EPCOS

# *SAW Components*

*Data Sheet B3685*

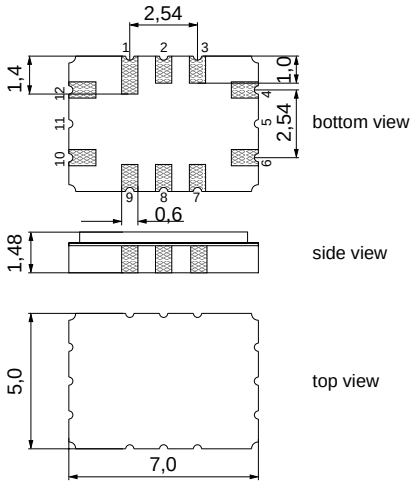
Ceramic package **QCC12C**

### Features

- Low-loss IF filter for GSM base station
- Tx path
- Ceramic SMD package

### Terminals

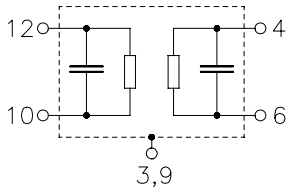
- Gold plated




Dimensions in mm, appr. weight 0,20 g

### Pin configuration

| | |
|---|---|
| 12, 10 | Balanced Input |
| 4, 6 | Balanced Output |
| 1, 2, 7, 8 | Ground |
| 3, 9 | Case ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B3685 | B39900-B3685-H310 | C61157-A7-A95 | F61074-V8170-Z000 |

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

### Maximum ratings

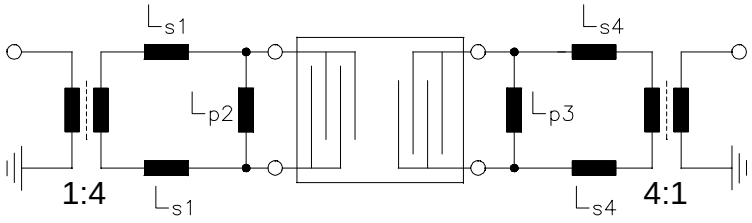
| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | -20 / +70 | ˚C | |
| Storage temperature range | $T_{stg}$ | -30 / +85 | ˚C | |
| DC voltage | $V_{DC}$ | 0 | V | |
| Source power | $P_s$ | 10 | dBm | |

## Characteristics

Operating temperature range: $T$ = 0 - 70 °C
Terminating source impedance: $Z_S$ = 200 Ω balanced and matching network
Terminating load impedance: $Z_L$ = 200 Ω balanced and matching network

| | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Nominal frequency** | | $f_N$ | — | 90,0 | — | MHz |
| **Insertion attenuation at $f_N$** (including matching network) | | $\alpha_N$ | 4,0 | 5,3 | 6,0 | dB |
| **Passband width** | $\alpha_{rel} \leq 0{,}5$ dB | $B_{0,5dB}$ | 200 | 850 | — | kHz |
| **Amplitude ripple** (p-p) | $f_N \pm 100$ kHz | $\Delta\alpha$ | — | 0,15 | 0,5 | dB |
| **Absolute group delay** (at $f_N$) | | $\tau$ | 720 | 760 | 800 | ns |
| **Group delay ripple** (p-p) | $f_N \pm 100$ kHz | $\Delta\tau$ | — | 30 | 100 | ns |
| **Average Error Vector Magnitude** (rms) | | EVM | — | 0,4 | 1,0 | % |
| **Relative attenuation** (relative to $\alpha_N$) | | $\alpha_{rel}$ | | | | |
| $f_N \pm 1{,}8$ MHz ... $f_N \pm 6{,}0$ MHz | | | 10 | 18 | — | dB |
| $f_N \pm 6{,}0$ MHz ... $f_N \pm 20{,}0$ MHz | | | 30 | 44 | — | dB |
| **Input and Output VSWR** | $f_N \pm 100$ kHz | | — | 1,3:1 | 2,0:1 | |
| **Impedance** at $f_N$ (without matching) | | | | | | |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ | | | — | 335 \|\| 23,8 | — | Ω \|\| pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | | — | 335 \|\| 23,8 | — | Ω \|\| pF |
| **Temperature coefficient of frequency** | | $TC_f$ | — | – 18 | — | ppm/K |

