



## **SAW Components**

### **SAW Rx Filter**

GPS

|                       |                          |
|-----------------------|--------------------------|
| <b>Series/Type:</b>   | <b>B7839</b>             |
| <b>Ordering code:</b> | <b>B39162-B7839-K410</b> |
| <b>Date:</b>          | <b>Nov 16, 2005</b>      |
| <b>Version:</b>       | <b>2.1</b>               |



## SAW Components

B7839

## Low-Loss Filter for Mobile Communication

1575.42 MHz

## Data Sheet



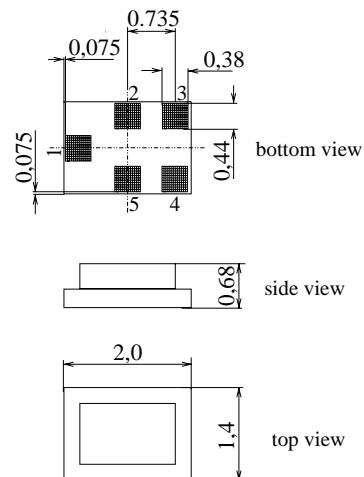
### Application

- Low-loss RF filter for GPS
- Unbalanced to unbalanced operation
- Very low insertion attenuation



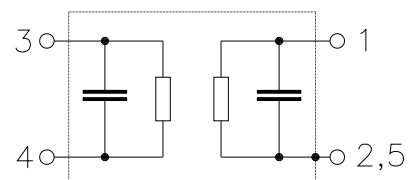
### Features

- Package size 2.0 x 1.4 x 0.68 mm<sup>3</sup>
- Package code QCS5E
- RoHS compliant
- Approx. weight 0.007 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals



### Pin configuration

- 4 Input, unbalanced
- 1 Output unbalanced
- 2,3,5 To be grounded





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#### Characteristics

|                               |                |   |                   |
|-------------------------------|----------------|---|-------------------|
| Operating temperature range:  | T              | = | −30 °C ... +85 °C |
| Terminating source impedance: | Z <sub>S</sub> | = | 50 Ω              |
| Terminating load impedance:   | Z <sub>L</sub> | = | 50 Ω              |

|   |                  | B7839 |                 |      |                  |
|---|------------------|-------|-----------------|------|------------------|
|   |                  | min.  | typ.<br>@ 25 °C | max. |                  |
| <b>Nominal frequency</b>                  | f <sub>N</sub>   | —     | 1575.42         | —    | MHz              |
| <b>Maximum insertion attenuation</b>      | α <sub>max</sub> | —     | 0.75            | 1.1  | dB               |
| 1574.42 ... 1576.42 MHz                   |                  | —     | 0.75            | 1.0  | dB <sup>1)</sup> |
| <b>Amplitude ripple in passband (p-p)</b> | Δα               | —     | 0.05            | 0.3  | dB               |
| 1574.42 ... 1576.42 MHz                   |                  | —     | 0.05            | 0.3  | dB               |
| <b>Attenuation</b>                        | α                |       |                 |      |                  |
| 0.1 ... 960.0 MHz                         |                  | 38    | 41              | —    | dB               |
| 960.0 ... 1460.0 MHz                      |                  | 35    | 40              | —    | dB               |
| 1460.0 ... 1513.0 MHz                     |                  | 22    | 29              | —    | dB               |
| 1645.4 ... 1710.0 MHz                     |                  | 23    | 28              | —    | dB               |
| 1710.0 ... 1990.0 MHz                     |                  | 35    | 40              | —    | dB               |
| 1990.0 ... 4000.0 MHz                     |                  | 30    | 35              | —    | dB               |
| 4000.0 ... 6000.0 MHz                     |                  | 20    | 28              | —    | dB               |
| <b>VSWR</b>                               |                  |       |                 |      |                  |
| 1574.42 ... 1576.42 MHz                   |                  | —     | 1.1             | 1.8  |                  |

<sup>1)</sup> 0 °C ... +55 °C

#### Maximum ratings

|                            |                  |                  |     |                                |
|----------------------------|------------------|------------------|-----|--------------------------------|
| Operable temperature range | T                | −40/+85          | °C  |                                |
| Storage temperature range  | T <sub>stg</sub> | −40/+85          | °C  |                                |
| DC voltage                 | V <sub>DC</sub>  | 3                | V   |                                |
| ESD voltage                | V <sub>ESD</sub> | 50 <sup>1)</sup> | V   | machine model, 10 pulses       |
| Input Power at             |                  |                  |     |                                |
| 1574.42 ... 1576.42 MHz    | P <sub>IN</sub>  | 3                | dBm | source and load impedance 50 Ω |
| 50.0...1460 and            |                  |                  |     | continuous wave signal         |
| 1710 ... 4000 MHz          | P <sub>IN</sub>  | 25               | dBm |                                |

