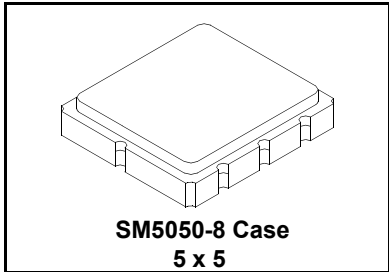


- **Ideal Front-End Filter for European Wireless Receivers**
- **Low-Loss, Coupled-Resonator Quartz Design**
- **Simple External Impedance Matching**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Tape and Reel Standard per ANSI/EIA-481**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

RoHS
Compliant

RF3336C

868.35 MHz
SAW Filter



The RF3336C is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter designed to provide front-end selectivity in 868.35 MHz receivers. Receiver designs using this filter include superhet with 10.7 MHz or 500 kHz IF, direct conversion and superregen. Typical applications of these receivers are wireless remote-control and security devices operating in Europe under ETSI I-ETS 300 220, in Germany under FTZ 17 TR 2100, in the United Kingdom under DTI MPT 1340 (for automotive only), in France under PTT Specifications ST/PAA/TPA/AGH/1542, and in Scandinavia.

This coupled-resonator filter (CRF) uses selective null placement to provide suppression, typically greater than 30 dB, of the LO and image spurious responses of superhet receivers with 10.7 MHz IF. RFMi's advanced SAW design and fabrication technology is utilized to achieve high performance and very low loss with simple external impedance matching.

| Characteristic | | Sym | Notes | Minimum | Typical | Maximum | Units |
|----------------------------------------------|--------------------------------------|------------------|-------|---------|---------|---------|---------------------|
| Center Frequency @ 25°C | Absolute Frequency | f_c | | | 868.35 | | MHz |
| | Tolerance from 868.35 MHz | Δf_c | | | | ±125 | kHz |
| Insertion Loss | | IL | | | 2.6 | 4.0 | dB |
| 3 dB Bandwidth | | BW_3 | | 500 | 700 | 800 | kHz |
| Rejection | at $f_c - 21.4$ MHz (Image) | | | 30 | 40 | | dB |
| | at $f_c - 10.7$ MHz (LO) | | | 15 | 30 | | |
| | Ultimate | | | | 80 | | |
| Temperature | Operating Case Temp. | T_C | | -40 | | +85 | °C |
| | Turnover Temperature | T_O | | 15 | 25 | 40 | °C |
| | Turnover Frequency | f_O | | | f_c | | MHz |
| | Freq. Temp. Coefficient | FTC | | | 0.032 | | ppm/°C ² |
| Frequency Aging | Absolute Value during the First Year | fA | | | <±10 | | ppm/yr |
| External Impedance | Input Series Inductance | L_1 | | | 15 | | nH |
| | Input Shunt Capacitance | C_1 | | | 1.0 | | pH |
| | Output Series Inductance | L_2 | | | 10 | | nH |
| | | | | | | | |
| Standard Reel Quantity | Reel Size 7 inch | 500 Pieces/Reel | | | | | |
| | Reel Size 13 inch | 3000 Pieces/Reel | | | | | |
| Lid Symbolization (Y=year, WW=week, S=shift) | 673// <u>Y</u> <u>WW</u> <u>S</u> | | | | | | |



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

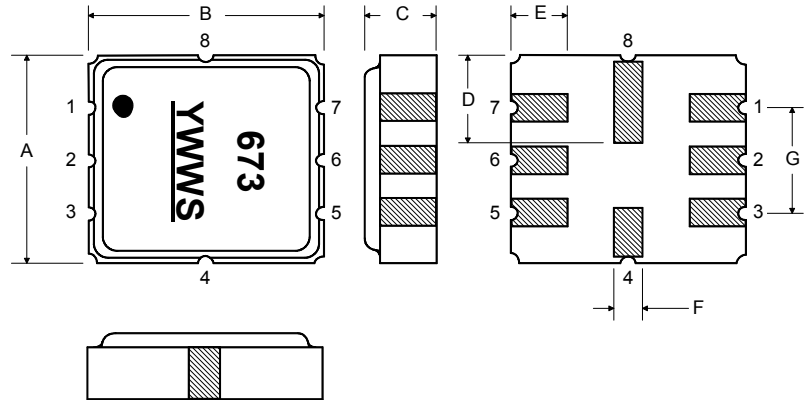
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

