



# SAW Components

Data Sheet B4880

Data Sheet

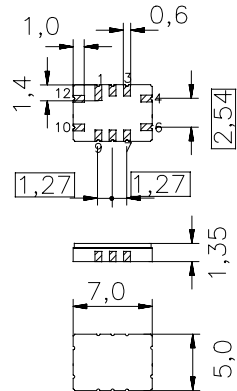



 Ceramic package **QCC12B**
**Features**

- Low-loss IF filter for mobile telephone
- Channel selection in GSM, PCN, PCS systems
- Ceramic SMD package
- Balanced and unbalanced operation possible

**Terminals**

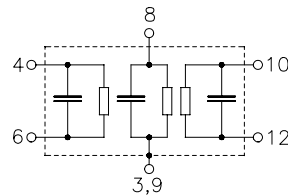
- Gold-plated Ni



Dimensions in mm, approx. weight 0,2 g

**Pin configuration**

12	Input
10	Input ground or balanced input
6	Output
4	Output ground or balanced output
8	External coil
3, 9	Case – ground
1,2,7	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B4880	B39201-B4880-Z910	C61157-A7-A52	F61074-V8038-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operating temperature range	$T$	- 30/+ 80	°C
Storage temperature range	$T_{stg}$	- 35/+ 85	°C
DC voltage	$V_{DC}$	0	V
Source power	$P_s$	10	dBm

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## Characteristics

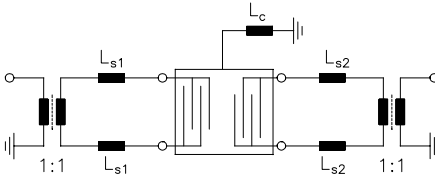
Operating temperature range:	$T = -10$ to $+70$ °C
Terminating source impedance:	$Z_S = 1,1$ k $\Omega$    270 nH
Terminating load impedance:	$Z_L = 1,1$ k $\Omega$    270 nH
External coil:	$L_c = 120$ nH

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	200,0	—	MHz
<b>Minimum insertion attenuation</b>					
(including losses in matching circuit)	$\alpha_{\min}$	—	3,7	5,0	dB
(excluding losses in matching circuit)		—	2,9	3,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
$f_N - 70,0$ kHz ... $f_N + 70,0$ kHz		—	0,3	2,0	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$				
$f_N - 70,0$ kHz ... $f_N + 70,0$ kHz		—	0,5	2,0	$\mu$ s
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b>	$\alpha_{\text{rel}}$				
$f_N - 15,00$ MHz ... $f_N - 3,00$ MHz		52	57	—	dB
$f_N - 3,00$ MHz ... $f_N - 1,60$ MHz		44	58	—	dB
$f_N - 1,60$ MHz ... $f_N - 0,80$ MHz		34	49	—	dB
$f_N - 0,80$ MHz ... $f_N - 0,60$ MHz		34	50	—	dB
$f_N - 0,60$ MHz ... $f_N - 0,40$ MHz		25	42	—	dB
$f_N - 0,40$ MHz ... $f_N - 0,20$ MHz		2	11	—	dB
$f_N + 0,20$ MHz ... $f_N + 0,40$ MHz		2	8	—	dB
$f_N + 0,40$ MHz ... $f_N + 0,60$ MHz		25	30	—	dB
$f_N + 0,60$ MHz ... $f_N + 0,80$ MHz		34	42	—	dB
$f_N + 0,80$ MHz ... $f_N + 1,60$ MHz		34	48	—	dB
$f_N + 1,60$ MHz ... $f_N + 3,00$ MHz		44	49	—	dB
$f_N + 3,00$ MHz ... $f_N + 15,00$ MHz		52	59	—	dB
<b>Impedance at <math>f_N</math></b>					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	1,1    2,3	—	k $\Omega$    pF
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	1,1    2,3	—	k $\Omega$    pF
<b>Temperature coefficient of frequency</b> <sup>1)</sup>	$TC_f$	—	-0,036	—	ppm/K <sup>2</sup>
<b>Frequency inversion point</b>	$T_0$	—	40	—	°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 Ω (element values depend on PCB layout):

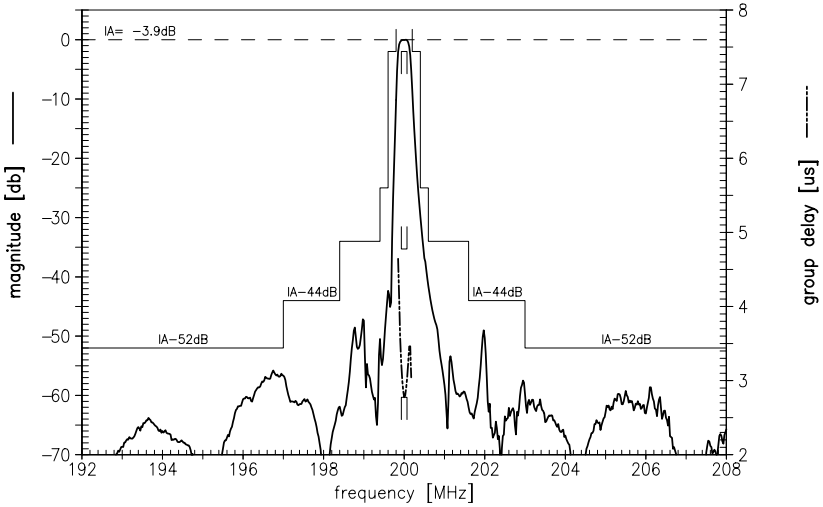


- $L_{s1} = 82 \text{ nH}$
- $L_{s2} = 82 \text{ nH}$
- $L_c = 120 \text{ nH}$

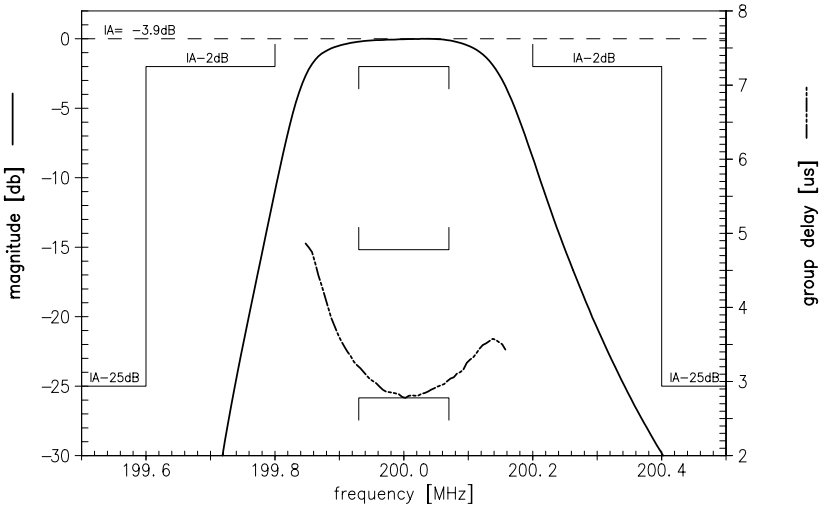
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Transfer function:



Transfer function (pass band):





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