<sup>1)</sup> acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



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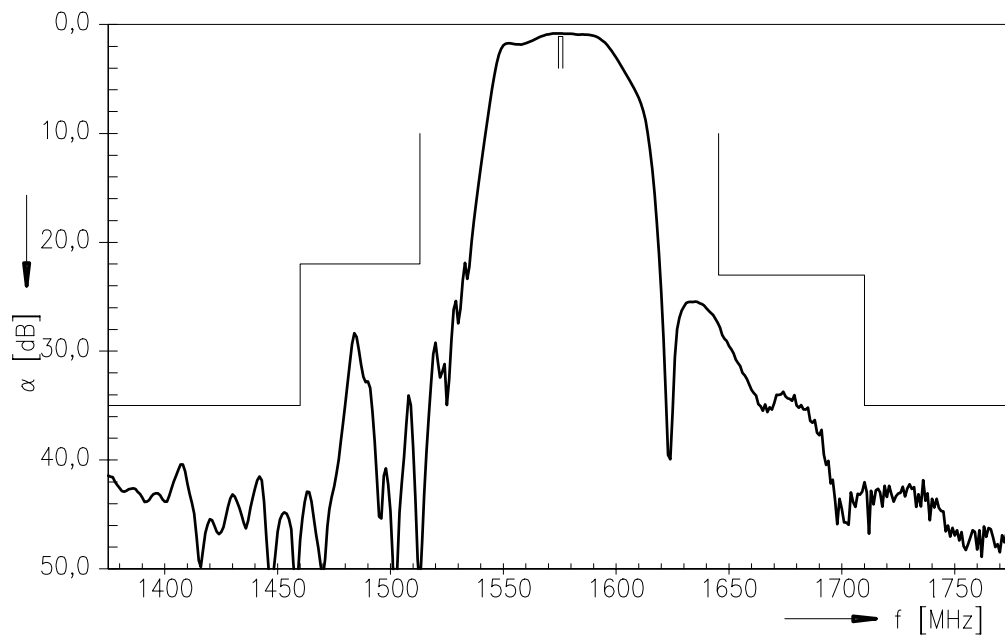
Low-Loss Filter for Mobile Communication

