EPCOS

# *SAW Components*

*Data Sheet B3690*

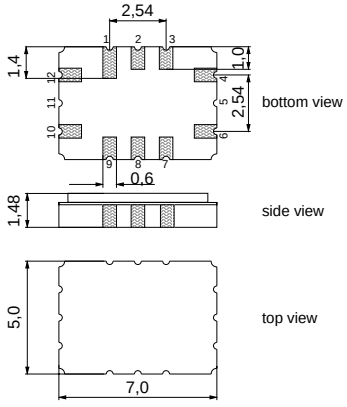
Ceramic package **QCC12C**

### Features

- Low-loss IF filter
- Temperature stable
- Ceramic SMD package
- Balanced and unbalanced operation possible

### Terminals

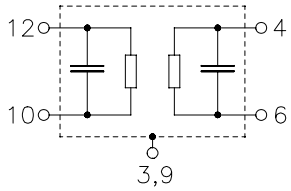
- Gold plated




Dimensions in mm, approx. weight 0,2 g

### Pin configuration

| | |
|---|---|
| 10 | Input |
| 12 | Input ground or balanced input |
| 4 | Output |
| 6 | Output ground or balanced output |
| 3, 9 | Case ground |
| 1, 2, 7, 8 | To be grounded |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B3690 | B39611-B3690-H310 | C61157-A7-A95 | F61074-V8170-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

### Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | –25 / +105 | ˚C | |
| Storage temperature range | $T_{stg}$ | –25 / +105 | ˚C | |
| DC voltage | $V_{DC}$ | 0 | V | |
| Source power | $P_s$ | 10 | dBm | |

Data Sheet

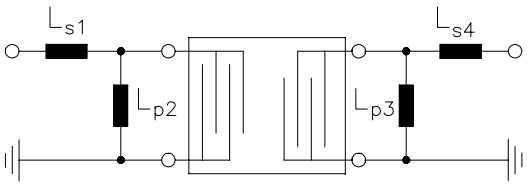
## Characteristics

Operating temperature range: $T$ = -25˚C to +85˚C
Terminating source impedance: $Z_S$ = 50 Ω and matching network
Terminating load impedance: $Z_L$ = 50 Ω and matching network

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | 609,25 | 610,00 | 610,75 | MHz |
| **Minimum insertion attenuation** (including loss in matching elements) | $\alpha_{min}$ | — | 9,5 | 11,0 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| $f_C$ - 750 kHz ... $f_C$ + 750 kHz | | — | 0,9 | 1,2 | dB |
| **Passband width** | | | | | |
| $\alpha_{rel} \leq 1{,}0$ dB | $B_{1,0dB}$ | — | 1,55 | — | MHz |
| $\alpha_{rel} \leq 3{,}0$ dB | $B_{3,0dB}$ | 2,6 | 2,7 | — | MHz |
| $\alpha_{rel} \leq 35{,}0$ dB | $B_{35dB}$ | — | 6,3 | 8,0 | MHz |
| **Relative attenuation** (relative to $\alpha_{min}$) | $\alpha_{rel}$ | | | | |
| 5,0 MHz ... 570,0 MHz | | 45 | 51 | — | dB |
| 570,0 MHz ... 606,0 MHz | | 35 | 44 | — | dB |
| 614,0 MHz ... 650,0 MHz | | 35 | 38 | — | dB |
| 650,0 MHz ... 862,0 MHz | | 45 | 52 | — | dB |
| **Impedance** at $f_C$ | | | | | |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ | | — | 300 ‖ 5,3 | — | Ω \|\| pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | — | 410 ‖ 4,6 | — | Ω \|\| pF |
| **Temperature coefficient of frequency** 1) | $TC_f$ | — | – 0,036 | — | ppm/K² |
| **Frequency inversion point** | $T_0$ | — | 25 | — | ˚C |

