



# *SAW Components*

*Data Sheet B7852*

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a blue glow and are positioned diagonally across the frame. In the background, there is a faint, stylized globe with circuitry patterns, suggesting a global network or technology theme. The overall color scheme is dark with blue and white highlights.



## SAW Components

B7852

## Low-Loss Filter for Mobile Communication

1842,5 MHz

### Data Sheet



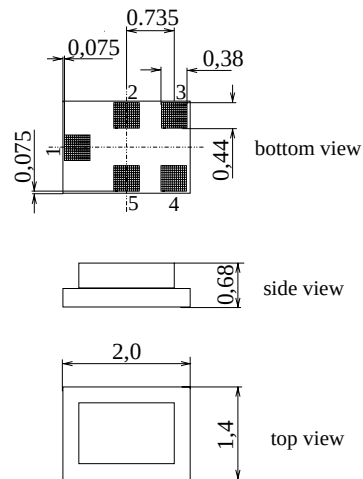
Chip sized SAW package QCS5E

#### Features

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 75 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50  $\Omega$  to 150  $\Omega$
- Suitable for GPRS class 1 to 12
- Package for **Surface Mount Technology (SMT)**
- Pb-free

#### Terminals

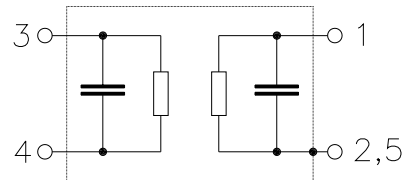
- Ni, gold-plated



Dimensions in mm, 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 |
|-------|-------------------|----------------------------------|----------------------|
| B7852 | B39182-B7852-K410 | C61157-A7-A131                   | F61074-V8151-Z000    |

Electrostatic Sensitive Device (ESD)

#### Maximum ratings

|                            |                  |             |                    |                           |
|----------------------------|------------------|-------------|--------------------|---------------------------|
| Operable temperature range | $T$              | - 40 / + 85 | $^{\circ}\text{C}$ |                           |
| Storage temperature range  | $T_{\text{stg}}$ | - 40 / + 85 | $^{\circ}\text{C}$ |                           |
| DC voltage                 | $V_{\text{DC}}$  | 5           | V                  |                           |
| ESD voltage                | $V_{\text{ESD}}$ | 50*         | V                  | Machine Model, 10 pulses  |
| Input Power at             |                  |             |                    |                           |
| GSM850, GSM900             | $P_{\text{IN}}$  | 15          | dBm                | peak power of GSM signal, |
| GSM1800, GSM1900           | $P_{\text{IN}}$  | 12          | dBm                | duty cycle 4:8            |
| Tx bands                   |                  |             |                    |                           |

\* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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### Characteristics

Operating temperature range:  $T = 25^{\circ}\text{C} \pm 2^{\circ}\text{C}$   
Terminating source impedance:  $Z_S = 50\ \Omega$   
Terminating load impedance:  $Z_L = 150\ \Omega \parallel 15\ \text{nH (balanced)}$

|                                                                                      |                 | min. | typ.        | max. |     |
|--------------------------------------------------------------------------------------|-----------------|------|-------------|------|-----|
| <b>Center frequency</b>                                                              | $f_C$           | —    | 1842,5      | —    | MHz |
| <b>Maximum insertion attenuation</b>                                                 | $\alpha_{\max}$ | —    | 1,5         | 2,1  | dB  |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Amplitude ripple (p-p)</b>                                                        | $\Delta\alpha$  | —    | 0,5         | 1,0  | dB  |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Input VSWR</b>                                                                    |                 | —    | 1,9         | 2,2  |     |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Output VSWR</b>                                                                   |                 | —    | 1,9         | 2,2  |     |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Output amplitude balance (<math> S_{31} / S_{21} </math>)</b>                     |                 | -1,0 | -0,4 / +0,6 | 1,0  | dB  |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b> |                 | -10  | -3 / +2     | 10   | °   |
| 1805,0 ... 1880,0 MHz                                                                |                 |      |             |      |     |
| <b>Attenuation</b>                                                                   | $\alpha$        |      |             |      |     |
| 0,0 ... 902,0 MHz                                                                    |                 | 30   | 53          | —    | dB  |
| 902,0 ... 940,0 MHz                                                                  |                 | 45   | 52          | —    | dB  |
| 940,0 ... 1705,0 MHz                                                                 |                 | 28   | 42          | —    | dB  |
| 1705,0 ... 1785,0 MHz                                                                |                 | 13   | 18          | —    | dB  |
| 1920,0 ... 1980,0 MHz                                                                |                 | 17   | 23          | —    | dB  |
| 1980,0 ... 2030,0 MHz                                                                |                 | 24   | 29          | —    | dB  |
| 2030,0 ... 2400,0 MHz                                                                |                 | 28   | 34          | —    | dB  |
| 2400,0 ... 2500,0 MHz                                                                |                 | 32   | 42          | —    | dB  |
| 2500,0 ... 2775,0 MHz                                                                |                 | 28   | 33          | —    | dB  |
| 2775,0 ... 2880,0 MHz                                                                |                 | 40   | 54          | —    | dB  |
| 2880,0 ... 3610,0 MHz                                                                |                 | 28   | 50          | —    | dB  |
| 3610,0 ... 3760,0 MHz                                                                |                 | 40   | 50          | —    | dB  |
| 3760,0 ... 5415,0 MHz                                                                |                 | 28   | 42          | —    | dB  |
| 5415,0 ... 5640,0 MHz                                                                |                 | 35   | 42          | —    | dB  |
| 5640,0 ... 6000,0 MHz                                                                |                 | 28   | 42          | —    | dB  |



