



SAW Components

Data Sheet B3802





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B3802

Low-Loss Filter

110,0 MHz

Data Sheet

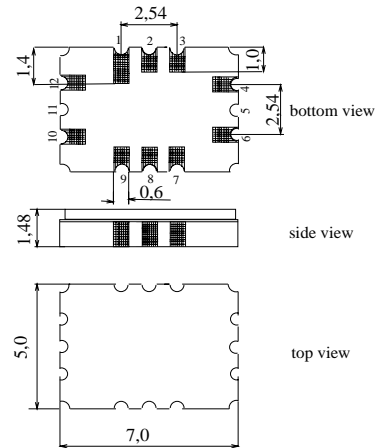
Ceramic package QCC12C

Features

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

Terminals

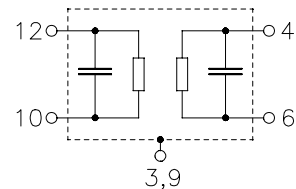
- Ni, Gold-plated



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: $T = 25\text{ °C}$
 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	—	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}					
	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

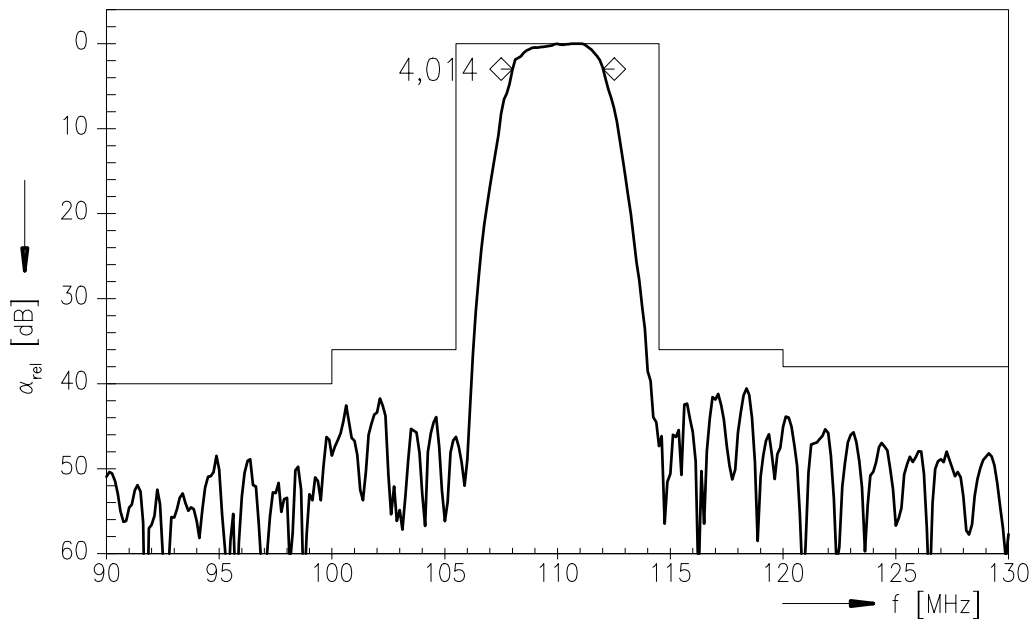
Operating temperature: $T = -10 \dots 70 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$ and matching network
 Terminating load impedance: $Z_L = 50 \text{ } \Omega$ and matching network

		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	
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	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	

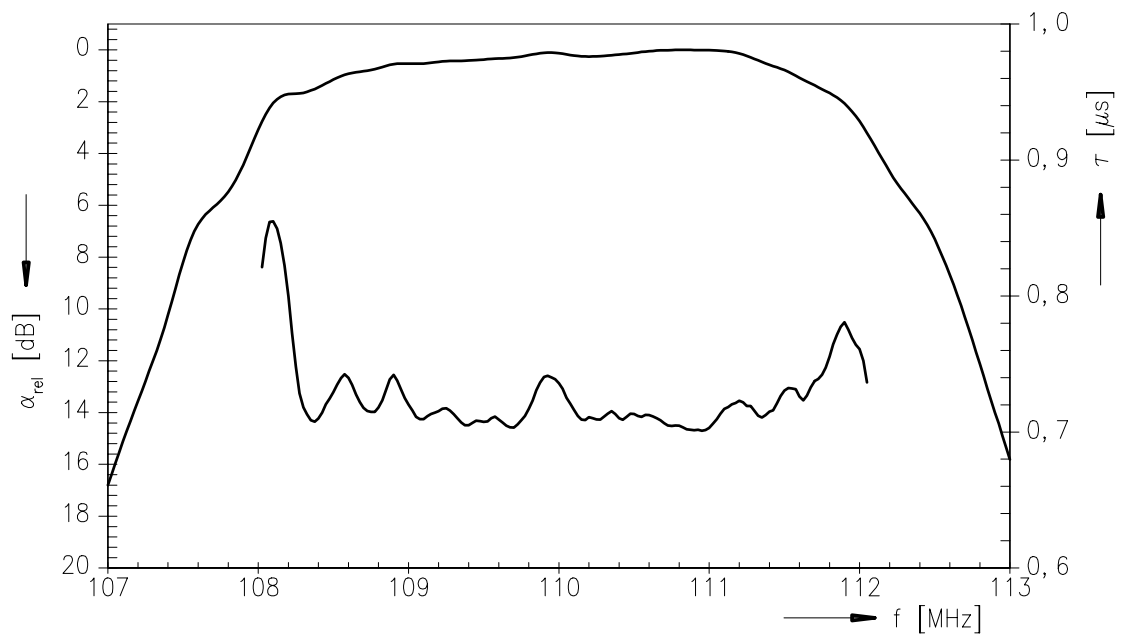


Data Sheet

Normalized frequency response



Normalized frequency response (pass band)

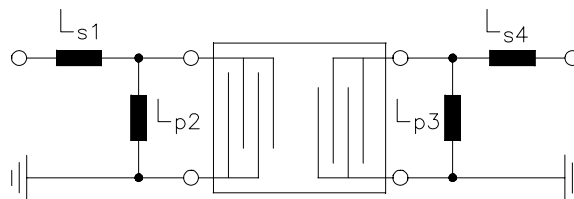




Data Sheet

Matching network (element values may depend on pcb layout)

50 Ω unbalanced:



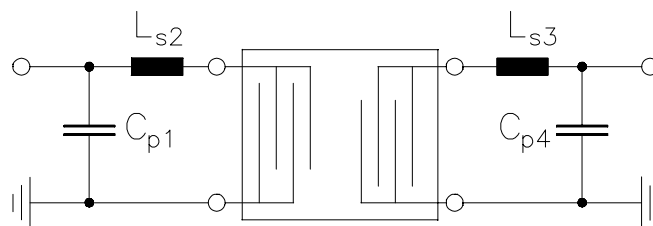
$$L_{s1} = 82 \text{ nH}$$

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

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

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

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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