EPCOS

SAW Components

Data Sheet B3881

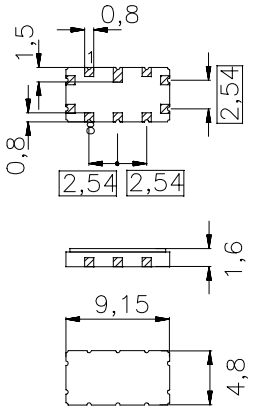
Ceramic package **QCC10B**

Features

- High performance IF bandpass filter
- Multichannel W-CDMA and CDMA capable
- Hermetically sealed ceramic package
- unbalanced to unbalanced and unbalanced to balanced operation possible

Terminals

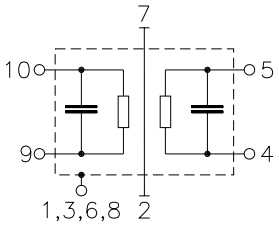
- Gold plated



Dimensions in mm, approx. weight 0,23 g

Pin configuration

9	Input
10	Input ground
4	Output
5	Output ground or balanced output
2, 7	Ground
1, 3, 6, 8	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B3881	B39171-B3881-Z710	C61157-A7-A49	F61074-V8172-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	-40/ +85	˚C	
Storage temperature range	T_{stg}	-40/ +85	˚C	
DC voltage	V_{DC}	5	V	
Source power	P_s	10	dBm	

Characteristics

Operating temperature: T = +35 .. +85 °C

Terminating source impedance: Z_S=50 Ω single ended and matching network

Terminating load impedance: Z_S=50 Ω single ended and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	168,96	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	18,5	20,5	dB
Passband width					
$\alpha_{rel} \leq 1$ dB	B_{1dB}	—	14,1	—	MHz
$\alpha_{rel} \leq 2$ dB	B_{2dB}	—	14,5	—	MHz
$\alpha_{rel} \leq 40$ dB	B_{40dB}	—	17,1	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 6{,}67$ MHz		—	0,6	0,9	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 6{,}67$ MHz		—	80	120	ns
Phase Linearity[1)] (rms)	$\Delta\varphi$				
$f_N \pm 1{,}92$ MHz		—	0,5	1,0	°
f_N - 5,0 MHz $\pm$ 1,92 MHz		—	1,5	2,0	°
f_N + 5,0 MHz $\pm$ 1,92 MHz		—	0,9	1,5	°
f_N + k*1,25 MHz $\pm$ 0,6144 MHz		—	0,7	1,3	°
Average Error Vector Magnitude [1)]	*EVM*				
$f_N \pm 1{,}92$ MHz		—	1,3	3,0	%
f_N - 5,0 MHz $\pm$ 1,92 MHz		—	3,0	4,0	%
f_N + 5,0 MHz $\pm$ 1,92 MHz		—	2,5	4,0	%
f_N + k*1,25 MHz $\pm$ 0,6144 MHz		—	1,8	4,0	%
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 7,5 MHz ... $f_N \pm$ 17,5 MHz		2	4	—	dB
$f_N \pm$ 17,5 MHz ... $f_N \pm$ 21,5 MHz		41	45	—	dB
$f_N \pm$ 21,5 MHz ... $f_N \pm$ 25,5 MHz		43	48	—	dB
$f_N \pm$ 25,5 MHz ... $f_N \pm$ 66,0 MHz		45	50	—	dB
$f_N \pm$ 66,0 MHz ... $f_N \pm$ 111,0 MHz		40	45	—	dB
Temperature coefficient of frequency	TC_f	—	– 18	—	ppm/K

1) Phase Linearity/Average Error Vector Magnitude:where k = (-5, -4 .... +5)

