



# *SAW Components*

*Data Sheet B3666*

Data Sheet

An abstract, grayscale graphic featuring a globe with a grid pattern, overlaid with a large, stylized, and slightly blurred "EPCOS" logo. The logo is rendered in a light gray, almost white, color, giving it a three-dimensional appearance as if it's floating or attached to the globe. The background is dark and textured, with some light streaks and a sense of motion or depth.

EPCOS



## SAW Components

B3666

## Low-Loss Filter

82,20 MHz

### Data Sheet

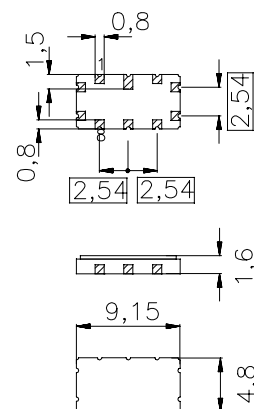
Ceramic SMD package QCC10B

#### Features

- Low-loss IF filter
- Ceramic SMD package
- Balanced or unbalanced operation possible
- Low insertion attenuation, high selectivity

#### Terminals

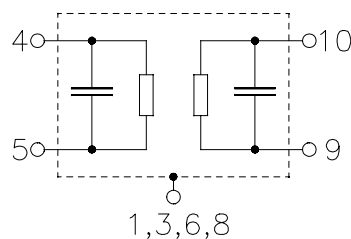
- Gold-plated



Dimensions in mm, approx. weight 0,23 g

#### Pin configuration

|         |                |
|---------|----------------|
| 4, 5    | Input          |
| 9,10    | Output         |
| 1,3,6,8 | Case ground    |
| 2,7     | To be grounded |



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3666 | B39820-B3666-Z710 | C61157-A7-A49                    | F61064-V8035-Z000    |

Electrostatic Sensitive Device (ESD)

#### Maximum ratings

|                            |           |           |     |
|----------------------------|-----------|-----------|-----|
| Operable temperature range | $T$       | - 30/+ 80 | °C  |
| Storage temperature range  | $T_{stg}$ | - 40/+ 85 | °C  |
| DC voltage                 | $V_{DC}$  | 0         | V   |
| Source power               | $P_s$     | 10        | dBm |



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### Characteristics

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| Reference temperature:        | $T = -10 \dots +80 \text{ }^{\circ}\text{C}$               |
| Terminating source impedance: | $Z_S = 50 \text{ } \Omega$ unbalanced and matching network |
| Terminating load impedance:   | $Z_L = 50 \text{ } \Omega$ unbalanced and matching network |

