



SAW Components

Data Sheet B3697

Data Sheet

EPCOS



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Low-Loss Filter

190,00 MHz

Data Sheet

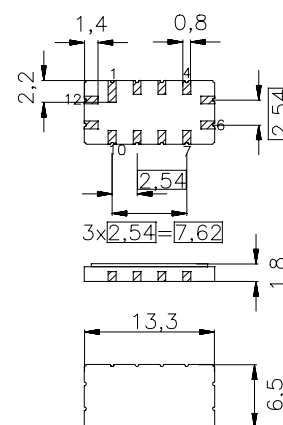
Ceramic package **QCC12**

Features

- IF filter for WCDMA
- Low insertion loss
- Ceramic SMD package

Terminals

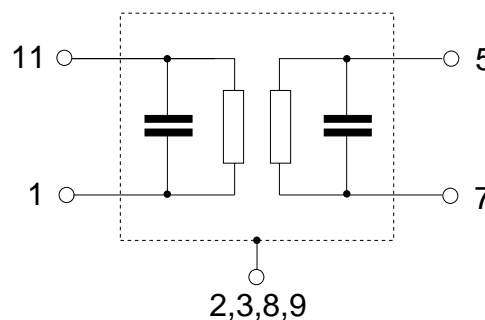
- Gold plated



Dimensions in mm, appr. weight 0,44 g

Pin configuration

| | |
|--------------|----------------|
| 11 | Input |
| 1 | Input ground |
| 5 | Output |
| 7 | Output ground |
| 2, 3, 8, 9 | Case ground |
| 4, 6, 10, 12 | To be grounded |



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3697 | B39191-B3697-Z510 | C61157-A7-A55 | F61074-V8026-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

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



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Characteristics

Operating temperature: $T_A = -10 \dots +85 \text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ and matching network
 Terminating load impedance: $Z_L = 50 \text{ } \Omega$ and matching network

Group delay aperture: 50 kHz

| | | min. | typ. | max. | |
|--|---|-------------------|--------|------|---------|
| Nominal frequency | f_N | — | 190,00 | — | MHz |
| Minimum insertion attenuation (including matching network) | α_{\min} $f_N \pm 2,05 \text{ MHz}$ | — | 10,7 | 12,0 | dB |
| Passband width | | | | | |
| | $\alpha_{\text{rel}} \leq 1 \text{ dB}$ | $B_{1\text{dB}}$ | 4,5 | 4,9 | — MHz |
| | $\alpha_{\text{rel}} \leq 3 \text{ dB}$ | $B_{3\text{dB}}$ | 5,6 | 5,8 | — MHz |
| | $\alpha_{\text{rel}} \leq 10 \text{ dB}$ | $B_{10\text{dB}}$ | — | 7,0 | 7,2 MHz |
| | $\alpha_{\text{rel}} \leq 30 \text{ dB}$ | $B_{30\text{dB}}$ | — | 8,4 | 8,6 MHz |
| Amplitude ripple (p-p) | $\Delta\alpha$ $f_N \pm 2,05 \text{ MHz}$ | — | 0,45 | 1,0 | dB |
| Phase ripple (p-p) | $\Delta\phi$ $f_N \pm 2,05 \text{ MHz}$ | — | 3,5 | 4 | ° |
| Group delay ripple (p-p) | $\Delta\tau$ $f_N \pm 2,05 \text{ MHz}$ | — | 70 | 100 | ns |
| Absolute group delay mean value within $f_N \pm 2,05 \text{ MHz}$ at $25 \text{ }^{\circ}\text{C}$ ¹⁾ | τ | 952 | 957 | 962 | ns |

1) At other temperatures the variation from filter to filter is also restricted to +/- 5 ns.
 From -10 ... +85 °C the variation of mean value of group delay is restricted to +/- 20 ns.



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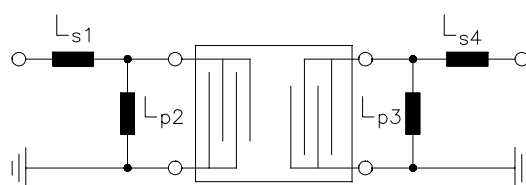
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| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | |
|---|-----------------------|----|------|----|-------|
| $f_N + 5,0 \text{ MHz} \dots f_N + 6,5 \text{ MHz}$ | 38 | 41 | — | dB | |
| $f_N - 5,0 \text{ MHz} \dots f_N - 6,5 \text{ MHz}$ | 40 | 43 | — | dB | |
| $f_N \pm 6,5 \text{ MHz} \dots f_N \pm 14,0 \text{ MHz}$ | 45 | 48 | — | dB | |
| $f_N \pm 14,0 \text{ MHz} \dots f_N \pm 60,0 \text{ MHz}$ | 50 | 55 | — | dB | |
| $f_N \pm 10,0 \text{ MHz}$ | 50 | 55 | — | dB | |
| $f_N + 20,0 \text{ MHz}$ | 55 | 60 | — | dB | |
| $f_N - 20,0 \text{ MHz}$ | 50 | 55 | — | dB | |
| 165,7 MHz | 55 | 58 | — | dB | |
| 157,6 MHz | 55 | 60 | — | dB | |
| Temperature coefficient of frequency | TC_f | — | - 18 | — | ppm/K |