1575.42 MHz

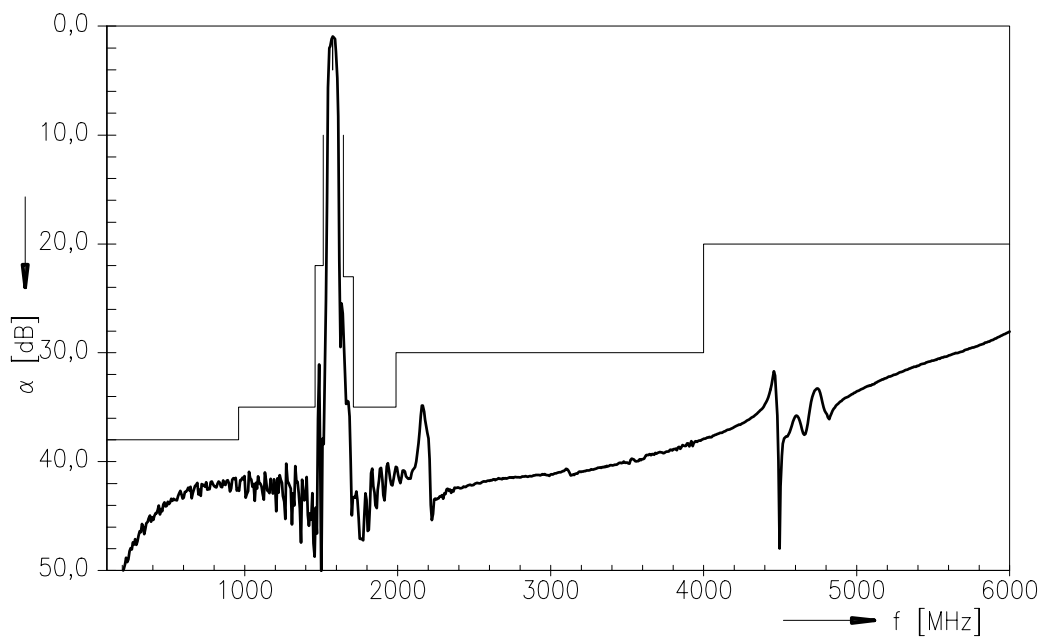
Data Sheet



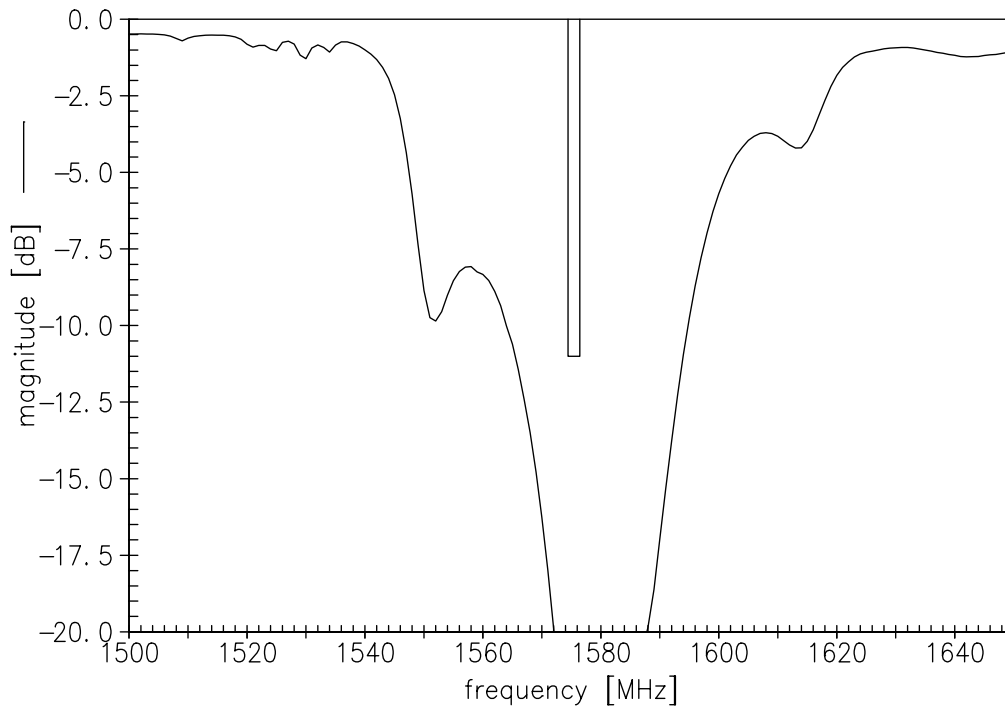
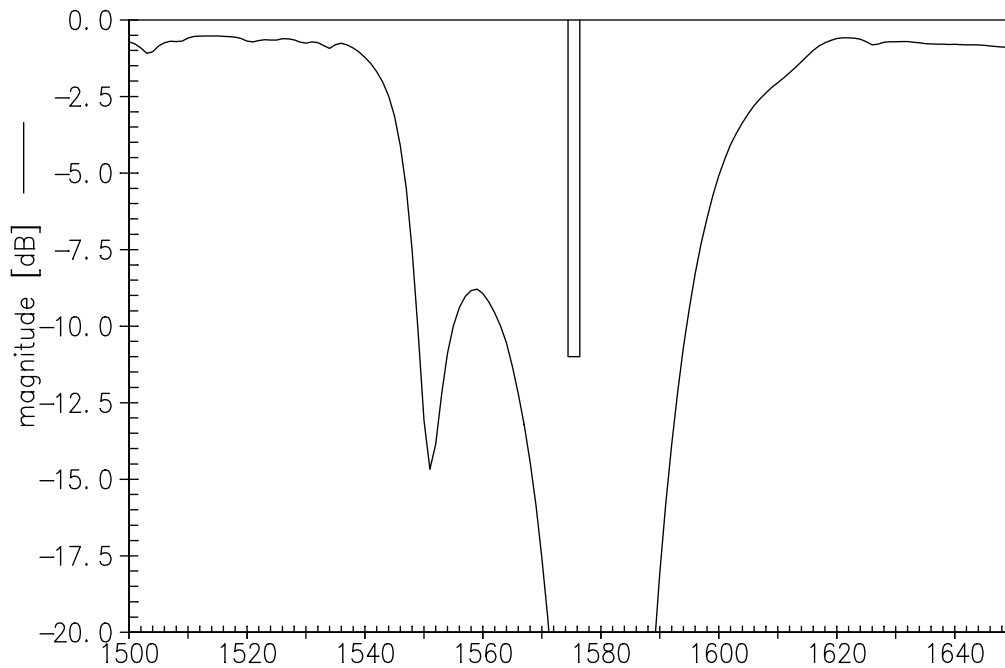
### Transfer function



### Transfer function (wideband)



Please read *cautions and warnings* and *important notes* at the end of this document.

**S<sub>11</sub> function****S<sub>22</sub> function**

**SAW Components****B7839****Low-Loss Filter for Mobile Communication****1575.42 MHz****Data Sheet**

|                            |                              |  |
|----------------------------|------------------------------|--|
| <b>Type</b>                | B7839                        |  |
| <b>Ordering code</b>       | B39162-B7839-K410            |  |
| <b>Marking and Package</b> | C61157-A7-A131               |  |
| <b>Packaging</b>           | F61074-V8151-Z000            |  |
| <b>Date Codes</b>          | L_1126                       |  |
| <b>S-Parameters</b>        | B7839_NB.s3p<br>B7839_WB.s3p |  |
| <b>Soldering profile</b>   | S_6001                       |  |

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