



SAW Components

Data Sheet B3804





SAW Components

B3804

Low-Loss Filter

170,2 MHz

Data Sheet

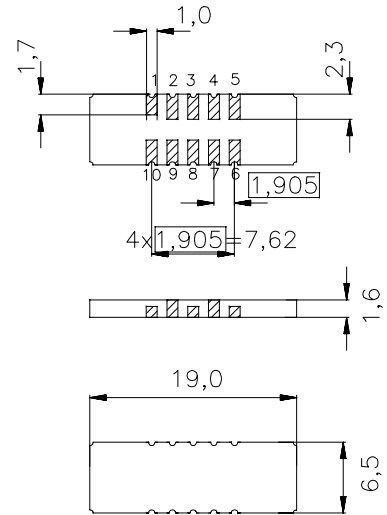
Features

- Low-loss IF filter for GSM base station
- Temperature stable
- Ceramic SMD package

Terminals

- Gold plated

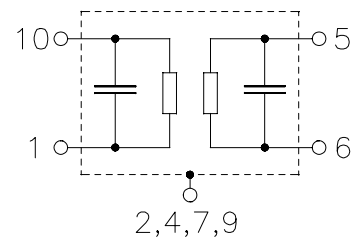
Ceramic package DCC18



Dimensions in mm, approx. weight 0,8 g

Pin configuration

- | | |
|------------|----------------------------------|
| 10 | Input or balanced input |
| 1 | Input ground or balanced input |
| 5 | Output or balanced output |
| 6 | Output ground or balanced output |
| 3, 8 | Ground |
| 2, 4, 7, 9 | Case ground |



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3804 | B39171-B3804-U210 | C61157-A7-A54 | F61074-V8081-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

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


SAW Components
B3804
Low-Loss Filter
170,2 MHz
Data Sheet
Characteristics

Operating temperature range:

$$T = -10 \dots 85 \text{ } ^\circ\text{C}$$

Terminating source impedance:

 $Z_S = 50 \text{ } \Omega$ unbalanced or $200 \text{ } \Omega$ balanced
and matching network

Terminating load impedance:

 $Z_L = 50 \text{ } \Omega$ unbalanced or $200 \text{ } \Omega$ balanced
and matching network

| | | min. | typ. | max. | |
|--|---|------|--------|------|--------------------|
| Nominal frequency | f_N | — | 170,2 | — | MHz |
| Minimum insertion attenuation | α_{\min} | — | 6,5 | 7,5 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| | $f_N \pm 135 \text{ kHz}$ | — | 0,35 | 0,7 | dB |
| Group delay ripple (p-p) | $\Delta\tau$ | | | | |
| | $f_N \pm 135 \text{ kHz}$ | — | 0,35 | 0,7 | μs |
| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | |
| | $f_N \pm 0,35 \text{ MHz} \dots f_N \pm 0,6 \text{ MHz}$ | 7 | 11 | — | dB |
| | $f_N \pm 0,6 \text{ MHz} \dots f_N \pm 0,8 \text{ MHz}$ | 24 | 30 | — | dB |
| | $f_N \pm 0,8 \text{ MHz} \dots f_N \pm 1,6 \text{ MHz}$ | 40 | 45 | — | dB |
| | $f_N \pm 1,6 \text{ MHz} \dots f_N \pm 20,0 \text{ MHz}$ | 43 | 50 | — | dB |
| | $f_N \pm 20,0 \text{ MHz} \dots f_N \pm 35,0 \text{ MHz}$ | 50 | 55 | — | dB |
| | $f_N \pm 35,0 \text{ MHz} \dots f_N \pm 75,0 \text{ MHz}$ | 45 | 60 | — | dB |
| | $f_N + 23,5 \text{ MHz} \dots f_N + 23,7 \text{ MHz}$ | 55 | 60 | — | dB |
| | $f_N + 75,0 \text{ MHz} \dots f_N + 2,0 \text{ GHz}$ | 40 | 60 | — | dB |
| VSWR (Input and output) | $f_N \pm 135 \text{ kHz}$ | — | 1,5 | 2,0 | |
| Temperature coefficient of frequency ¹⁾ | TC_f | — | -0,036 | — | ppm/K ² |
| Turnover temperature | T_0 | — | 45 | — | $^\circ\text{C}$ |