|                                                                                                                                        |                       | min. | typ.   | max. |                    |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------|--------|------|--------------------|
| <b>Nominal frequency</b>                                                                                                               | $f_N$                 | —    | 82,2   | —    | MHz                |
| <b>Minimum insertion loss</b>                                                                                                          | $\alpha_{\min}$       | —    | 3,7    | 5,0  | dB                 |
| <b>3dB bandwidth</b>                                                                                                                   |                       | 30   | 50     | —    | kHz                |
| <b>Amplitude variation (p-p)</b><br>$f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$                                                  | $\Delta\alpha$        | —    | 0,9    | 3,0  | dB                 |
| <b>Amplitude ripple (peak to adjacent valley)</b><br>$f_N - 15 \text{ kHz} \dots f_N + 15 \text{ kHz}$                                 | $\Delta\alpha$        | —    | 0,0    | 1,5  | dB                 |
| <b>Absolute group delay (at <math>f_N</math>)</b>                                                                                      | $\tau$                | —    | 16     | —    | $\mu\text{s}$      |
| <b>Group delay ripple (p-p)</b><br>$f_N - 11 \text{ kHz} \dots f_N + 11 \text{ kHz}$                                                   | $\Delta\tau$          | —    | 1,6    | 10   | $\mu\text{s}$      |
| <b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>                                                                   | $\alpha_{\text{rel}}$ |      |        |      |                    |
| $f_N - 1000 \text{ kHz} \dots f_N - 925 \text{ kHz}$                                                                                   |                       | 40   | 70     | —    | dB                 |
| $f_N - 925 \text{ kHz} \dots f_N - 885 \text{ kHz}$                                                                                    |                       | 70   | 75     | —    | dB                 |
| $f_N - 885 \text{ kHz} \dots f_N - 700 \text{ kHz}$                                                                                    |                       | 40   | 70     | —    | dB                 |
| $f_N - 700 \text{ kHz} \dots f_N - 400 \text{ kHz}$                                                                                    |                       | 30   | 65     | —    | dB                 |
| $f_N - 400 \text{ kHz} \dots f_N - 120 \text{ kHz}$                                                                                    |                       | 40   | 60     | —    | dB                 |
| $f_N - 120 \text{ kHz} \dots f_N - 60 \text{ kHz}$                                                                                     |                       | 20   | 34     | —    | dB                 |
| $f_N + 60 \text{ kHz} \dots f_N + 120 \text{ kHz}$                                                                                     |                       | 20   | 29     | —    | dB                 |
| $f_N + 120 \text{ kHz} \dots f_N + 150 \text{ kHz}$                                                                                    |                       | 40   | 57     | —    | dB                 |
| $f_N + 150 \text{ kHz} \dots f_N + 400 \text{ kHz}$                                                                                    |                       | 30   | 55     | —    | dB                 |
| $f_N + 400 \text{ kHz} \dots f_N + 1000 \text{ kHz}$                                                                                   |                       | 40   | 55     | —    | dB                 |
| <b>Intermodulation distortion</b><br>Intermodulation in the composit signal by $f_N \pm 60$ kHz and $f_N \pm 120$ kHz, each of -20 dBm |                       |      | —      | -90  | dB                 |
| <b>Temperature coefficient of frequency <sup>1)</sup></b>                                                                              | $TC_f$                | —    | -0,036 | —    | ppm/K <sup>2</sup> |
| <b>Turnover temperature</b>                                                                                                            | $T_0$                 | —    | 30     | —    | $^{\circ}\text{C}$ |

<sup>1)</sup> Temperature dependance of  $f_c$ :  $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$



SAW Components

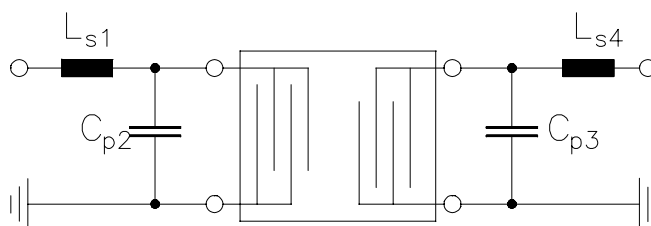
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Low-Loss Filter

82,20 MHz

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**Matching network** (element values depend on pcb layout)



