



# SAW Components

Data Sheet B1706





SAW Components

B1706

Bandpass Filter

259,86 MHz

Preliminary Data



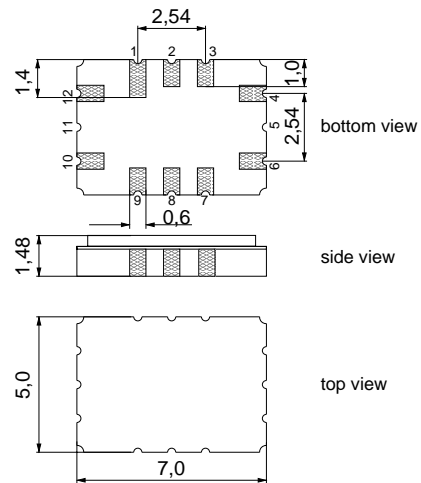
SMD ceramic package QCC12C

**Features**

- IF filter for digital satellite radio
- Constant group delay
- Ceramic package for Surface Mounted Technology (SMT)

**Terminals**

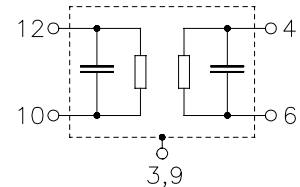
- Ni, gold-plated



Dimensions in mm, approx. weight 0,2 g

**Pin configuration**

- 10 Input
- 12 Input
- 4 Output
- 6 Output
- 3,9 Case – ground
- 1,7 To be grounded
- 2,8 Ground



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B1706 | B39261-B1706-H310 | C61157-A7-A95                    | F61074-V8170-Z000    |

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

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



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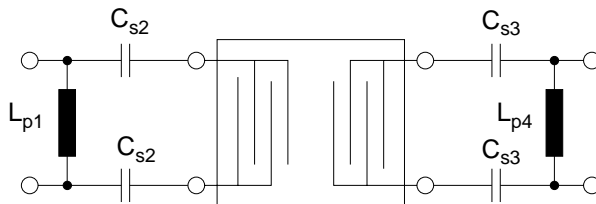


**Characteristics**

Operating temperature range:  $T = -40\text{ °C} \dots 85\text{ °C}$   
 Terminating source impedance:  $Z_S = 150\ \Omega$  and matching network  
 Terminating load impedance:  $Z_L = 150\ \Omega$  and matching network

|   |  | min.               | typ.   | max. |          |
|---|--|--------------------|--------|------|----------|
| <b>Nominal frequency</b>                                    | $f_N$                                      | —                  | 259,86 | —    | MHz      |
| <b>Minimum insertion attenuation</b>                        | $\alpha_{\min}$                            | —                  | 14,5   | 15,5 | dB       |
| <b>Amplitude ripple (p-p)</b>                               | $\Delta\alpha$                             |                    |        |      |          |
|   | 253,61 ...266,11 MHz                       | —                  | 0,8    | 1,4  | dB       |
|   | 253,61 ...255,47 MHz                       | —                  | 0,3    | 0,8  | dB       |
|   | 255,47 ...257,33 MHz                       | —                  | 0,3    | 0,8  | dB       |
|   | 257,33 ...259,84 MHz                       | —                  | 0,3    | 0,8  | dB       |
|   | 259,89 ...262,40 MHz                       | —                  | 0,3    | 0,8  | dB       |
|   | 262,40 ...264,25 MHz                       | —                  | 0,3    | 0,8  | dB       |
|   | 264,25 ...266,11 MHz                       | —                  | 0,7    | 1,0  | dB       |
| <b>Pass bandwidth</b>                                       |  |                    |        |      |          |
|   | $\alpha_{\text{rel}} \leq 1,5\text{ dB}$   | $B_{1,5\text{dB}}$ | 12,5   | 14,1 | 15,0 MHz |
|   | $\alpha_{\text{rel}} \leq 3\text{ dB}$     | $B_{3\text{dB}}$   | 14,4   | 14,9 | 15,4 MHz |
|   | $\alpha_{\text{rel}} \leq 15\text{ dB}$    | $B_{15\text{dB}}$  | —      | 17,4 | 17,4 MHz |
| <b>Attenuation (relative to <math>\alpha_{\min}</math>)</b> |  |                    |        |      |          |
|   | $\alpha_{\text{rel}}$                      |                    |        |      |          |
| <b>Lower sidelobe</b>                                       | 230,00 ... $f_N - 12,00\text{ MHz}$        | 34,0               | 36,0   | —    | dB       |
|   | $f_N - 12,00 \dots f_N - 10,50\text{ MHz}$ | 32,0               | 36,0   | —    | dB       |
| <b>Upper sidelobe</b>                                       | $f_N + 9,00 \dots f_N + 10,30\text{ MHz}$  | 13,0               | 16,0   | —    | dB       |
|   | $f_N + 10,30 \dots f_N + 12,00\text{ MHz}$ | 34,0               | 36,0   | —    | dB       |
|   | $f_N + 12,00 \dots 290,00\text{ MHz}$      | 35,0               | 37,0   | —    | dB       |
| <b>Group delay ripple (p-p)</b>                             | $\Delta\tau$                               |                    |        |      |          |
|   | $f_N \pm 6,24\text{ MHz}$                  | —                  | 50     | 70   | ns       |
| <b>Temperature coefficient of frequency</b>                 | $TC_f$                                     | —                  | -18    | —    | ppm/K    |

