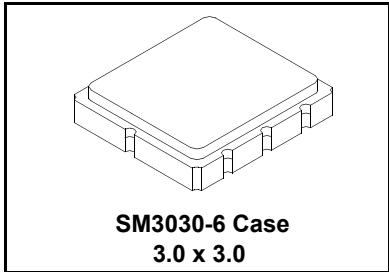


RF3319E

**868.95 MHz
SAW Filter**



- **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.

| 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 _{P-P} |
| 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 ² |
| 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 Ω 6.0 pF | | | |
| | Output $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | 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 | | |



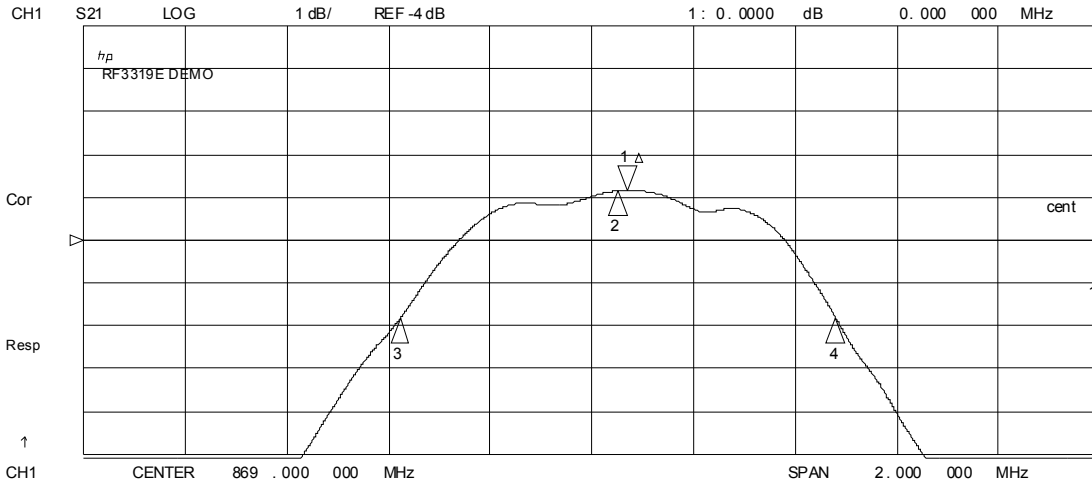
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

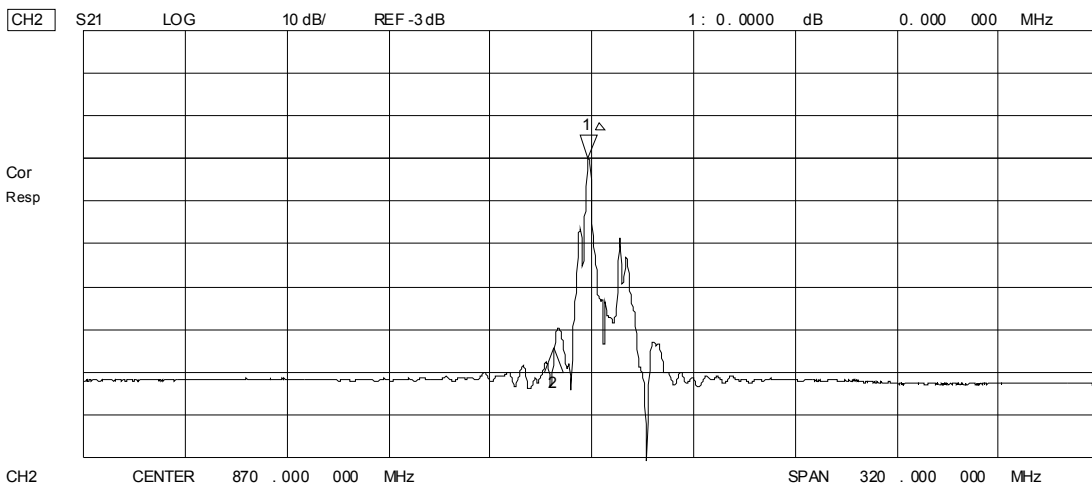
1. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture which is connected to a 50 Ω test system with VSWR \leq 1.2:1. The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency, f_c . Note that insertion loss and bandwidth are dependent on the impedance matching component values and quality.
2. The frequency f_c is defined as the midpoint between the 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 Δ REF=1
BW: .857449 MHz
cent : 869 .051576 MHz
Q: 1013 .5
1_loss : -2 .8273 dB

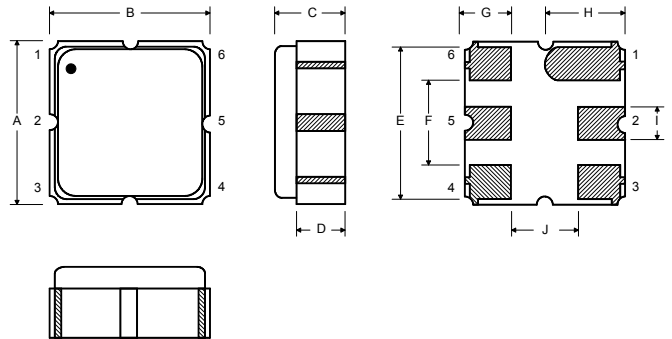


CH2 Markers
 Δ REF=1
2 : -44 .220 dB
-10 : 7000 MHz

| 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

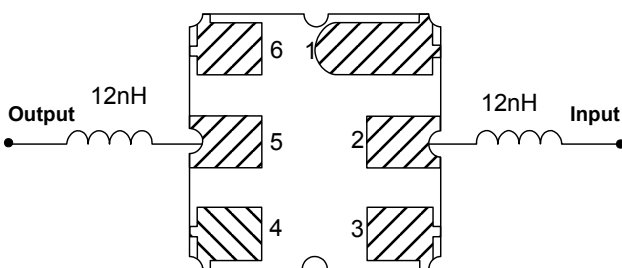
| Pin | Connection |
|-----|---------------|
| 1 | Input Ground |
| 2 | Input |
| 3 | Ground |
| 4 | Output Ground |
| 5 | Output |
| 6 | Ground |



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

