



# SAW Components

Data Sheet B3826





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Low-Loss Filter

570,00 MHz

Data Sheet

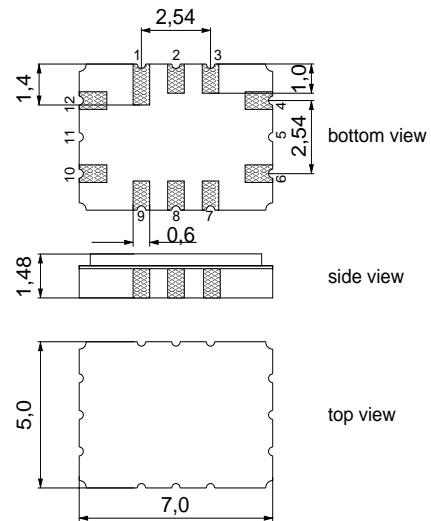
Ceramic package QCC12C

Features

- IF low-loss filter for base stations
- Channel selection in W-CDMA systems
- Balanced and unbalanced operation possible
- 3,84 MHz usable bandwidth
- Ceramic SMD package

Terminals

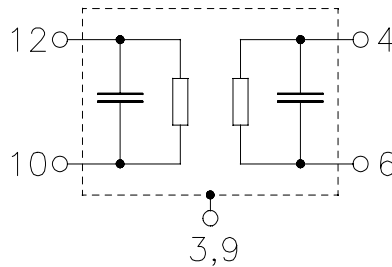
- Gold plated



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 |
| 1, 2, 7, 8 | to be grounded                   |
| 3, 9       | Case ground                      |



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3826 | B39571-B3826-H310 | C61157-A7-A95                    | F61074-V8170-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 |


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**Characteristics (unbalanced operation)**

Operating temperature range:  $T = -10 \dots 85 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 440 \ \Omega \parallel 11 \text{ nH}$   
 Terminating load impedance:  $Z_L = 237 \ \Omega \parallel 9 \text{ nH}$

|                                                                                            |                       | <b>min.</b> | <b>typ.</b> | <b>max.</b> |     |
|--------------------------------------------------------------------------------------------|-----------------------|-------------|-------------|-------------|-----|
| <b>Nominal frequency</b>                                                                   | $f_N$                 | —           | 570,0       | —           | MHz |
| <b>Minimum insertion attenuation</b><br>(including matching network <sup>1)</sup> )        | $\alpha_{\min}$       | 10,0        | 11,8        | 12,5        | dB  |
| <b>Pass bandwidth</b>                                                                      | $B_{3,0\text{dB}}$    |             |             |             |     |
| $\alpha_{\text{rel}} \leq 3,0 \text{ dB}$                                                  |                       | 4,6         | 4,8         | 5,0         | MHz |
| <b>Amplitude ripple (p-p)</b>                                                              | $\Delta\alpha$        |             |             |             |     |
| $f_N \pm 1,92 \text{ MHz}$                                                                 |                       | 0,1         | 0,8         | 1,5         | dB  |
| <b>Absolute Group delay</b>                                                                | $\tau$                |             |             |             |     |
| @ $f_N$                                                                                    |                       | 550         | 620         | 690         | ns  |
| <b>Group delay ripple (p-p)</b>                                                            | $\Delta\tau$          |             |             |             |     |
| $f_N \pm 1,92 \text{ MHz}$                                                                 |                       | 50          | 150         | 300         | ns  |
| <b>Adjacent channel selectivity</b>                                                        | ACS                   | 21          | 29          | 39          | dB  |
| <b>Minimum relative attenuation</b> (relative to $\alpha_{\min}$ )                         | $\alpha_{\text{rel}}$ |             |             |             |     |
| $f_N \pm 3,5 \text{ MHz} \dots f_N \pm 5,0 \text{ MHz}$                                    |                       | 20          | 25          | 40          | dB  |
| $f_N - 5,0 \text{ MHz} \dots f_N - 8,0 \text{ MHz}$                                        |                       | 45          | 47          | 55          | dB  |
| $f_N - 8,0 \text{ MHz} \dots f_N - 20,0 \text{ MHz}$                                       |                       | 48          | 50          | 55          | dB  |
| $f_N + 5,0 \text{ MHz} \dots f_N + 7,0 \text{ MHz}$                                        |                       | 45          | 50          | 55          | dB  |
| $f_N + 7,0 \text{ MHz} \dots f_N + 9,0 \text{ MHz}$                                        |                       | 44          | 45          | 55          | dB  |
| $f_N + 9,0 \text{ MHz} \dots f_N + 10,0 \text{ MHz}$                                       |                       | 46          | 47          | 55          | dB  |
| $f_N + 10,0 \text{ MHz} \dots f_N + 20,0 \text{ MHz}$                                      |                       | 48          | 50          | 55          | dB  |
| <b>Intermodulation</b>                                                                     | IM3                   |             |             |             |     |
| $f_1 = 569 \text{ MHz}$ , input power +1dBm<br>$f_2 = 571 \text{ MHz}$ , input power +1dBm |                       |             |             |             |     |
| @ $f_N + 3 \text{ MHz}$                                                                    |                       | -130        | -105        | -95         | dBm |
| @ $f_N - 3 \text{ MHz}$                                                                    |                       | -130        | -104        | -94         | dBm |



