



SAW Components

Data Sheet B4930

Data Sheet

An abstract, grayscale graphic featuring a large, stylized, and slightly blurred "EPCOS" logo. The logo is set against a background of curved, overlapping bands and a faint world map, creating a sense of global connectivity and technological advancement.



SAW Components

B4930

Low-Loss Filter for Mobile Communication

109,8 MHz

Data Sheet



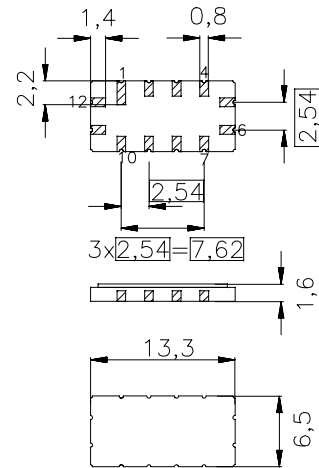
SMD ceramic package **QCC12**

Features

- Low-loss IF filter for mobile telephone
- Channel selection in CDMA systems
- Low insertion attenuation
- High rejection
- Unbalanced input operation
- Balanced or unbalanced output operation
- Filter surface passivated
- Package for **Surface Mounted Technology (SMT)**

Terminals

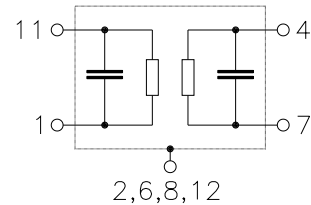
- Gold-plated Ni



Dimensions in mm, approx. weight 0,44 g

Pin configuration

1	Input unbalanced
11	Input ground
7	Output
4	Balanced output or ground
5, 10	To be grounded
2, 6, 8, 12	Case ground
3, 9	Not connected



Type	Ordering code	Marking and Package according to	Packing according to
B4930	B39111-B4930-Z510	C61157-A7-A55	F61064-V8026-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operating 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:	$T = -40\text{ °C} \dots +85\text{ °C}$
Terminating source impedance:	$Z_S = 1000\ \Omega \parallel 113\text{ nH}$
Terminating load impedance:	$Z_L = 1000\ \Omega \parallel 113\text{ nH}$

		min.	typ.	max.	
Nominal frequency	f_N	—	109,8	—	MHz
Minimum insertion attenuation (including losses in matching circuit without loss in balun)	α_{\min}	—	7,5	8,5	dB
Amplitude ripple (p-p after gating ¹⁾) $f_N - 0,3\text{ MHz} \dots f_N + 0,3\text{ MHz}$	$\Delta\alpha$	—	0,3	0,6	dB
Phase linearity (rms deviation after gating ¹⁾) $f_N - 0,614\text{ MHz} \dots f_N + 0,614\text{ MHz}$		—	2,2	3,0	°
Group delay f_N	τ	—	3,9	4,0	µs
Group delay ripple (p-p after gating ¹⁾) $f_N - 0,614\text{ MHz} \dots f_N + 0,614\text{ MHz}$	$\Delta\tau$	—	0,6	0,7	µs
Relative attenuation (relative to α_{\min}) $f_N \pm 0,614\text{ MHz}$	α_{rel}	—	4,2	5,0	dB
$f_N - 0,9\text{ MHz}$		35	37	—	dB
$f_N + 0,9\text{ MHz}$		38	40	—	dB
$f_N - 1,25 / 1,7 / 2,05\text{ MHz}$		50	56	—	dB
$f_N + 1,25 / 1,7 / 2,05\text{ MHz}$		48	54	—	dB
$f_N - 25\text{ MHz} \dots f_N - 9,0\text{ MHz}$		60	70	—	dB
$f_N - 9,0\text{ MHz} \dots f_N - 1,25\text{ MHz}$		45	55	—	dB
$f_N - 1,25\text{ MHz} \dots f_N - 0,90\text{ MHz}$		35	37	—	dB
$f_N + 0,90\text{ MHz} \dots f_N + 1,25\text{ MHz}$		38	40	—	dB
$f_N + 1,25\text{ MHz} \dots f_N + 9,0\text{ MHz}$		45	50	—	dB
$f_N + 9,0\text{ MHz} \dots f_N + 25\text{ MHz}$		50	60	—	dB
Reflected wave signal suppression		30	32	—	dB

¹⁾ Removal of trailing end of time domain response for which all of signal is more than 30 dB below main pulse.