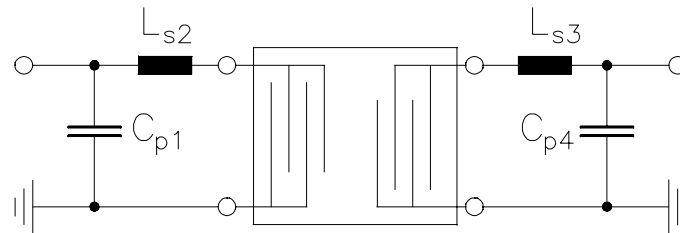
¹⁾ Temperature dependance of f_c : $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$



Data Sheet

Matching network to 50 Ω unbalanced

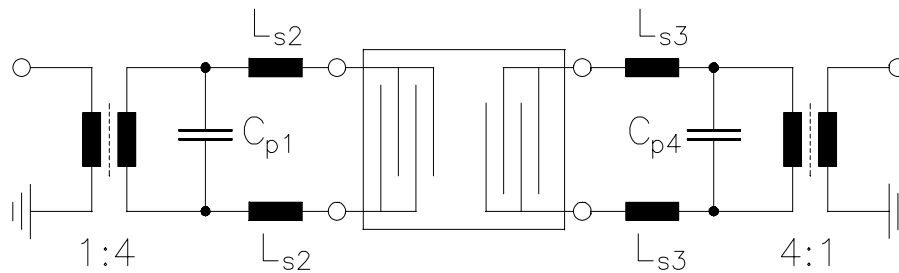
(Element values depend upon PCB layout)



- $C_{p1} = 36,3 \text{ pF}$
- $L_{s2} = 39,0 \text{ nH}$
- $L_{s3} = 39,0 \text{ nH}$
- $C_{p4} = 36,3 \text{ pF}$

Matching network to 200 Ω balanced

(Element values depend upon PCB layout)

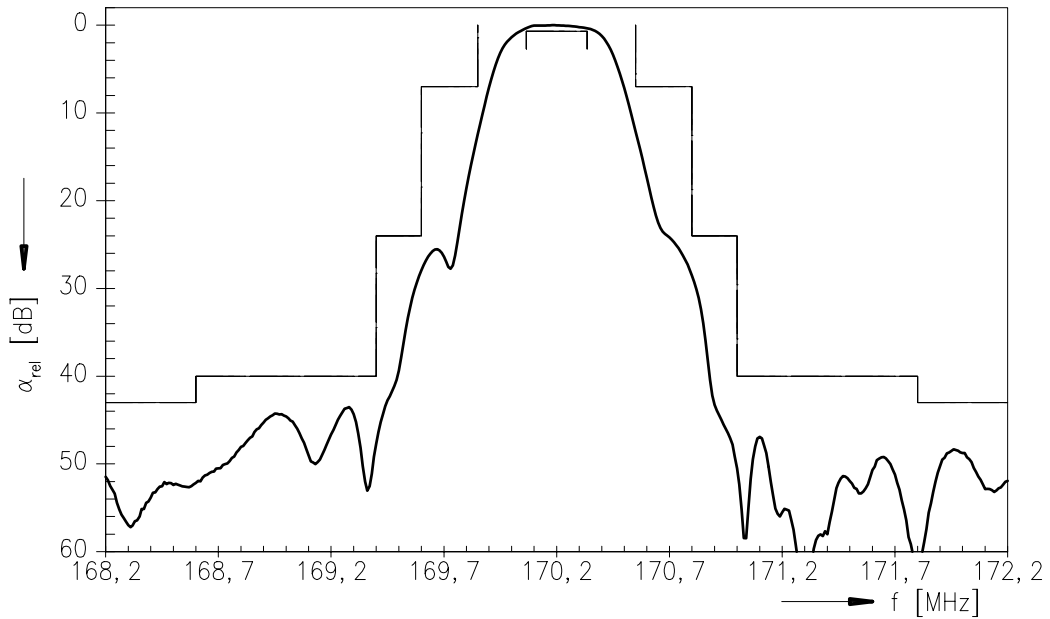


- $C_{p1} = 17,7 \text{ pF}$
- $L_{s2} = 27,0 \text{ nH}$
- $L_{s3} = 27,0 \text{ nH}$
- $C_{p4} = 17,7 \text{ pF}$

