



# SAW Components

Data Sheet B4812





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B4812

Low-Loss Filter

246,01 MHz

Data Sheet



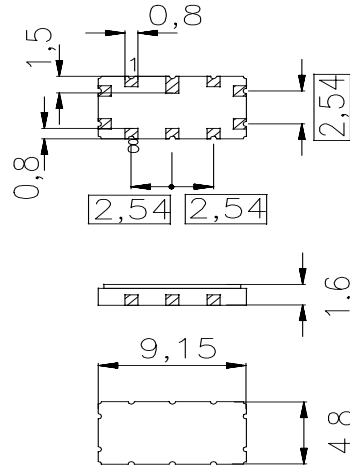
Ceramic package QCC10B

**Features**

- Low-loss IF filter for mobile telephone
- Channel selection in GSM systems
- Hermetically sealed ceramic SMD package
- Balanced and unbalanced operation possible

**Terminals**

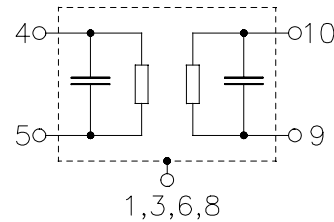
- Gold-plated Ni



Dimensions in mm, approx. weight 0,23 g

**Pin configuration**

- 4 Input
- 5 Input ground or balanced input
- 9 Output
- 10 Output ground or balanced output
- 1, 3, 6, 8 Case – ground
- 2, 7 Ground



Type	Ordering code	Marking and Package according to	Packing according to
B4812	B39251-B4812-Z710	C61157-A7-A49	F61074-V8127-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 25/+ 85	°C
Storage temperature range	$T_{stg}$	- 25/+ 85	°C
DC voltage	$V_{DC}$	0	V
Source power	$P_s$	10	dBm



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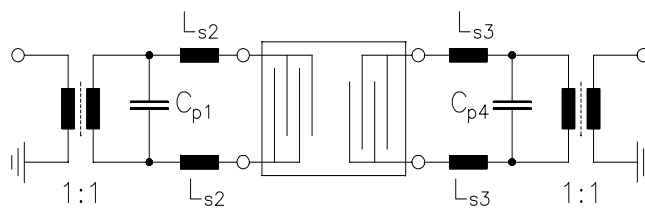
**Characteristics**

Reference temperature:  $T = 25\text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 700\text{ Ohm} \parallel -2,6\text{ pF}$   
 Terminating load impedance:  $Z_L = 700\text{ Ohm} \parallel -2,6\text{ pF}$

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	246,01	—	MHz
<b>Minimum insertion attenuation</b> (including loss in matching coils)	$\alpha_{\min}$	2,0	3,2	5,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
$f_N - 67,5\text{ kHz} \dots f_N + 67,5\text{ kHz}$		—	0,6	2,0	dB
$f_N - 80,0\text{ kHz} \dots f_N + 80,0\text{ kHz}$		—	0,7	3,0	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$				
$f_N - 50,0\text{ kHz} \dots f_N + 50,0\text{ kHz}$		—	0,5	1,5	$\mu\text{s}$
$f_N - 80,0\text{ kHz} \dots f_N + 80,0\text{ kHz}$		—	1,2	3,0	$\mu\text{s}$
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
$f_N - 25,00\text{ MHz} \dots f_N - 3,00\text{ MHz}$		50	60	—	dB
$f_N - 3,00\text{ MHz} \dots f_N - 1,60\text{ MHz}$		48	60	—	dB
$f_N - 1,60\text{ MHz} \dots f_N - 0,60\text{ MHz}$		38	50	—	dB
$f_N - 0,60\text{ MHz} \dots f_N - 0,40\text{ MHz}$		28	40	—	dB
$f_N - 0,40\text{ MHz} \dots f_N - 0,20\text{ MHz}$		8	14	—	dB
$f_N + 0,20\text{ MHz} \dots f_N + 0,40\text{ MHz}$		8	14	—	dB
$f_N + 0,40\text{ MHz} \dots f_N + 0,60\text{ MHz}$		28	40	—	dB
$f_N + 0,60\text{ MHz} \dots f_N + 1,60\text{ MHz}$		38	50	—	dB
$f_N + 1,60\text{ MHz} \dots f_N + 3,00\text{ MHz}$		48	60	—	dB
$f_N + 3,00\text{ MHz} \dots f_N + 25,00\text{ MHz}$		50	60	—	dB
<b>Impedance at <math>f_N</math></b>					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	$700 \parallel 2,6$	—	$\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	$700 \parallel 2,6$	—	$\Omega \parallel \text{pF}$
<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  $f_c$ :  $f_c(T) = f_c(T_0)(1 + TC_f(T - T_0)^2)$

