EPCOS

SAW Components

Data Sheet B3881

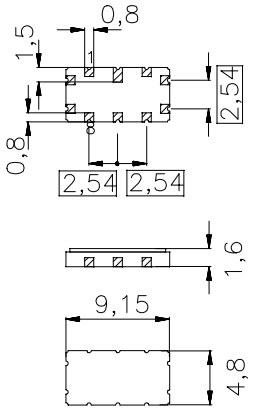
Ceramic package **QCC10B**

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

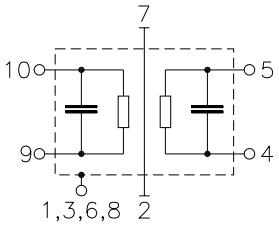
- Gold plated



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)	$\Delta\alpha$				
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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	°
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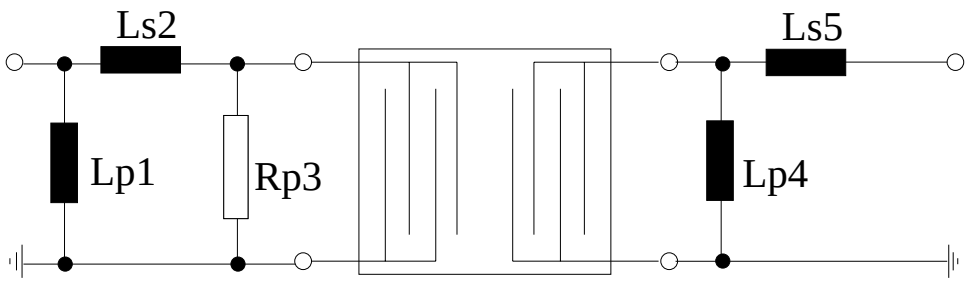
Temperature coefficient of frequency	TC_f	—	– 18	—	ppm/K

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

Matching network to 50 Ohm:

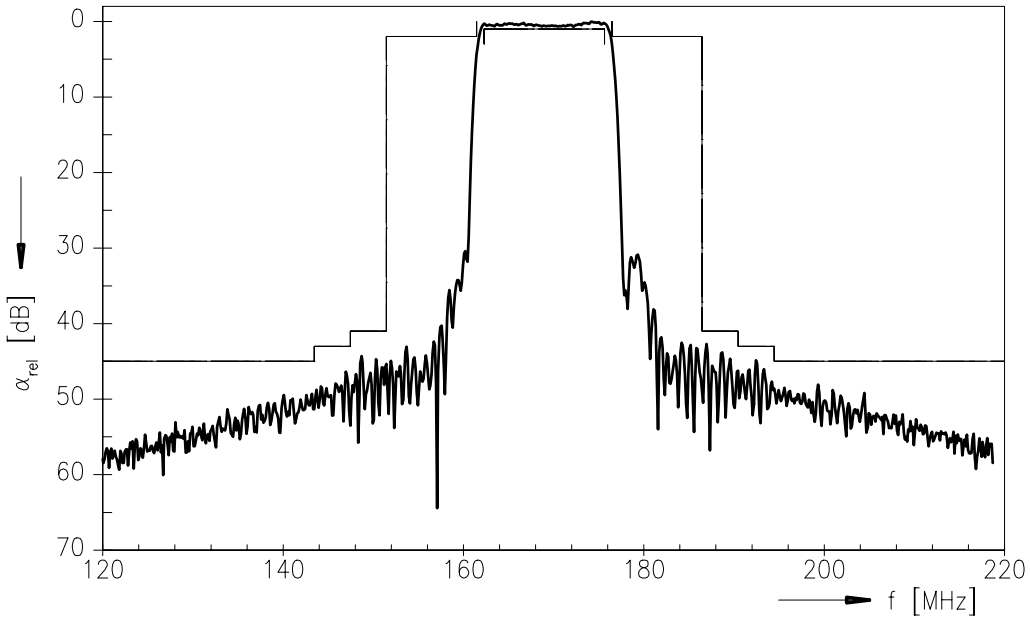
(Element values depend upon PCB layout)



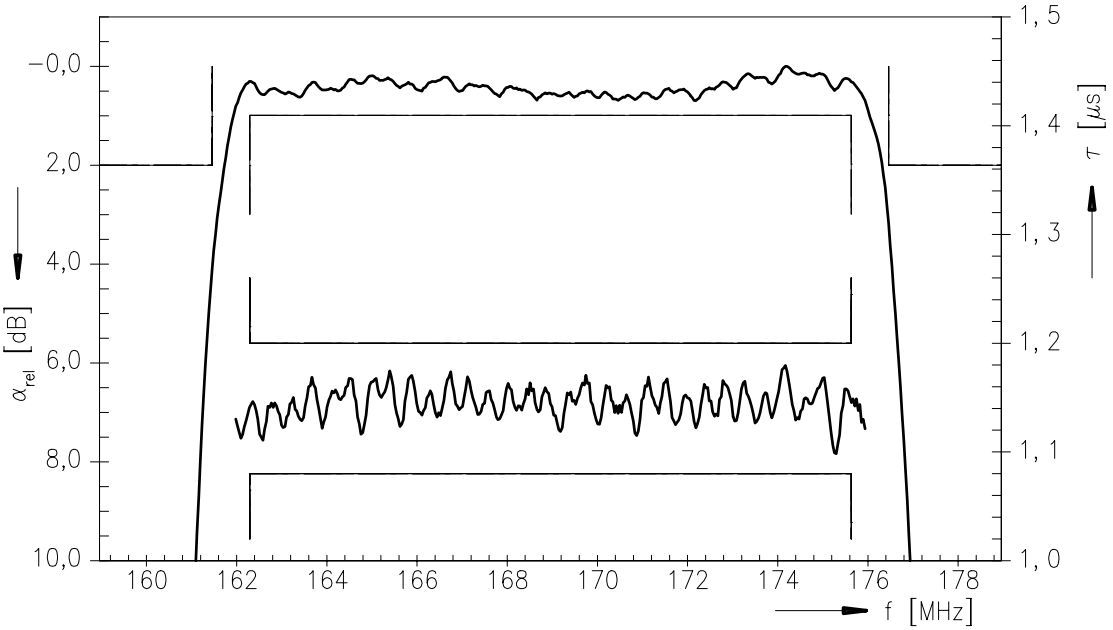
L_{p1} = 47 nH
L_{s2} = 100 nH
R_{p3} = 1,8 kΩ

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**



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