EPCOS

SAW Components

Data Sheet B3802

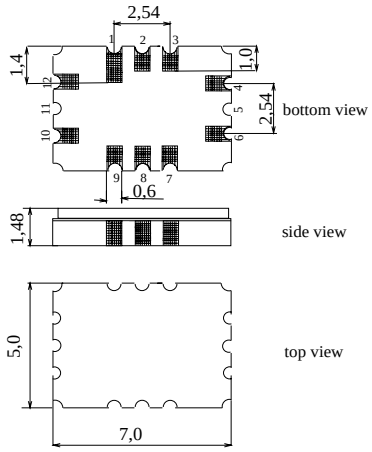
Ceramic package QCC12C

Features

- Low-loss IF filter
- Balanced or unbalanced operation
- Ceramic package for **S**urface **M**ounted **T**echnology **(SMT)**

Terminals

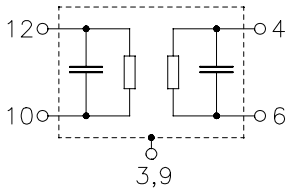
- Ni, Gold-plated



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 **S**ensitive **D**evice (**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	

Characteristics

Operating temperature: T = 25 ˚C
Terminating source impedance: Z_S = 50 Ω and matching network
Terminating load impedance: Z_L = 50 Ω 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	α_{rel} ≤3,0 dB	B_{3dB}	3,75	4,0	—	MHz
	α_{rel} ≤1,0 dB	B_{1dB}	—	3,1	—	MHz
Amplitude ripple (max peak to adjacent valley)		$\Delta\alpha$				
	$f_C \pm 1{,}6$ MHz		—	0,5	—	dB
Group delay ripple		$\Delta\tau$				
	$f_C \pm 1{,}6$ 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

