



# SAW Components

Data Sheet B7840





**SAW Components**

**B7840**

**Low-Loss Filter**

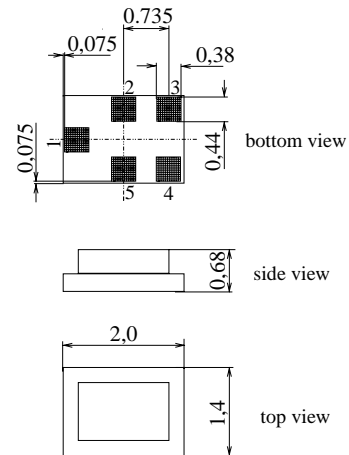
**1575,42 MHz**

**Data Sheet**

**Chip Sized SAW Package**

**Features**

- Low loss RF filter for GPS receivers
- Unbalanced to balanced operation
- Low amplitude ripple
- Impedance transformation from 50 Ω to 100 Ω
- Package for **Surface Mounted Technology (SMT)**



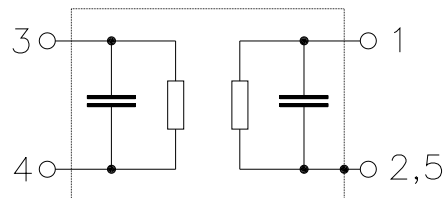
**Terminals**

- Ni, gold-plated

Dimensions 2,0x1,4 mm<sup>2</sup>, approx. weight 0,007 g

**Pin configuration**

- |      |                   |
|------|-------------------|
| 1    | Input, unbalanced |
| 3, 4 | Output, balanced  |
| 2, 5 | Case ground       |



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B7840 | B39162-B7840-C710 | C61157-A7-A82                    | F61074-V8151-Z000    |

**Electrostatic Sensitive Device (ESD)**

**Maximum ratings**

|                            |           |           |     |  |
|----------------------------|-----------|-----------|-----|--|
| Operable temperature range | $T$       | - 40/+ 85 | °C  | 824...1525, 1710...2500 MHz<br>elsewhere |
| Storage temperature range  | $T_{stg}$ | - 40/+ 85 | °C  |  |
| DC voltage                 | $V_{DC}$  | 3         | V   |  |
| Source power               |           | 10        |     |  |
| source 50 Ω, load 100 Ω    | $P_s$     | 5         | dBm |  |


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**Characteristics**

Operating temperature range:  $T_A = -30 \dots +85 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega \text{ unbal.}$   
 Terminating load impedance:  $Z_L = 100 \text{ } \Omega \text{ bal.}$