Matching network to 50 Ω (element values depend on pcb layout)



$$L_{s1} = 47 \text{ nH}$$

$$L_{p3} = 27 \text{ nH}$$

$$L_{p2} = 39 \text{ nH}$$

$$L_{s4} = 0 \text{ nH}$$



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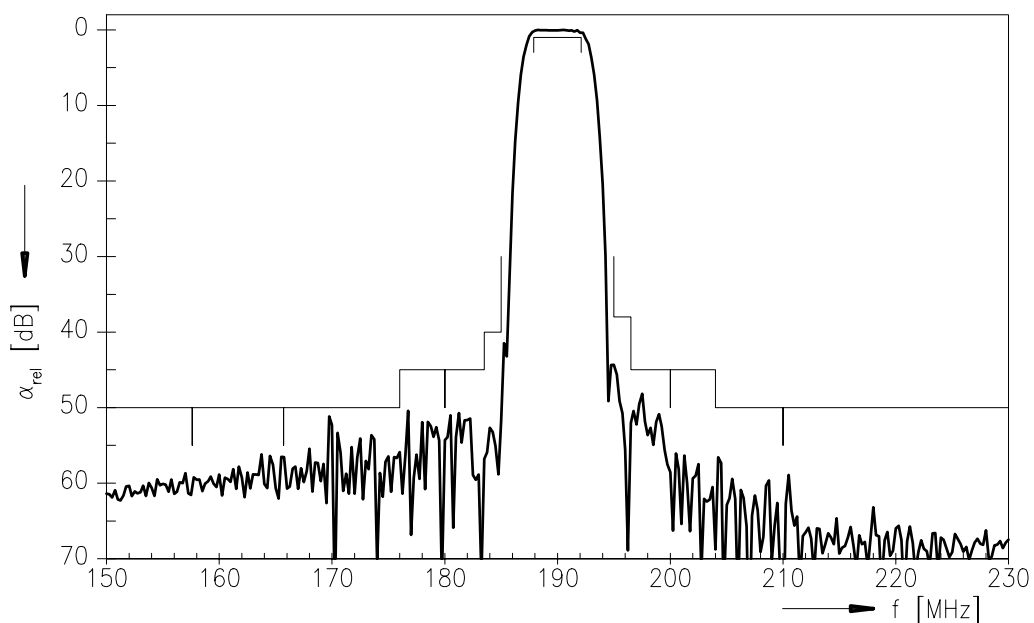
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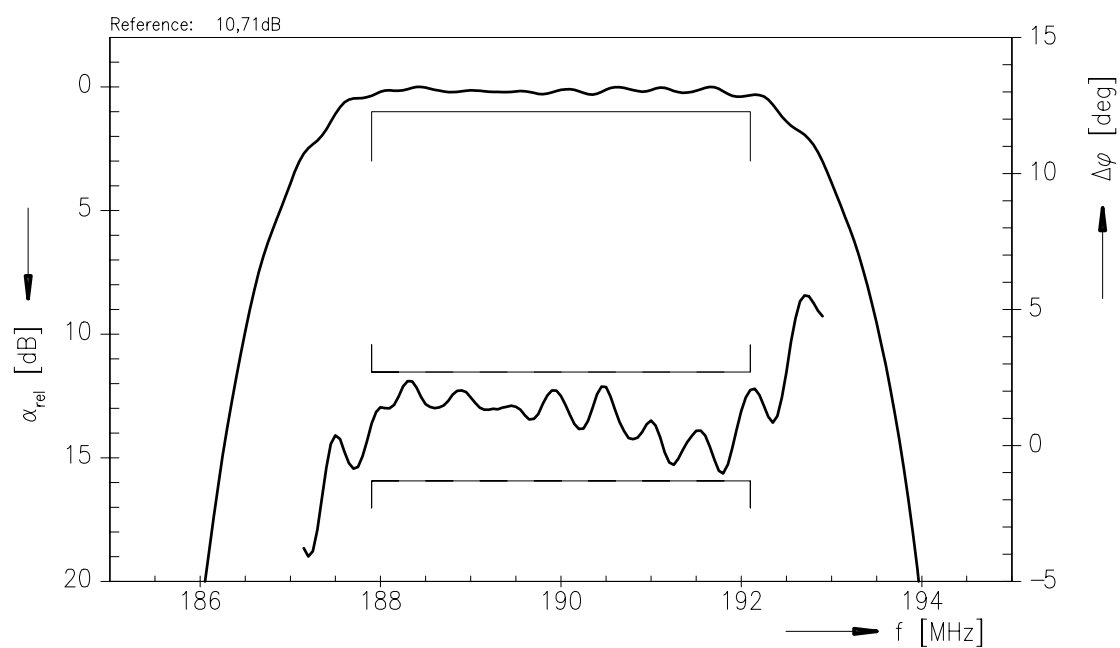
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Transfer function



Transfer function (pass band)





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