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|                                                          |                                       | <b>min.</b> | <b>typ.</b> | <b>max.</b> |                              |
|----------------------------------------------------------|---------------------------------------|-------------|-------------|-------------|------------------------------|
| <b>Impedance</b> at $f_N$ (without matching)             |                                       |             |             |             |                              |
| Input:                                                   | $Z_{IN} = R_{IN} \parallel C_{IN}$    | —           | 244    8    | —           | $\Omega \parallel \text{pF}$ |
| Output:                                                  | $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | —           | 119    12   | —           | $\Omega \parallel \text{pF}$ |
| <b>Temperature coefficient of frequency<sup>2)</sup></b> | $TC_f$                                | —           | - 0,036     | —           | ppm/K <sup>2</sup>           |
| <b>Turnover temperature</b>                              | $T_0$                                 | —           | 30          | —           | °C                           |

1) Matching inductor Q=40

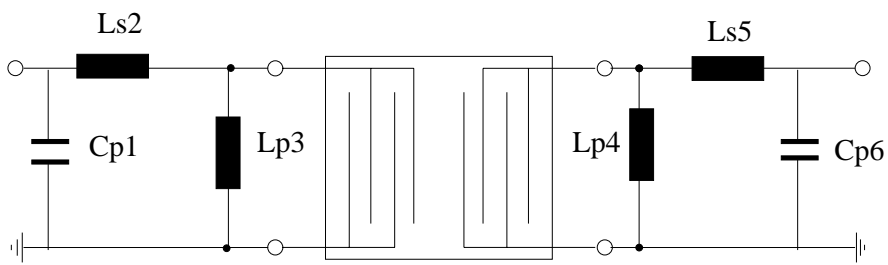
2) Temperature dependance of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$



Data Sheet

Matching network

(Element values depend upon PCB layout)