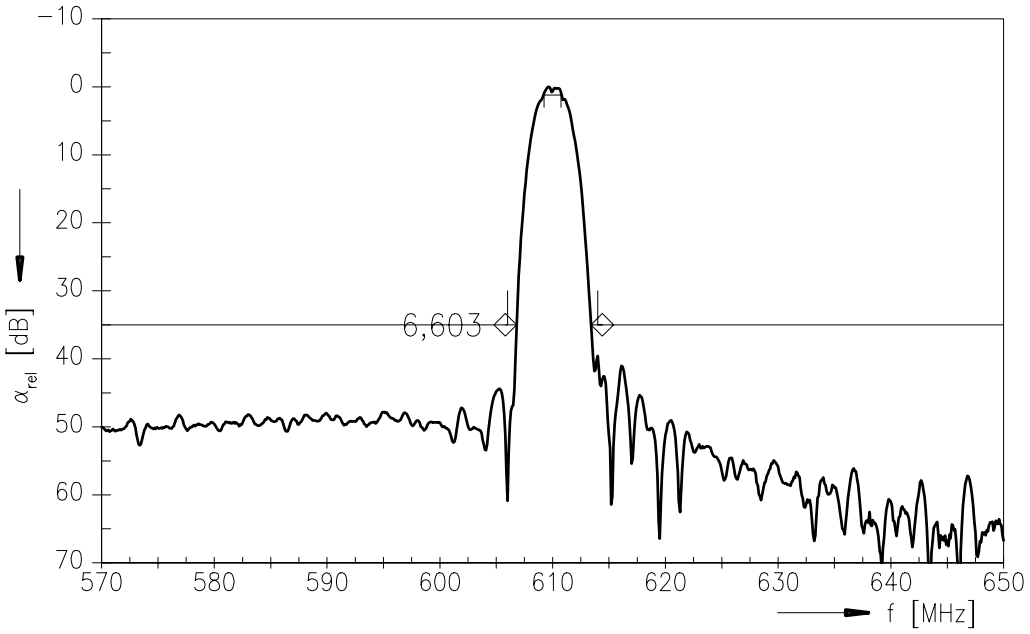
1) Temperature dependence of $f_c$: $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

**Matching network to 50** Ω (Element values depend on PCB layout):

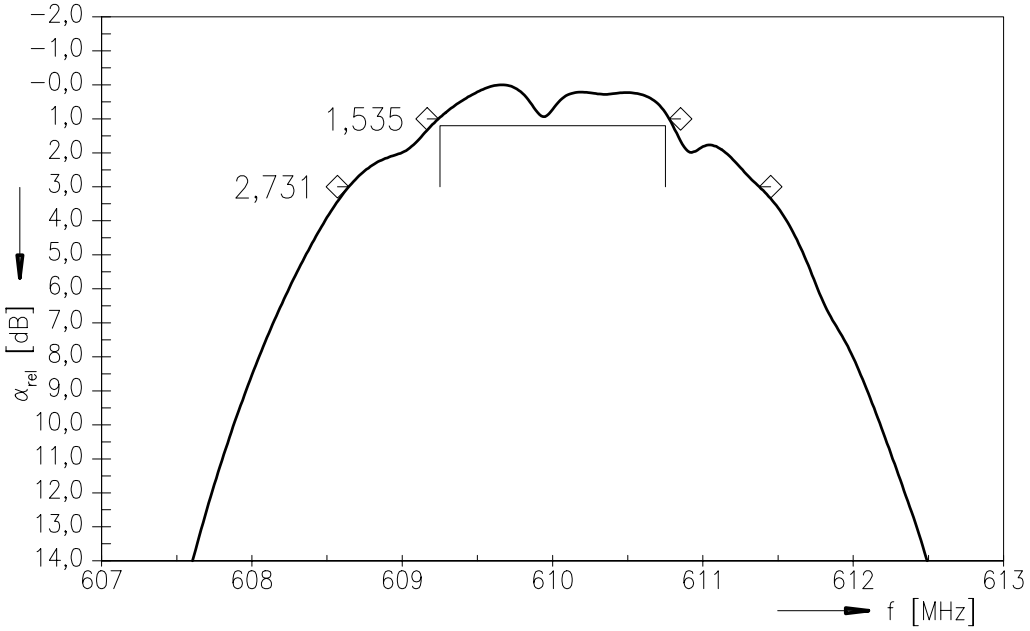



$L_{s1}$ = 30 nH
$L_{p2}$ = 16 nH
$L_{p3}$ = 16 nH
$L_{s4}$ = 34 nH

**Transfer function:**




**Transfer function** (pass band):



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