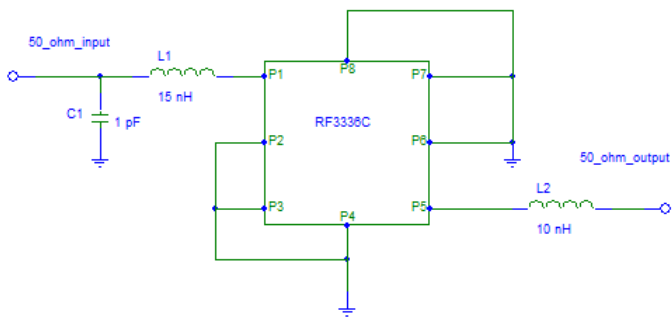
| Rating | Value | Units |
|-----------------------|------------------------------|--------|
| Input Power Level | 10 | dBm |
| DC Voltage | 12 | VDC |
| Storage Temperature | -40 to +85 | °C |
| Soldering Temperature | (10 seconds / 5 cycles max.) | 260 °C |

Electrical Connections

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



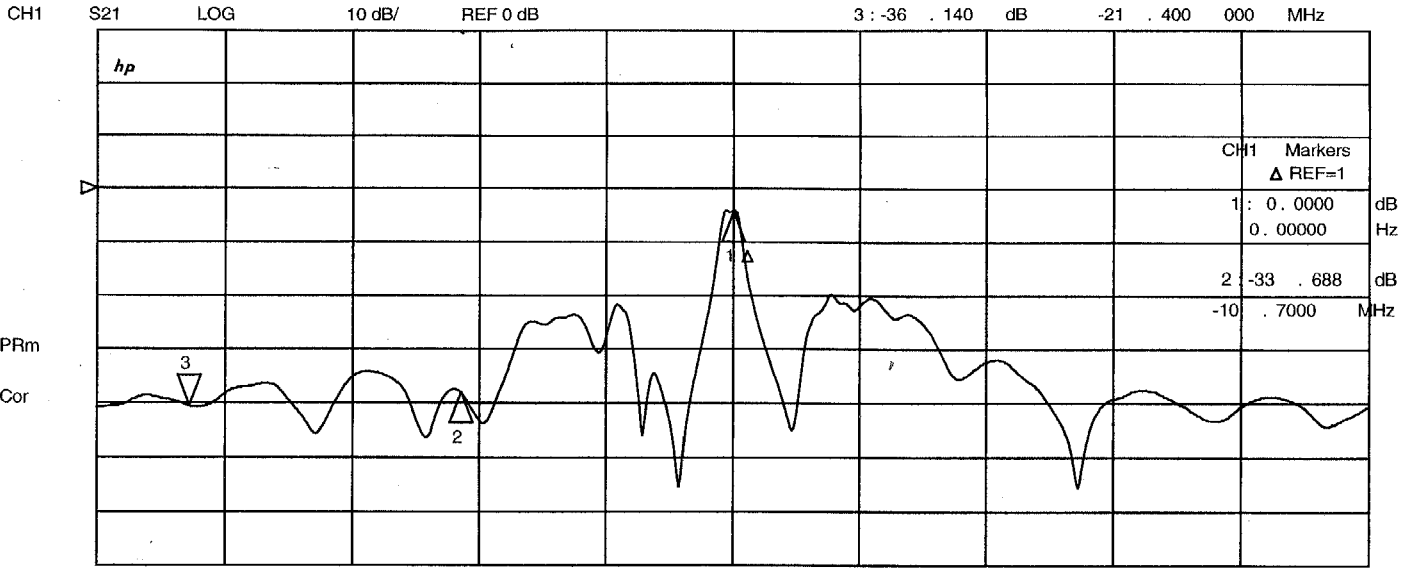
Matching Circuit to 50Ω



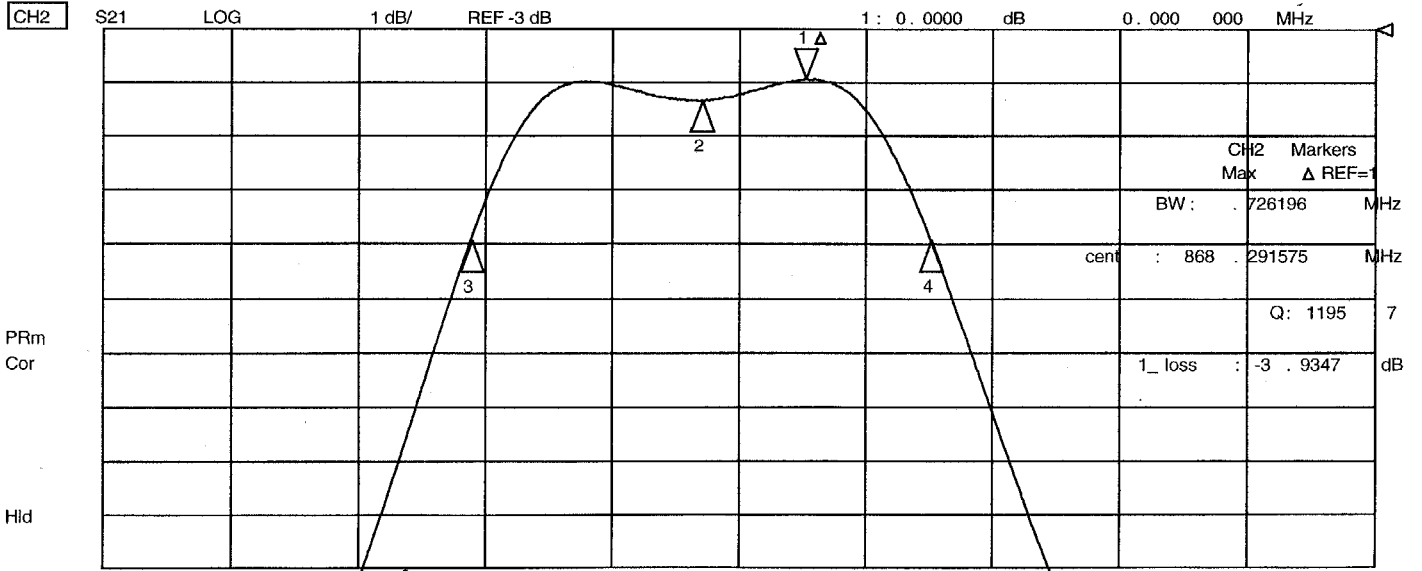
Case Dimensions

| Dimension | mm | | | Inches | | |
|-----------|------|------|------|--------|-------|-------|
| | Min | Nom | Max | Min | Nom | Max |
| A | 4.8 | 5.0 | 5.2 | 0.189 | 0.197 | 0.205 |