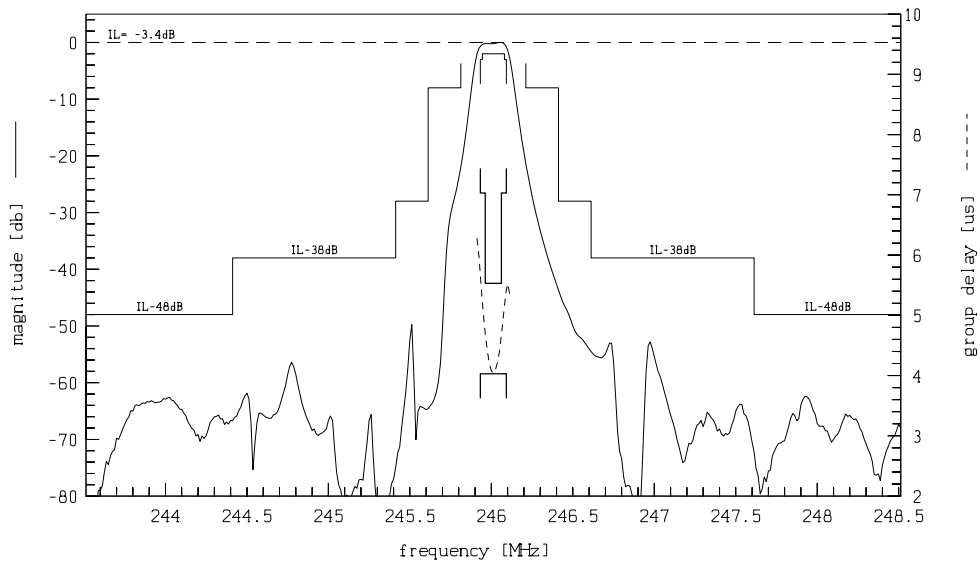
**Test matching network to 50  $\Omega$**  (element values depend on PCB layout):



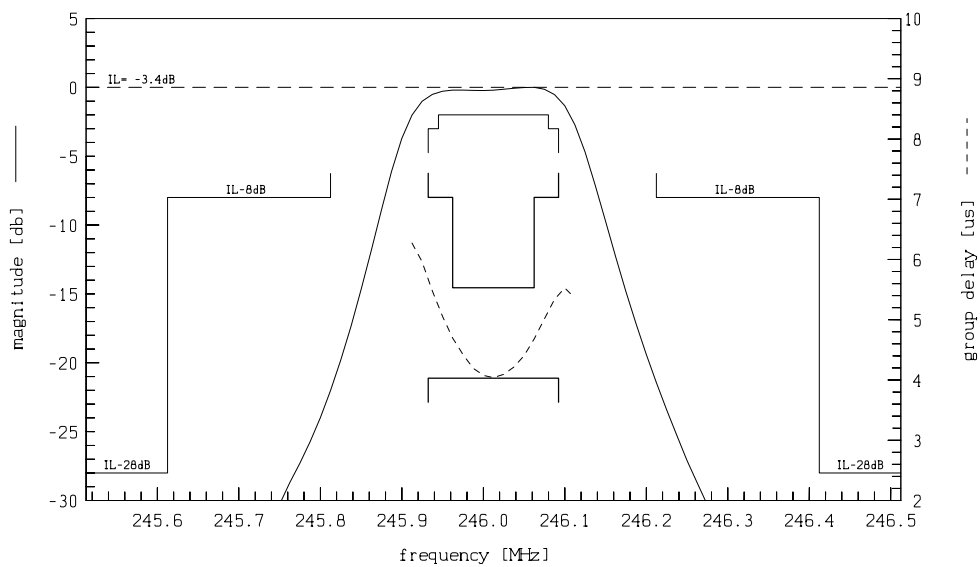
- $C_{p1} = 1,8\text{ pF}$
- $L_{s2} = 56\text{ nH}$
- $L_{s3} = 56\text{ nH}$
- $C_{p4} = 1,8\text{ pF}$



Transfer function:



Transfer function (pass band):





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