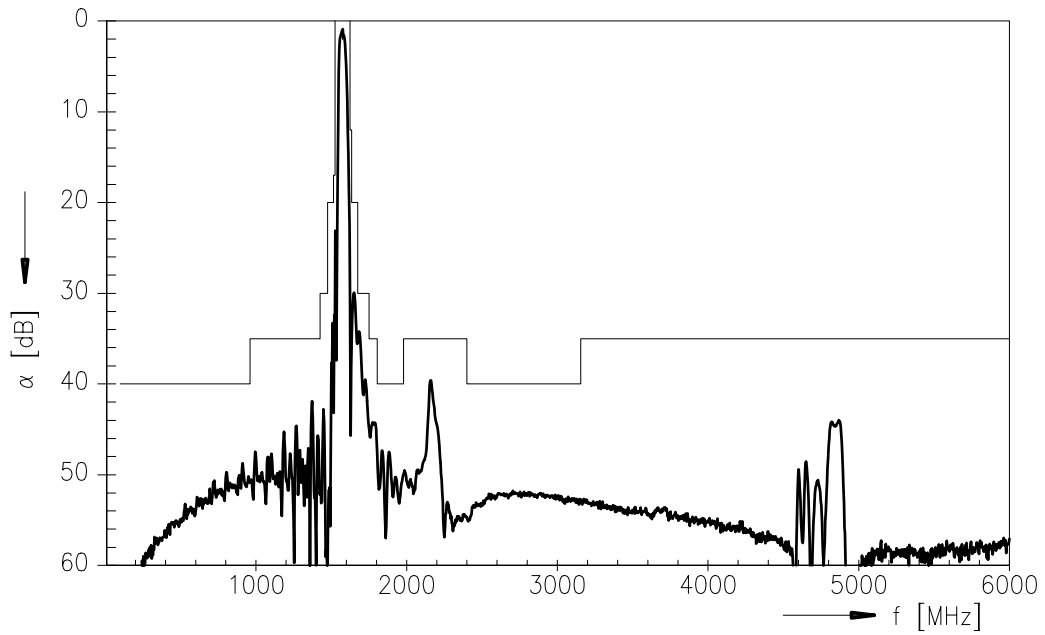
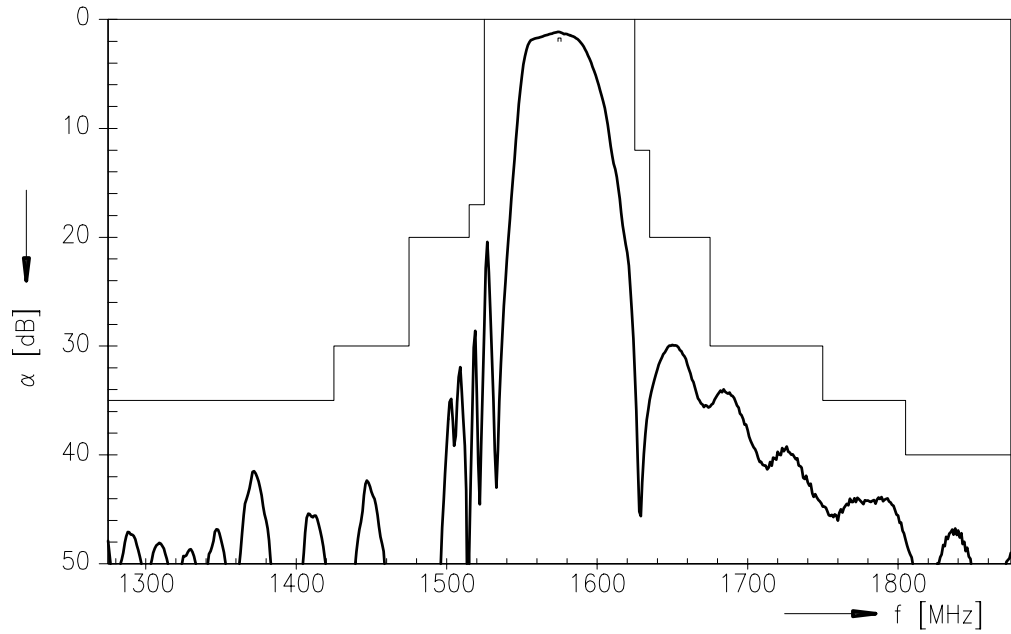
|  |                       | min. | typ.    | max. |     |
|--|-----------------------|------|---------|------|-----|
| <b>Nominal frequency</b>   | $f_N$                 | —    | 1575,42 | —    | MHz |
| <b>Maximum insertion attenuation</b>   | $\alpha_{\max}$       |      |         |      |     |
| 1574,42MHz ... 1576,42MHz*)  |                       | —    | 1,2     | 1,6  | dB  |
| 1574,42MHz ... 1576,42 MHz   |                       | —    | 1,2     | 1,7  | dB  |
| <b>Amplitude ripple in passband (p-p)</b>                                      | $\Delta\alpha$        |      |         |      |     |
| 1574,42MHz ... 1576,42 MHz   |                       | —    | 0,1     | 0,3  | dB  |
| <b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^\circ</math>)</b> |                       |      |         |      |     |
| 1574,42MHz ... 1576,42 MHz   |                       | -10  | 6       | 10   | °   |
| <b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>                 |                       |      |         |      |     |
| 1574,42MHz ... 1576,42 MHz   |                       | -1,0 | 0,2     | 1,0  | dB  |
| <b>Return loss</b>   |                       |      |         |      |     |
| 1574,42 ... 1576,42 MHz  |                       | 11,0 | 21      | —    | dB  |
| <b>VSWR</b>  |                       |      |         |      |     |
| 1574,42 ... 1576,42 MHz  |                       | —    | 1,2     | 1,8  |     |
| <b>Absolute attenuation</b>  | $\alpha_{\text{rel}}$ |      |         |      |     |
| 100,0 MHz ... 960,0 MHz  |                       | 40   | 48      | —    | dB  |
| 960,0 MHz ... 1425,0 MHz   |                       | 35   | 42      | —    | dB  |
| 1425,0 MHz ... 1475,0 MHz  |                       | 30   | 42      | —    | dB  |
| 1475,0 MHz ... 1515,0 MHz  |                       | 20   | 32      | —    | dB  |
| 1515,0 MHz ... 1525,0 MHz  |                       | 17   | 27      | —    | dB  |
| 1625,0 MHz ... 1635,0 MHz  |                       | 12   | 30      | —    | dB  |
| 1635,0 MHz ... 1675,0 MHz  |                       | 20   | 30      | —    | dB  |
| 1675,0 MHz ... 1750,0 MHz  |                       | 30   | 34      | —    | dB  |
| 1750,0 MHz ... 1805,0 MHz  |                       | 35   | 44      | —    | dB  |
| 1805,0 MHz ... 1980,0 MHz  |                       | 40   | 47      | —    | dB  |
| 1980,0 MHz ... 2400,0 MHz  |                       | 35   | 39      | —    | dB  |
| 2400,0 MHz ... 3155,0 MHz  |                       | 40   | 52      | —    | dB  |
| 3155,0 MHz ... 6000,0 MHz  |                       | 35   | 44      | —    | dB  |

 \*)  $T_A = +25 \text{ }^\circ\text{C}$



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Transfer function





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**Published by EPCOS AG**

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