



# SAW Components

Data Sheet B3690





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B3690

IF Low-Loss Filter

610,00 MHz

Data Sheet

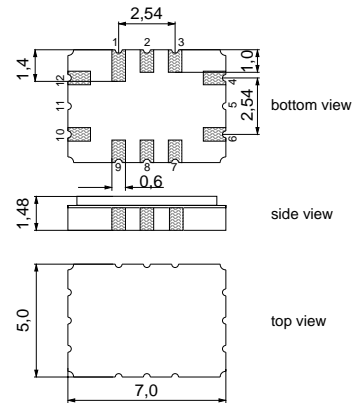
Ceramic package QCC12C

Features

- Low-loss IF filter
- Temperature stable
- Ceramic SMD package
- Balanced and unbalanced operation possible

Terminals

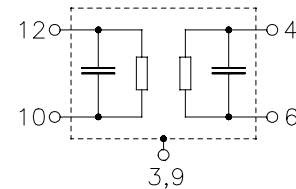
- Gold plated



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
- 3, 9 Case ground
- 1, 2, 7, 8 To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B3690	B39611-B3690-H310	C61157-A7-A95	F61074-V8170-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	$T$	-25 / +105	°C	
Storage temperature range	$T_{stg}$	-25 / +105	°C	
DC voltage	$V_{DC}$	0	V	
Source power	$P_s$	10	dBm	



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**Characteristics**

Operating temperature range:  $T = -25^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$  and matching network  
 Terminating load impedance:  $Z_L = 50\ \Omega$  and matching network

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	609,25	610,00	610,75	MHz
<b>Minimum insertion attenuation</b> (including loss in matching elements)	$\alpha_{\min}$	—	9,5	11,0	dB
<b>Amplitude ripple (p-p)</b> $f_C - 750\ \text{kHz}$ ... $f_C + 750\ \text{kHz}$	$\Delta\alpha$	—	0,9	1,2	dB
<b>Passband width</b>					
	$\alpha_{\text{rel}} \leq 1,0\ \text{dB}$	$B_{1,0\text{dB}}$	—	1,55	— MHz
	$\alpha_{\text{rel}} \leq 3,0\ \text{dB}$	$B_{3,0\text{dB}}$	2,6	2,7	— MHz
	$\alpha_{\text{rel}} \leq 35,0\ \text{dB}$	$B_{35\text{dB}}$	—	6,3	8,0 MHz
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
5,0 MHz ... 570,0 MHz		45	51	—	dB
570,0 MHz ... 606,0 MHz		35	44	—	dB
614,0 MHz ... 650,0 MHz		35	38	—	dB
650,0 MHz ... 862,0 MHz		45	52	—	dB
<b>Impedance at <math>f_C</math></b>					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	300    5,3	—	$\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	410    4,6	—	$\Omega \parallel \text{pF}$
<b>Temperature coefficient of frequency <sup>1)</sup></b>	$TC_f$	—	- 0,036	—	ppm/K <sup>2</sup>
<b>Frequency inversion point</b>	$T_0$	—	25	—	$^{\circ}\text{C}$

<sup>1)</sup> Temperature dependence of  $f_C$ :  $f_C(T) = f_C(T_0)(1 + TC_f(T - T_0)^2)$



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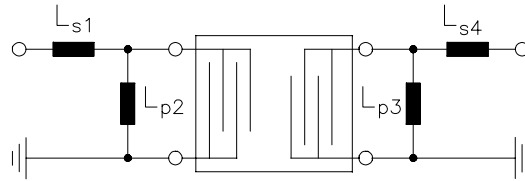
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Matching network to 50  $\Omega$  (Element values depend on PCB layout):

