



SAW Components

Data Sheet B3802





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B3802

Low-Loss Filter

110,0 MHz

Data Sheet

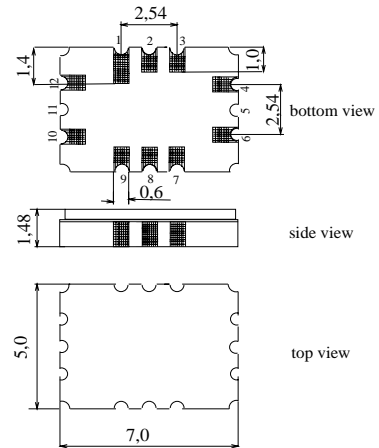
Ceramic package QCC12C

Features

- Low-loss IF filter
- Balanced or unbalanced operation
- Ceramic package for **Surface Mounted Technology (SMT)**

Terminals

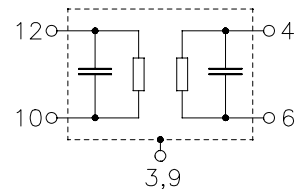
- Ni, Gold-plated



Dimensions in mm, approx. weight 0,25

Pin configuration

- | | |
|------------|---------------------------------|
| 12 | Input |
| 10 | Balance input or input ground |
| 4 | Output |
| 6 | Balance output or output ground |
| 1, 2, 7, 8 | Ground |
| 3, 9 | Case ground |



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B3802 | B39111-B3802-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

Operating temperature: $T = 25\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ and matching network
 Terminating load impedance: $Z_L = 50\ \Omega$ and matching network

| | | min. | typ. | max. | |
|------------------------------------------------------------|------------------------------------------|------------------|-------------|-------------|-------|
| Center frequency | f_C | 109,9 | 110,0 | 110,1 | MHz |
| Minimum insertion attenuation | α_{\min} | — | 6,8 | 10,0 | dB |
| Pass bandwidth | $\alpha_{\text{rel}} \leq 3,0\text{ dB}$ | $B_{3\text{dB}}$ | 3,75 | 4,0 | — |
| | $\alpha_{\text{rel}} \leq 1,0\text{ dB}$ | $B_{1\text{dB}}$ | — | 3,1 | — |
| Amplitude ripple (max peak to adjacent valley) | $\Delta\alpha$ | | | | |
| | $f_C \pm 1,6\text{ MHz}$ | — | 0,5 | — | dB |
| Group delay ripple | $\Delta\tau$ | | | | |
| | $f_C \pm 1,6\text{ MHz}$ | — | 45 | 80 | ns |
| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | |
| | 60,0 MHz ... 100,0 MHz | 40 | 42 | — | dB |
| | 100,0 MHz ... 105,5 MHz | 36 | 41 | — | dB |
| | 114,5 MHz ... 120,0 MHz | 36 | 41 | — | dB |
| 120,0 MHz ... 160,0 MHz | 38 | 43 | — | dB | |
| Temperature coefficient of frequency | TC_f | — | -18 | — | ppm/K |



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Characteristics

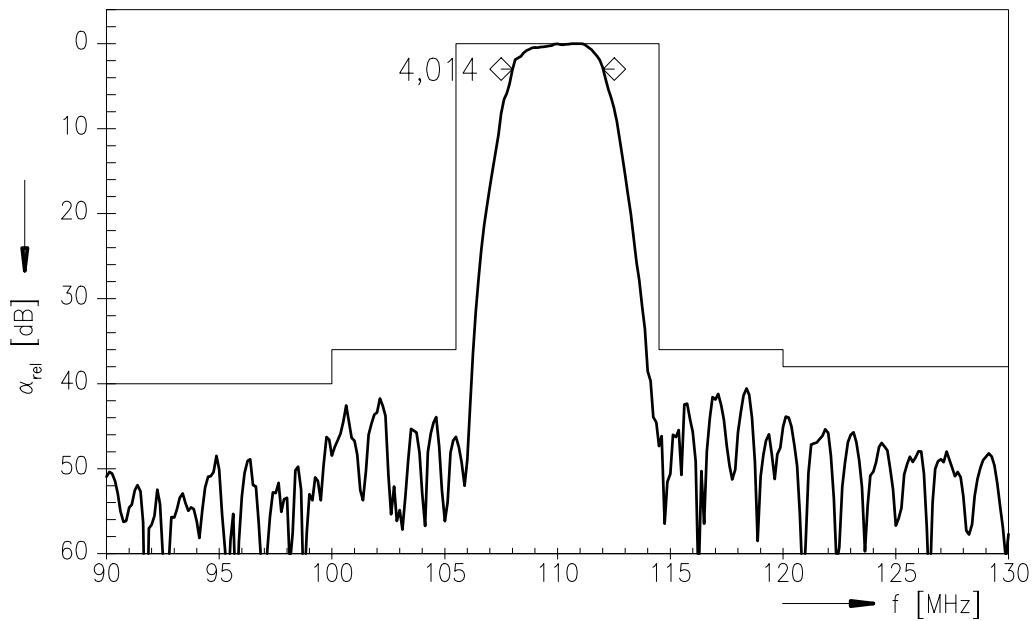
Operating temperature: $T = -10 \dots 70 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ and matching network
 Terminating load impedance: $Z_L = 50 \text{ } \Omega$ and matching network