| B | 4.8 | 5.0 | 5.2 | 0.189 | 0.197 | 0.205 |
| C | | | 1.7 | | | 0.067 |
| D | | 2.08 | | | 0.082 | |
| E | | 1.17 | | | 0.046 | |
| F | | 0.64 | | | 0.025 | |
| G | 2.39 | 2.54 | 2.69 | 0.094 | 0.100 | 0.106 |

8 Nov 2002 14:28:52



CH1 CENTER 868.350000 MHz SPAN 50.000000 MHz



CH2 CENTER 868.350000 MHz SPAN 2.000000 MHz

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CH1 S11 1 U FS

1: 22.673 Ω 4.6221 Ω 847.15 pF

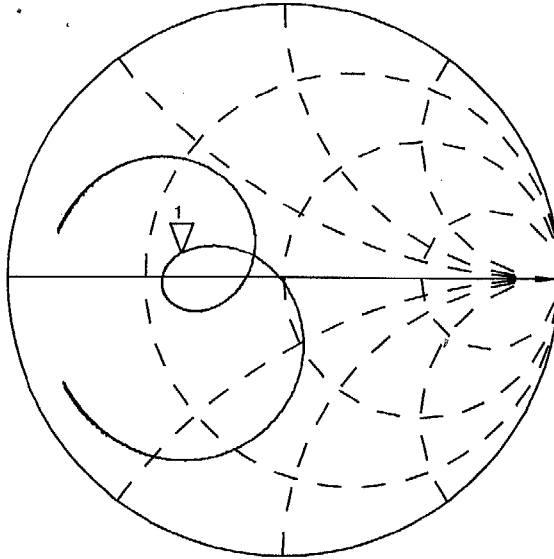
868.350 000 MHz

hp

PRm

Cor

Hld



CH2 S22 1 U FS

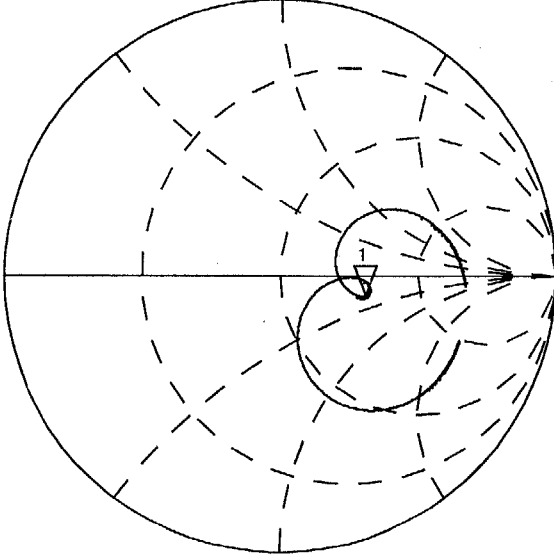
1: 93.020 Ω -15.398 Ω 11.903 pF

868.350 000 MHz

PRm

Cor

Hld



CENTER 868.350 000 MHz

SPAN 2.000 000 MHz

Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

