



SAW Components

Data Sheet B3690

Data Sheet

EPCOS



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B3690

IF Low-Loss Filter

610,00 MHz

Data Sheet

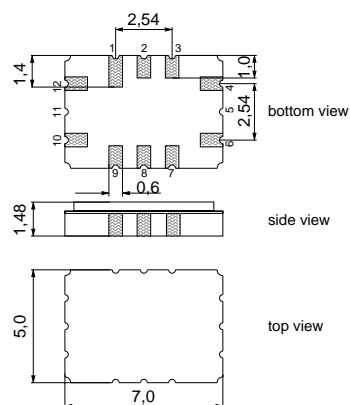
Ceramic package **QCC12C**

Features

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

Terminals

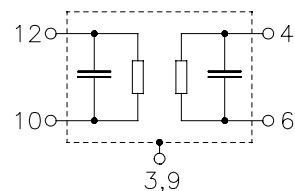
- Gold plated



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

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

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



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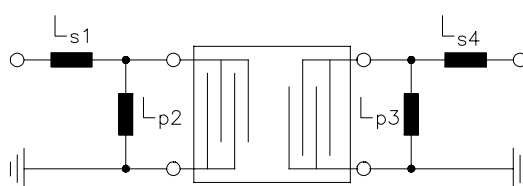
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Matching network to 50 Ω (Element values depend on PCB layout):



L_{s1}	=	30 nH
L_{p2}	=	16 nH
L_{p3}	=	16 nH
L_{s4}	=	34 nH



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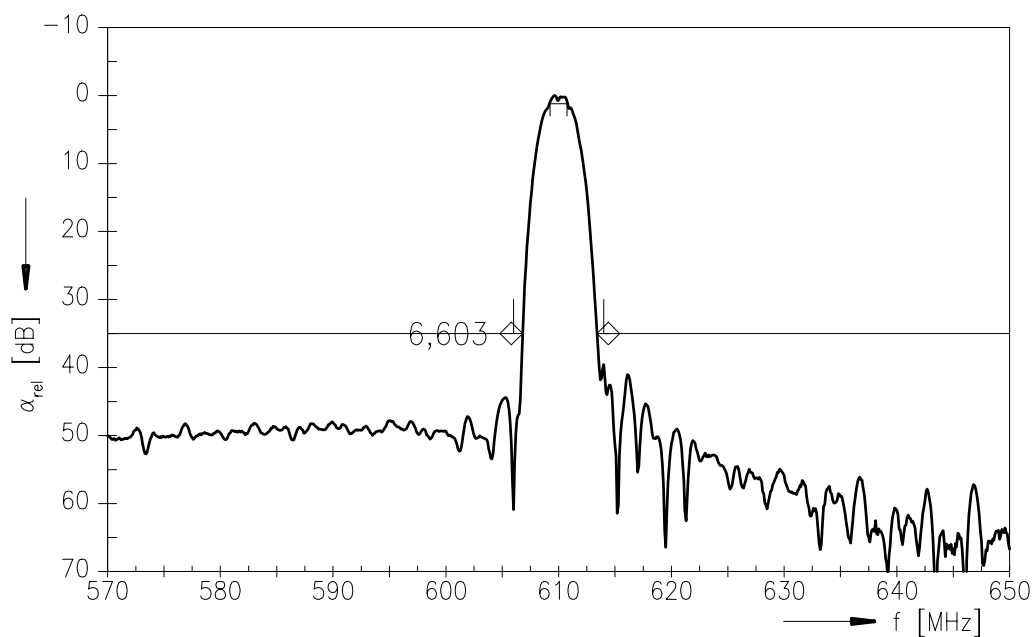
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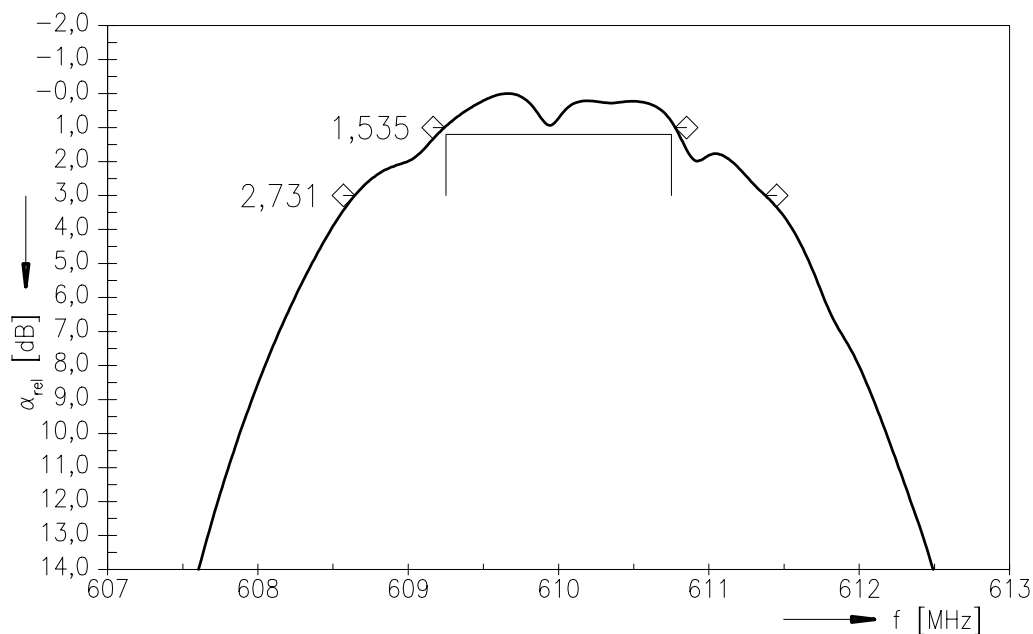
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Transfer function:



Transfer function (pass band):





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