| | | min. | typ. | max. | | |
|------------------------------------------------------------|-------------------------------------------|------------------|-------------|-------------|-------|-----|
| Center frequency | f_C | 109,8 | 110,0 | 110,18 | MHz | |
| Minimum insertion attenuation | α_{\min} | — | 6,8 | 10,0 | dB | |
| Pass bandwidth | $\alpha_{\text{rel}} \leq 3,0 \text{ dB}$ | $B_{3\text{dB}}$ | 3,75 | 4,0 | — | MHz |
| | $\alpha_{\text{rel}} \leq 1,0 \text{ dB}$ | $B_{1\text{dB}}$ | — | 3,1 | — | MHz |
| Amplitude ripple (max peak to adjacent valley) | $\Delta\alpha$ | | | | | |
| | $f_C \pm 1,6 \text{ MHz}$ | — | 0,5 | — | dB | |
| Group delay ripple | $\Delta\tau$ | | | | | |
| | $f_C \pm 1,6 \text{ MHz}$ | — | 45 | 80 | ns | |
| Relative attenuation (relative to α_{\min}) | α_{rel} | | | | | |
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| Temperature coefficient of frequency | TC_f | — | -18 | — | ppm/K | |

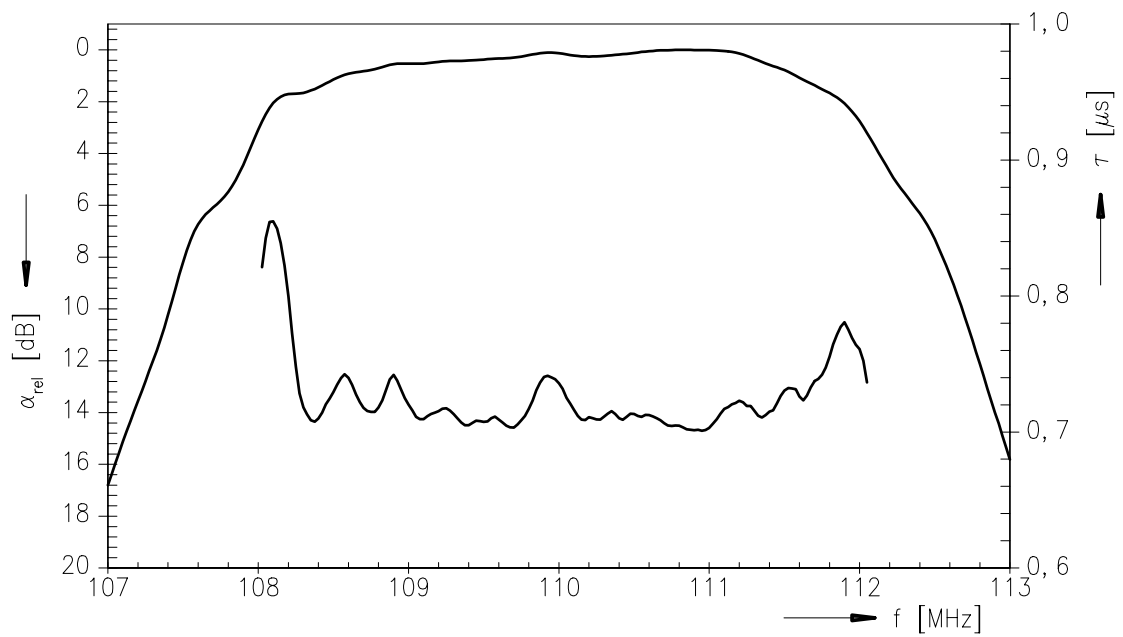


Data Sheet

Normalized frequency response



Normalized frequency response (pass band)

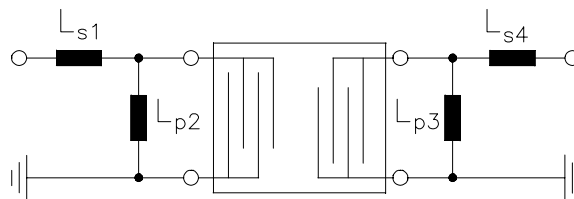




Data Sheet

Matching network (element values may depend on pcb layout)

50 Ω unbalanced:



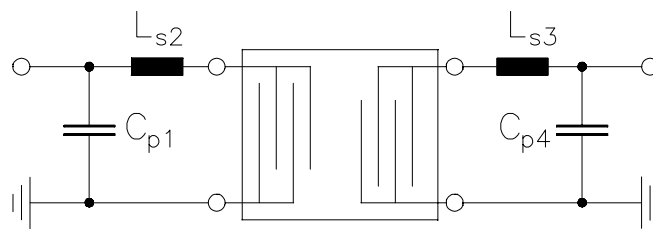
$$L_{s1} = 82 \text{ nH}$$

$$L_{p2} = 47 \text{ nH}$$

$$L_{p3} = 33 \text{ nH}$$

$$L_{s4} = 12 \text{ nH}$$

50 Ω unbalanced : (higher IL, but more attenuation in the upper stopband)



$$C_{p1} = 100 \text{ nF}$$

$$L_{s2} = 56 \text{ nH}$$

$$L_{s3} = 56 \text{ nH}$$

$$C_{p4} = 68 \text{ nF}$$



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