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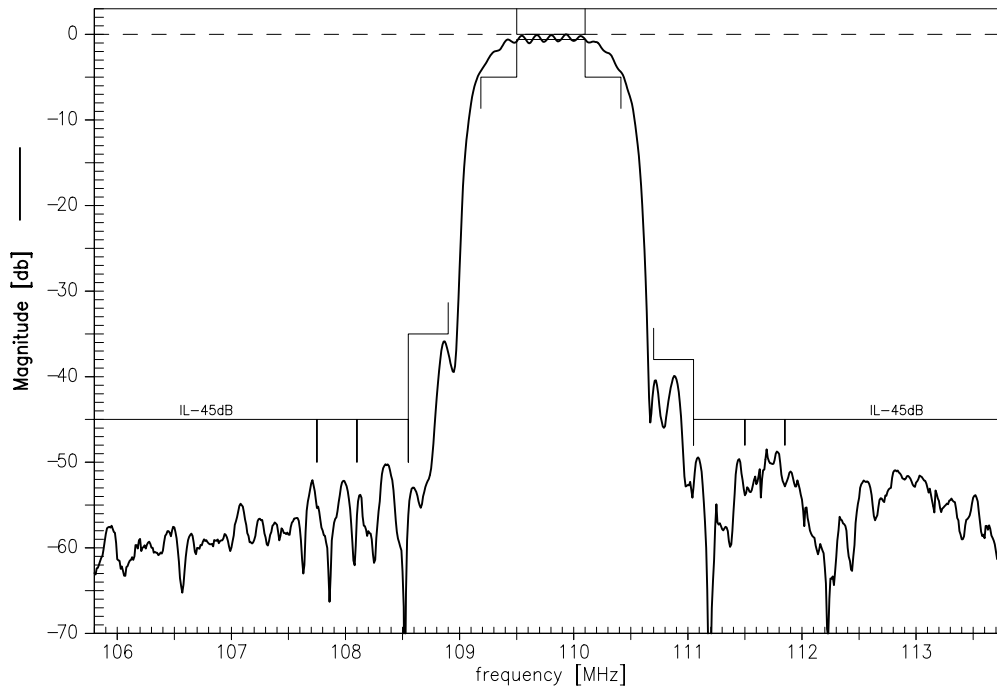
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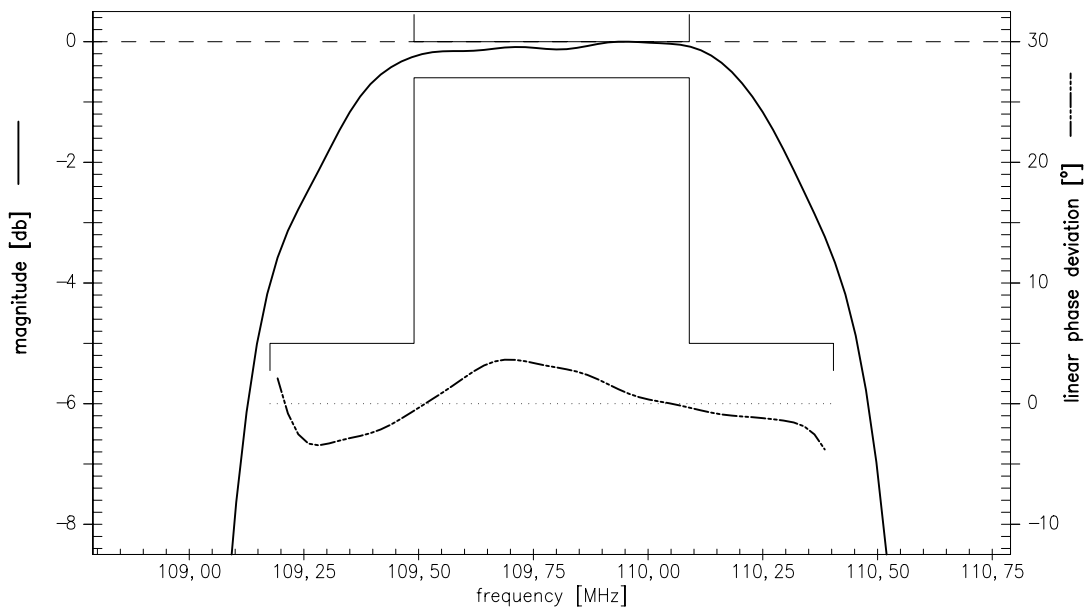
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Transfer function (unbalanced - balanced):