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Operating temperature range:  $T = -20$  to  $+75$  °C  
Terminating source impedance:  $Z_S = 50 \Omega$   
Terminating load impedance:  $Z_L = 150 \Omega \parallel 15$  nH (balanced)

|                                                                                    |                 | min. | typ.        | max. |     |
|------------------------------------------------------------------------------------|-----------------|------|-------------|------|-----|
| <b>Center frequency</b>                                                            | $f_C$           | —    | 1842,5      | —    | MHz |
| <b>Maximum insertion attenuation</b>                                               | $\alpha_{\max}$ | —    | 1,7         | 2,3  | dB  |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Amplitude ripple (p-p)</b>                                                      | $\Delta\alpha$  | —    | 0,7         | 1,3  | dB  |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Input VSWR</b>                                                                  |                 | —    | 1,9         | 2,3  |     |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Output VSWR</b>                                                                 |                 | —    | 1,9         | 2,3  |     |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Output amplitude balance (<math> S_{31} / S_{21} </math>)</b>                   |                 | -1,0 | -0,5 / +0,6 | 1,0  | dB  |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b> |                 | -10  | -3 / +2     | 10   | °   |
| 1805,0 ... 1880,0 MHz                                                              |                 |      |             |      |     |
| <b>Attenuation</b>                                                                 | $\alpha$        |      |             |      |     |
| 0,0 ... 902,0 MHz                                                                  |                 | 30   | 53          | —    | dB  |
| 902,0 ... 940,0 MHz                                                                |                 | 45   | 52          | —    | dB  |
| 940,0 ... 1705,0 MHz                                                               |                 | 28   | 42          | —    | dB  |
| 1705,0 ... 1785,0 MHz                                                              |                 | 13   | 18          | —    | dB  |
| 1920,0 ... 1980,0 MHz                                                              |                 | 17   | 23          | —    | dB  |
| 1980,0 ... 2030,0 MHz                                                              |                 | 24   | 29          | —    | dB  |
| 2030,0 ... 2400,0 MHz                                                              |                 | 28   | 34          | —    | dB  |
| 2400,0 ... 2500,0 MHz                                                              |                 | 32   | 42          | —    | dB  |
| 2500,0 ... 2775,0 MHz                                                              |                 | 28   | 33          | —    | dB  |
| 2775,0 ... 2880,0 MHz                                                              |                 | 40   | 54          | —    | dB  |
| 2880,0 ... 3610,0 MHz                                                              |                 | 28   | 50          | —    | dB  |
| 3610,0 ... 3760,0 MHz                                                              |                 | 40   | 50          | —    | dB  |
| 3760,0 ... 5415,0 MHz                                                              |                 | 28   | 42          | —    | dB  |
| 5415,0 ... 5640,0 MHz                                                              |                 | 35   | 42          | —    | dB  |
| 5640,0 ... 6000,0 MHz                                                              |                 | 28   | 42          | —    | dB  |