Characteristics

Operating temperature: T = -10 ... 70 °C
Terminating source impedance: Z_S = 50 Ω and matching network
Terminating load impedance: Z_L = 50 Ω 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	α_{rel} ≤3,0 dB	B_{3dB}	3,75	4,0	—	MHz
	α_{rel} ≤1,0 dB	B_{1dB}	—	3,1	—	MHz
Amplitude ripple (max peak to adjacent valley)		$\Delta\alpha$				
	$f_C \pm 1{,}6$ MHz		—	0,5	—	dB
Group delay ripple		$\Delta\tau$				
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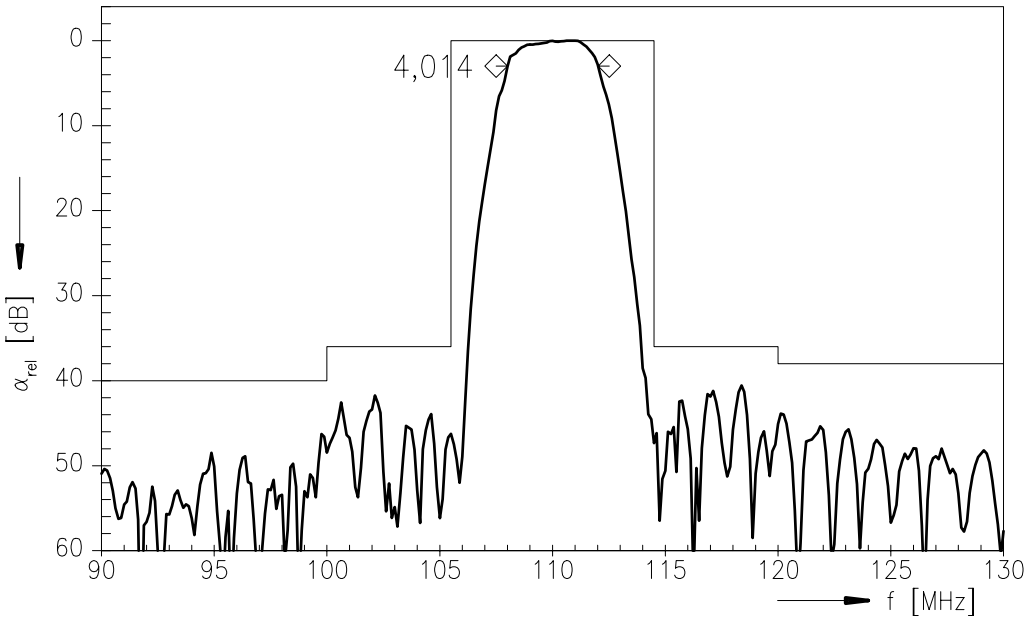
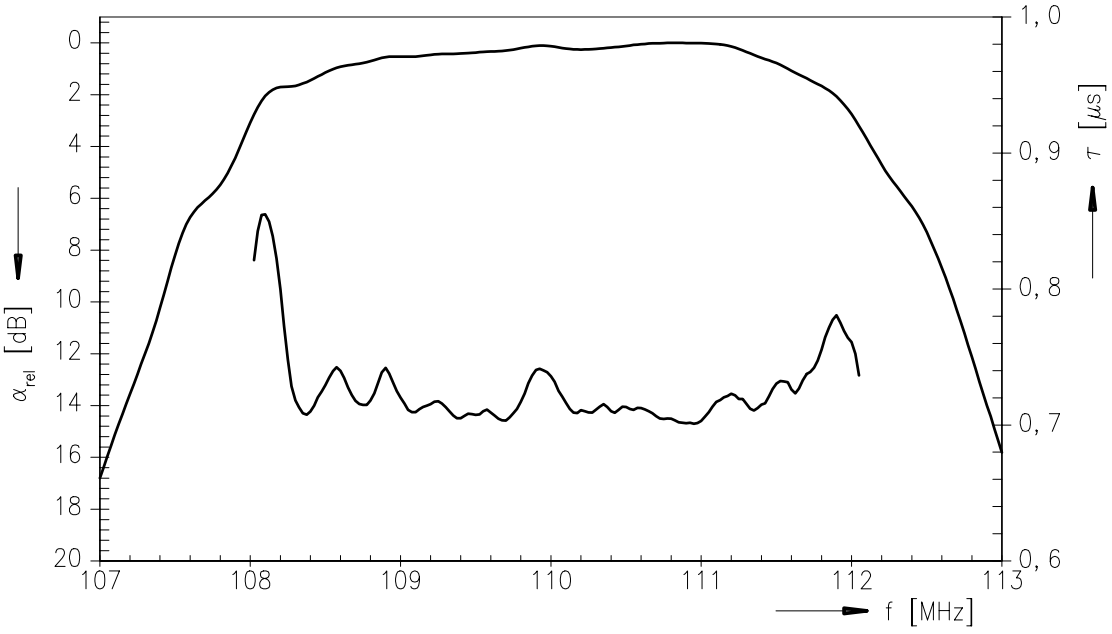
120,0 MHz ... 160,0 MHz			38	43	—	dB
Temperature coefficient of frequency		TC_f	—	–18	—	ppm/K

Normalized frequency response

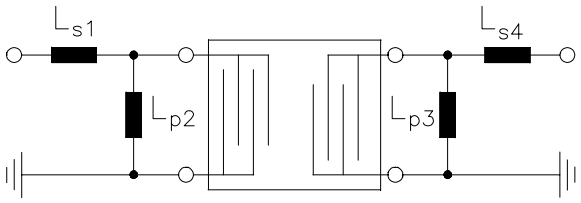


Normalized frequency response (pass band)



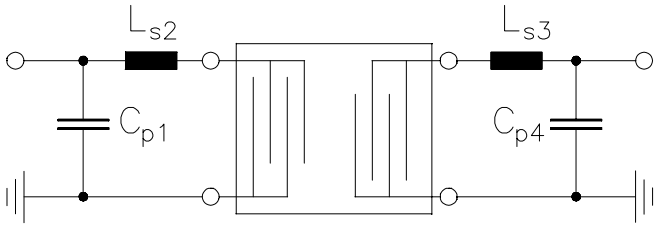
Matching network (element values may depend on pcb layout)

50 Ω unbalanced:



L_{s1} = 82 nH
L_{p2} = 47 nH
L_{p3} = 33 nH
L_{s4} = 12 nH

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



C_{p1} = 100 nF
L_{s2} = 56 nH
L_{s3} = 56 nH
C_{p4} = 68 nF

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