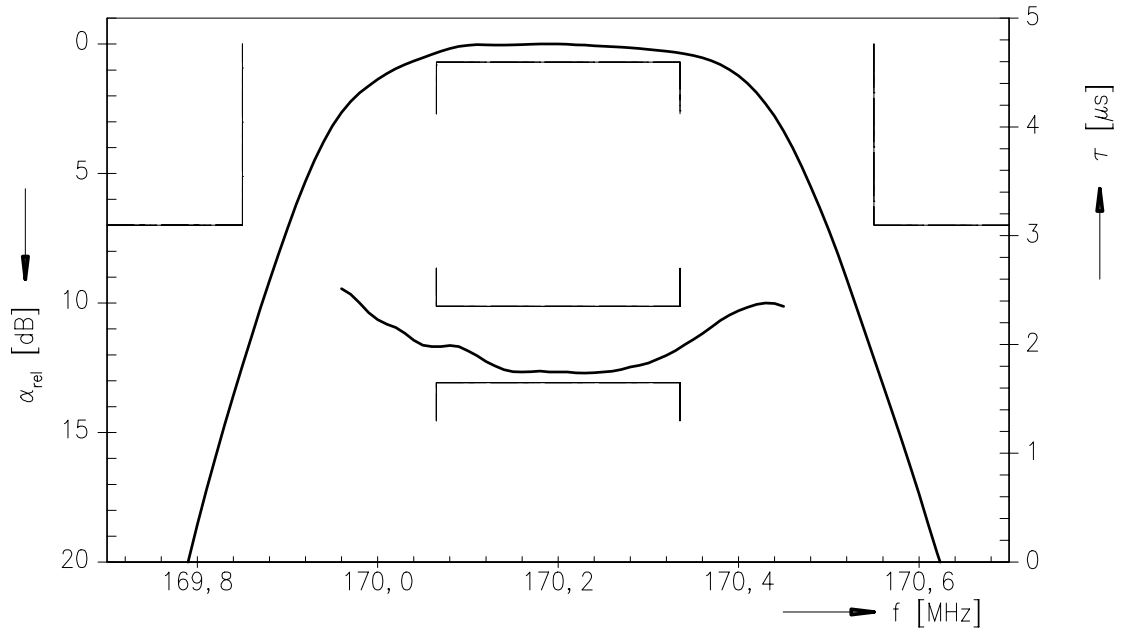


Data Sheet

Normalized frequency response



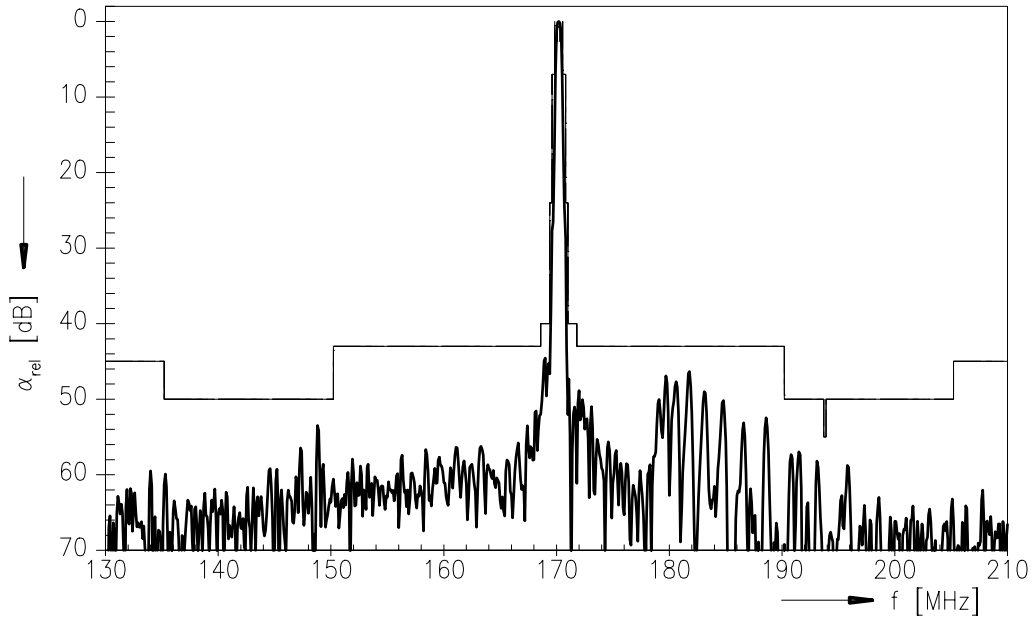
Normalized frequency response (passband)





Data Sheet

Transfer function





SAW Components

B3804

Low-Loss Filter

170,2 MHz

Data Sheet

**Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC IS
P.O. Box 80 17 09, D-81617 München**

© EPCOS AG 1999. All Rights Reserved.

As far as patents or other rights of third parties are concerned, liability is only assumed for components per se, not for applications, processes and circuits implemented within components or assemblies.

The information describes the type of component and shall not be considered as assured characteristics.

Terms of delivery and rights to change design reserved.

For questions on technology, prices and delivery please contact the sales offices of EPCOS AG or the international representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our sales offices.