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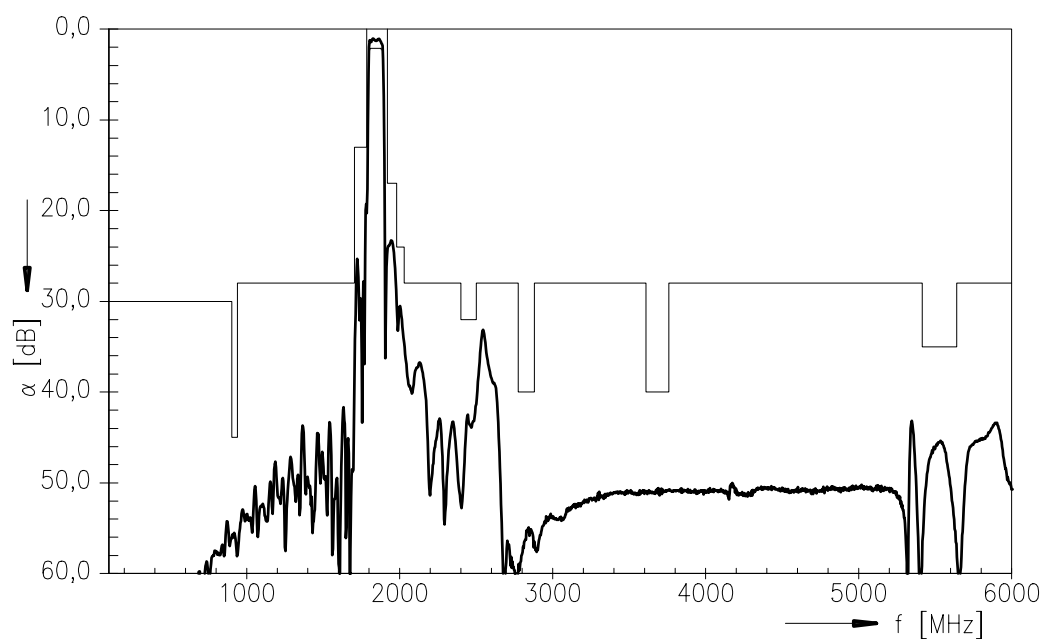
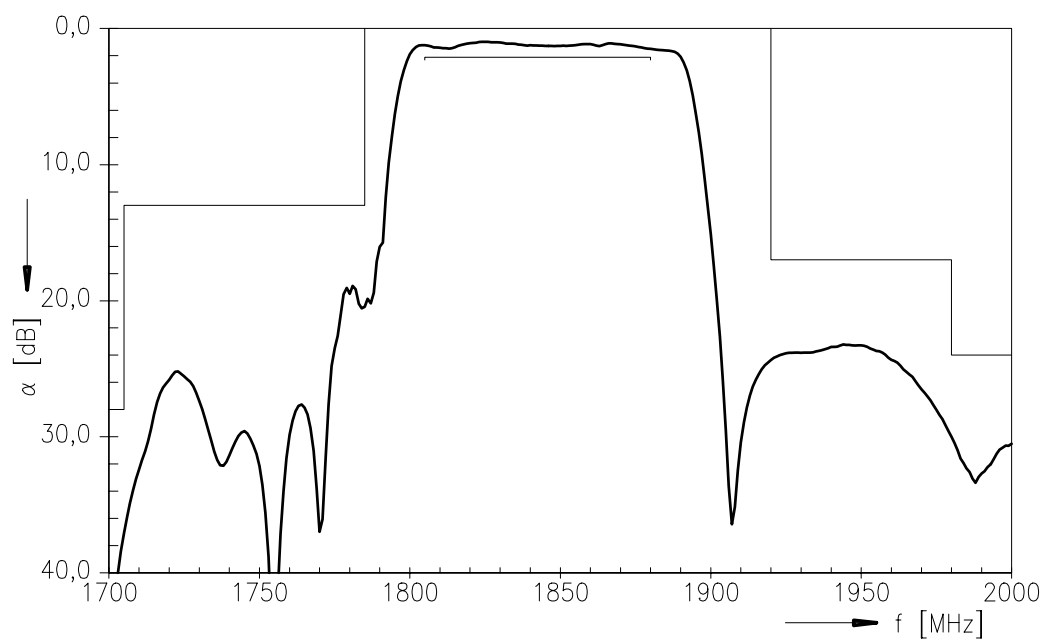
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### Transfer function





|                                                 |                   |
|-------------------------------------------------|-------------------|
| <b>SAW Components</b>                           | <b>B7852</b>      |
| <b>Low-Loss Filter for Mobile Communication</b> | <b>1842,5 MHz</b> |
| <b>Data Sheet</b>                               | <b>SMD</b>        |

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