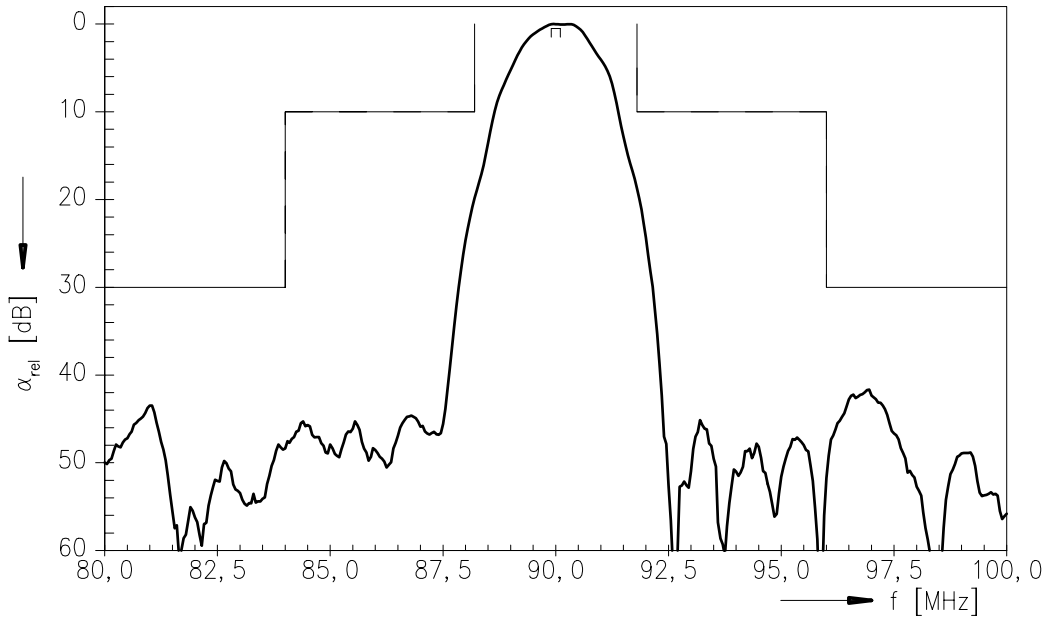
**Matching network to 200 Ω** (element values depend on pcb layout)



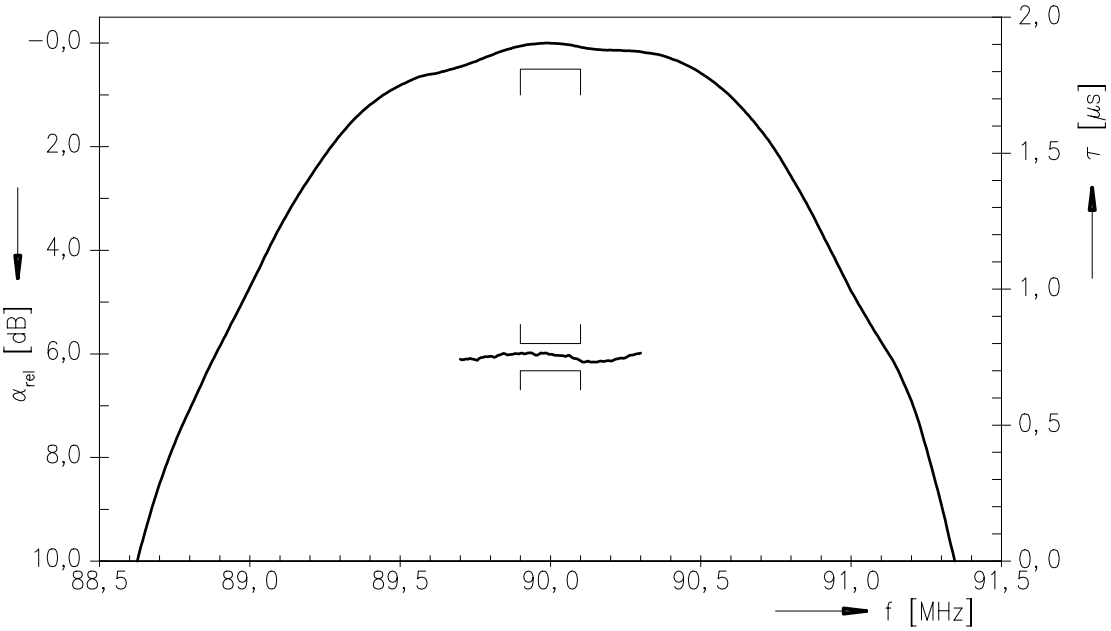

$L_{s1}$ = 180 nH $L_{p3}$ = 180 nH

$L_{p2}$ = 180 nH $L_{s4}$ = 180 nH

**Transfer function**




**Transfer function** (pass band)



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



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