$$L_{s1} = 470 \text{ nH}$$

$$C_{p2} = 3,9 \text{ pF}$$

$$C_{p3} = 3,9 \text{ pF}$$

$$L_{s4} = 470 \text{ nH}$$



SAW Components

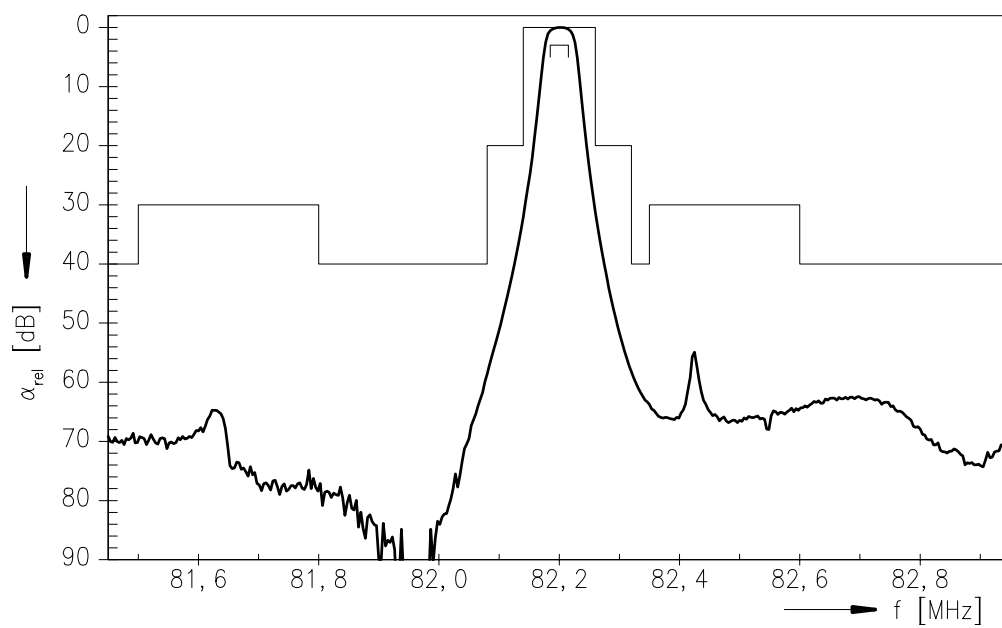
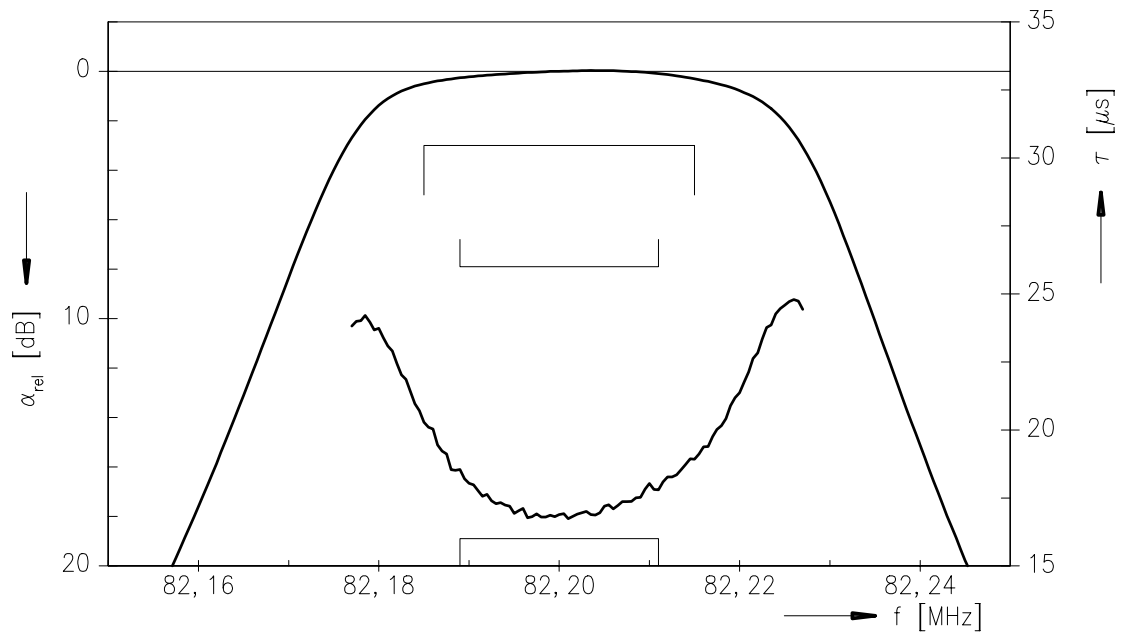
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Transfer function





|                        |                  |
|------------------------|------------------|
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