$C_{p1} = 3,3 \text{ pF}$

$L_{s2} = 33 \text{ nH}$

$L_{p3} = 18 \text{ nH}$

$L_{p4} = 12 \text{ nH}$

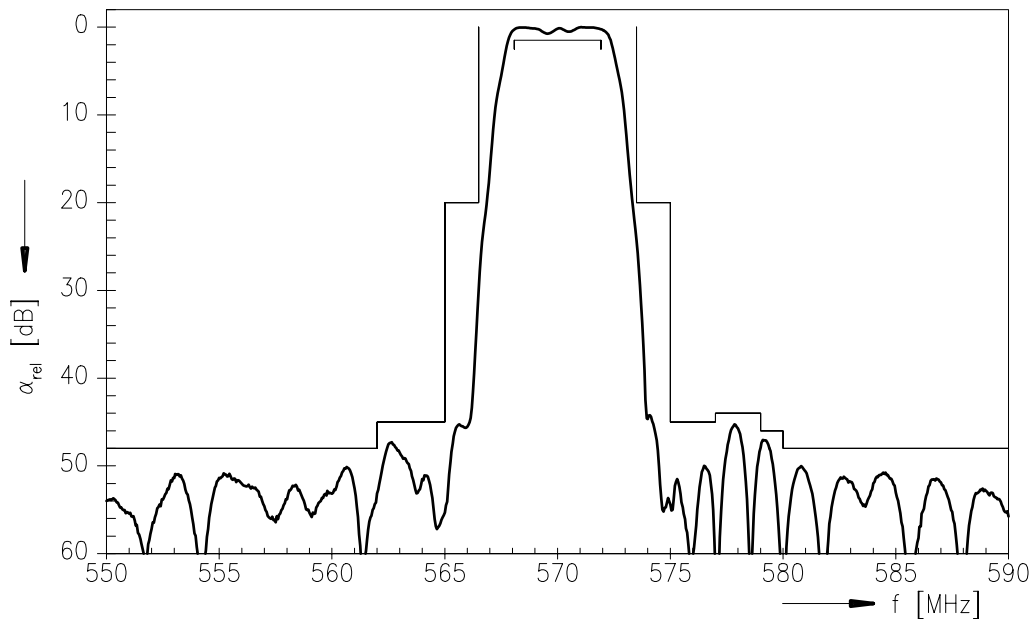
$L_{s5} = 22 \text{ nH}$

$C_{p6} = 2,7 \text{ pF}$

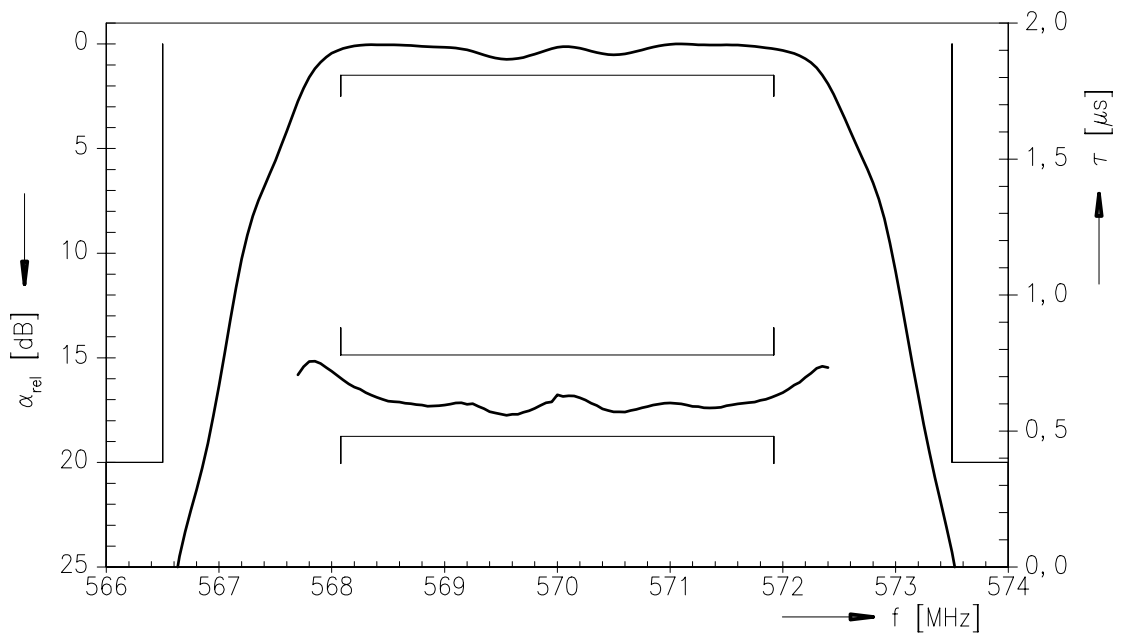


Data Sheet

Normalized frequency response



Normalized frequency response (pass band)





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