Characteristics

Operating temperature: T = 0 .. +85 °C

Terminating source impedance: Z_S=50 Ω single ended and matching network

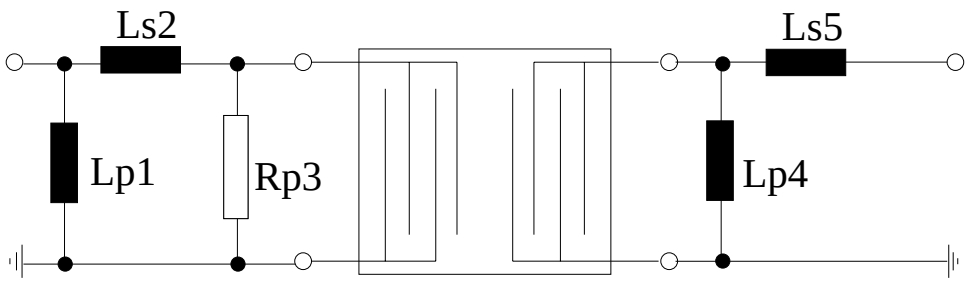
Terminating load impedance: Z_S=50 Ω single ended and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	168,96	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	18,5	20,5	dB
Passband width					
$\alpha_{rel} \leq 1$ dB	B_{1dB}	—	14,1	—	MHz
$\alpha_{rel} \leq 2$ dB	B_{2dB}	—	14,5	—	MHz
$\alpha_{rel} \leq 40$ dB	B_{40dB}	—	17,1	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 6{,}67$ MHz		—	0,6	0,9	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 6{,}67$ MHz		—	80	120	ns
Phase Linearity[1] (rms)	$\Delta\varphi$				
$f_N \pm 1{,}92$ MHz		—	0,5	1,0	°
f_N - 5,0 MHz $\pm$ 1,92 MHz		—	1,5	2,5	°
f_N + 5,0 MHz $\pm$ 1,92 MHz		—	0,9	1,5	°
f_N + k*1,25 MHz $\pm$ 0,6144 MHz		—	0,7	1,3	°
Average Error Vector Magnitude [1]	*EVM*				
$f_N \pm 1{,}92$ MHz		—	1,3	3,0	%
f_N - 5,0 MHz $\pm$ 1,92 MHz		—	3,0	4,5	%
f_N + 5,0 MHz $\pm$ 1,92 MHz		—	2,5	4,0	%
f_N + k*1,25 MHz $\pm$ 0,6144 MHz		—	1,8	4,0	%
Relative attenuation (relative to α_{min})	α_{rel}				
f_N – 7,5 MHz ... f_N – 17,5 MHz		2	4	—	dB
f_N + 7,5 MHz ... f_N + 17,5 MHz		1,5	4	—	dB
$f_N \pm 17{,}5$ MHz ... $f_N \pm$ 21,5 MHz		41	45	—	dB
$f_N \pm 21{,}5$ MHz ... $f_N \pm$ 25,5 MHz		43	48	—	dB
$f_N \pm 25{,}5$ MHz ... $f_N \pm$ 66,0 MHz		45	50	—	dB
$f_N \pm$ 66,0 MHz ... $f_N \pm 111{,}0$ MHz		40	45	—	dB
Temperature coefficient of frequency	TC_f	—	– 18	—	ppm/K

1) Phase Linearity/Average Error Vector Magnitude:where k = (-5, -4 .... +5)

Matching network to 50 Ohm:

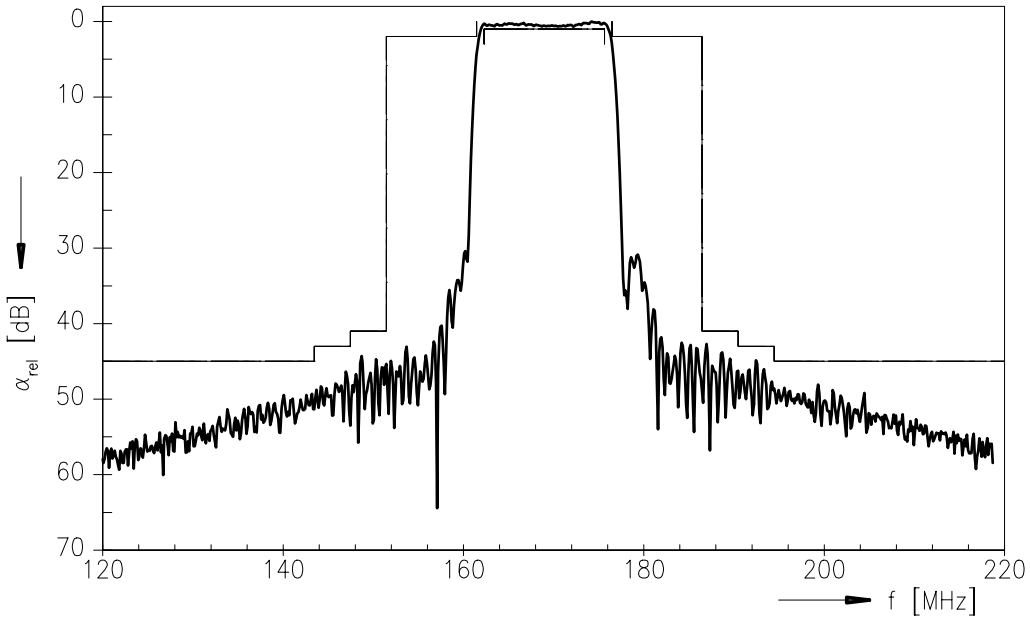
(Element values depend upon PCB layout)



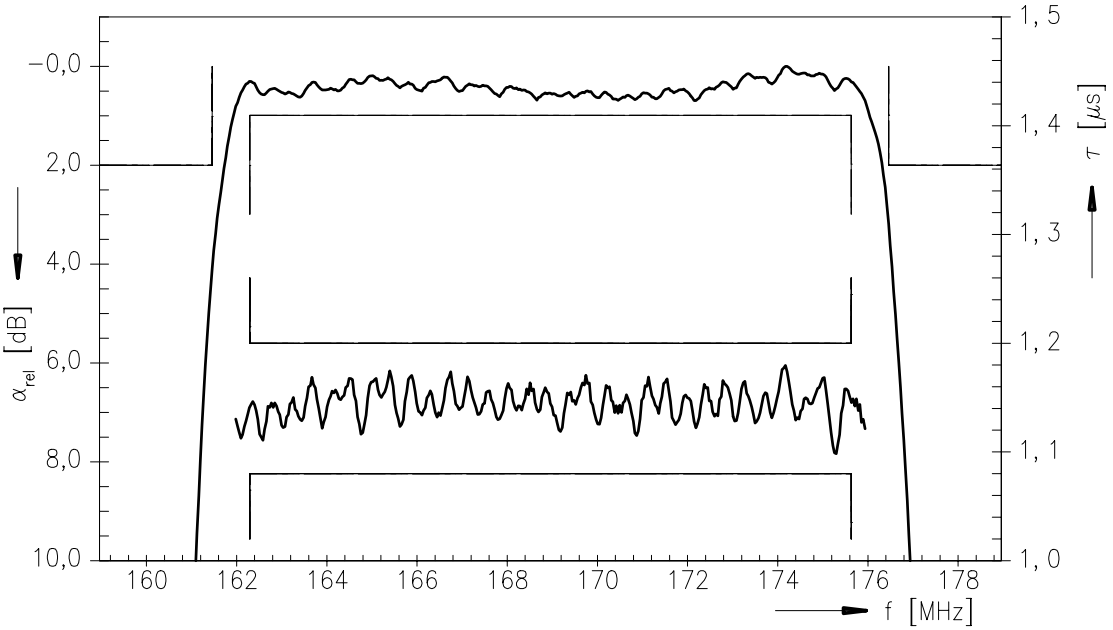
L_{p1} = 47 nH
L_{s2} = 100 nH
R_{p3} = 1,8 kΩ

L_{p4} = 220 nH
L_{s5} = 82 nH

Normalized frequency response, matching network (single ended to single ended)



Normalized frequency response (pass band), **matching network**



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC PD
P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2004. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.