Transfer function (gated):





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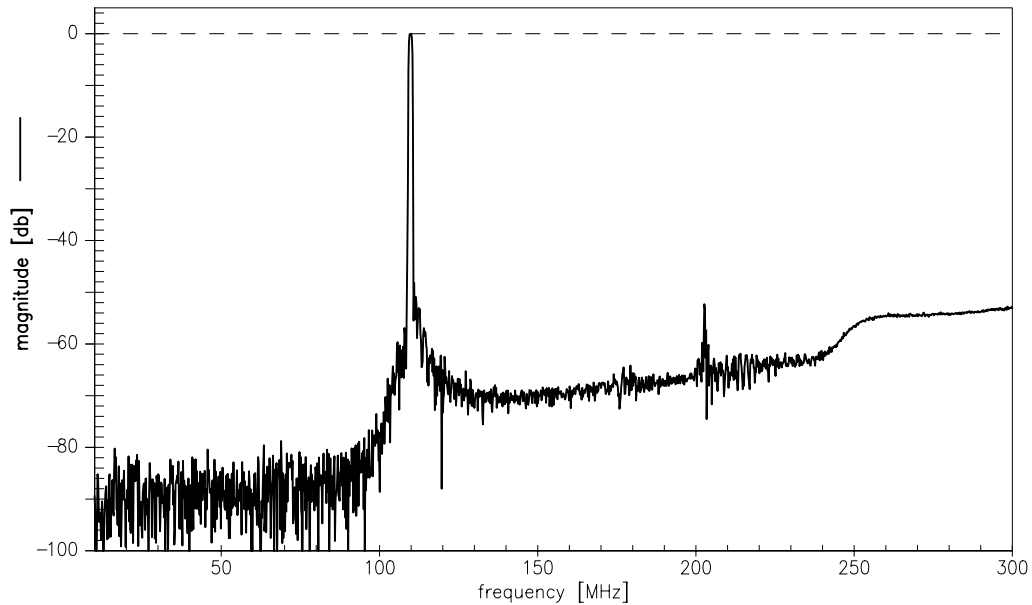
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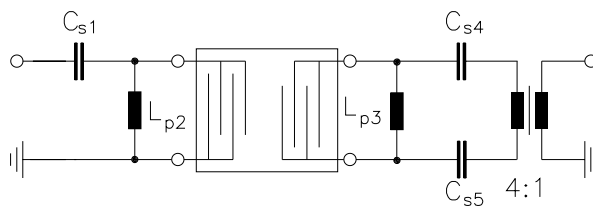
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Transfer function (unbalanced - balanced):



Test matching network to unbal. 50 Ω / bal. 200 Ω (element values depend on PCB layout):



$$\begin{aligned} C_{s1} &= 5,6 \parallel 1,8 \text{ pF} \\ L_{p2} &= 120 \parallel 270 \text{ nH} \\ L_{p3} &= 150 \parallel 390 \text{ nH} \\ C_{s4} &= 5,6 \text{ pF} \\ C_{s5} &= 6,8 \text{ pF} \end{aligned}$$

Note:

The specifications in this data sheet are valid for unbalanced - balanced operation. The test matching network is realized using M/A-COM 1:4 baluns TP103 with an insertion loss of 0,6 dB.



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