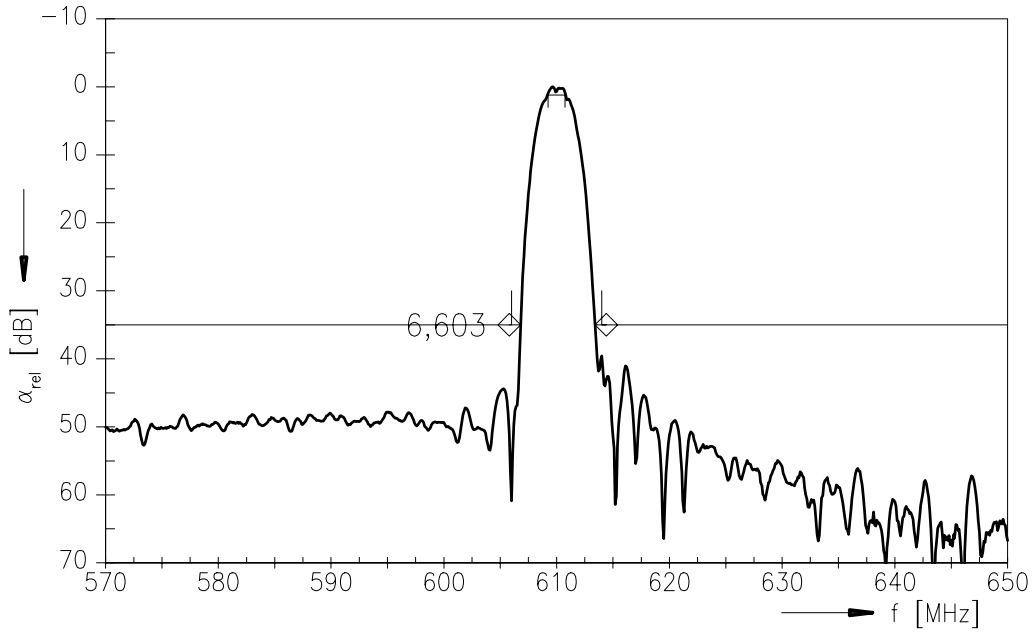


- $L_{s1} = 30 \text{ nH}$
- $L_{p2} = 16 \text{ nH}$
- $L_{p3} = 16 \text{ nH}$
- $L_{s4} = 34 \text{ nH}$

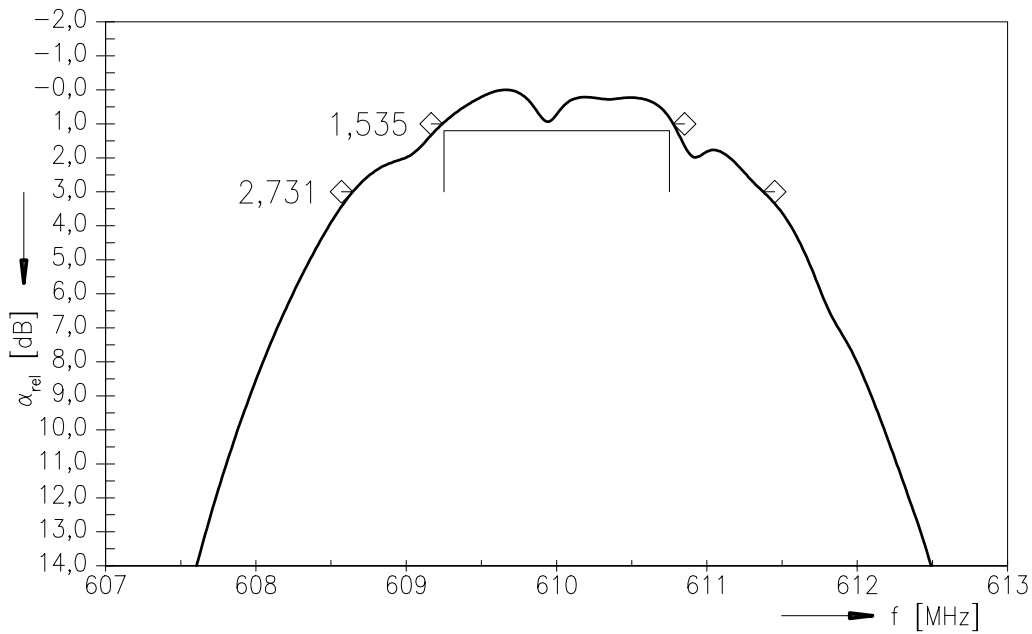


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Transfer function:



Transfer function (pass band):





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