**Matching network (based on four port measurement, quality factors  $Q_L = 40$ ,  $Q_C = 90$ )**



$L_{p1} = 22\text{ nH}$   
 $C_{s2} = 120\text{ pF}$   
 $C_{s3} = 68\text{ pF}$   
 $L_{p4} = 22\text{ nH}$



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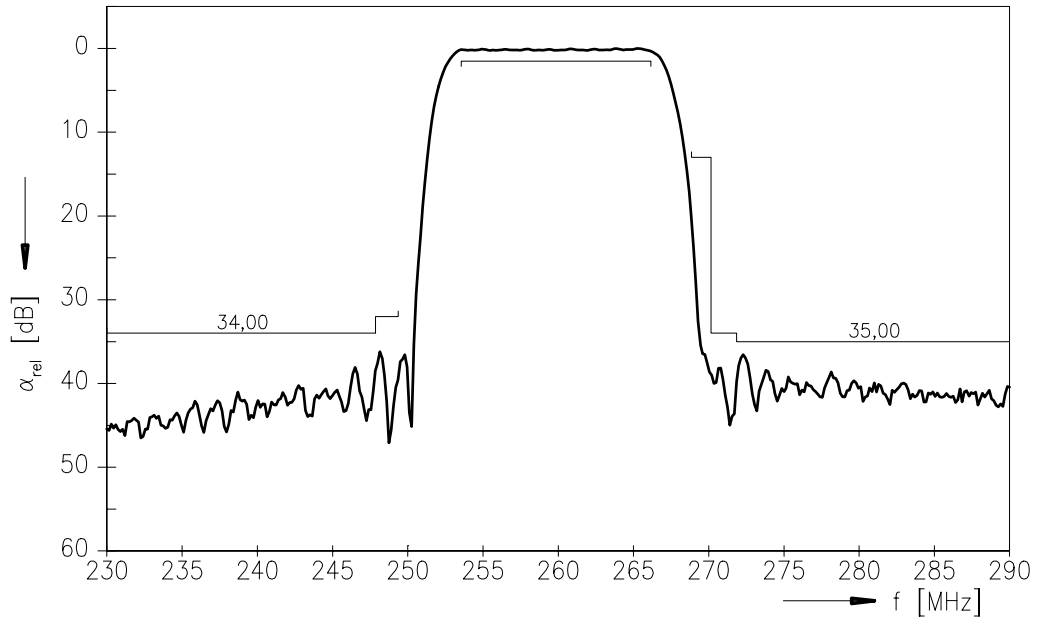
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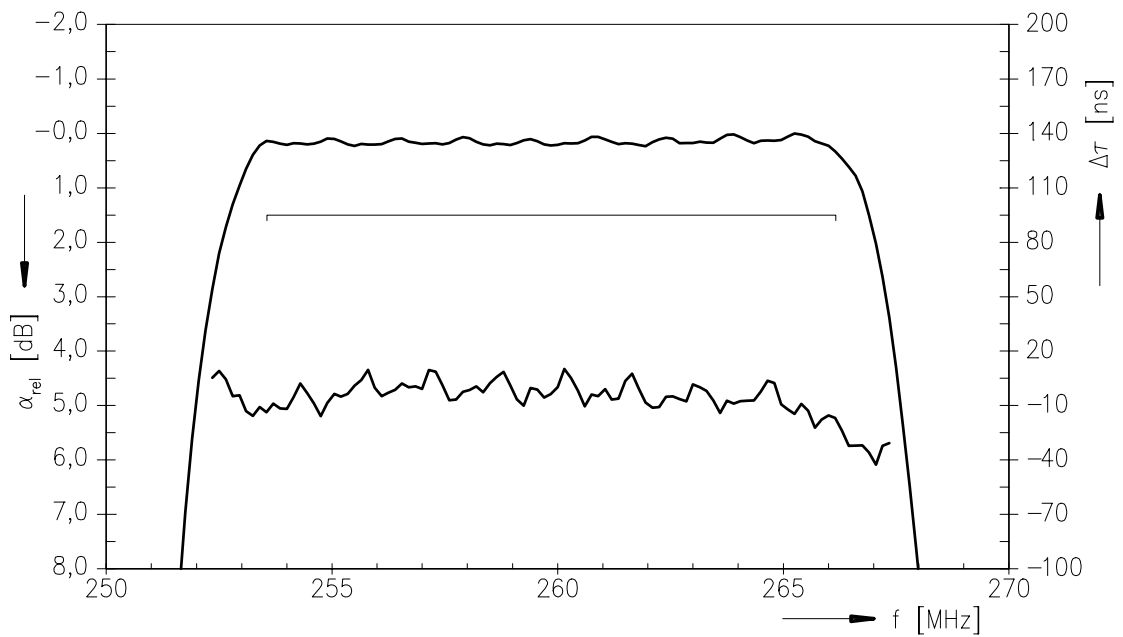
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Transfer function



Transfer function (passband)





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