

SAW Components

Data Sheet B3881





SAW Components	B3881
Low-Loss Filter	168,96 MHz

Data Sheet

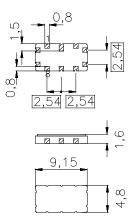
Ceramic package QCC10B

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

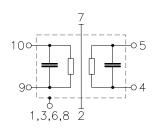
Gold plated



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



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

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	Т	-40/ +85	°C
Storage temperature range	T_{stg}	-40/ +85	°C
DC voltage	V _{DC}	5	V
Source power	Ps	10	dBm



SAW Components Low-Loss Filter				169	B388 ² 96 MH
				108,	
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Characteristics					
Operating temperature:	T = +35 +8	85 °C			
Terminating source impedance:	Z_S =50 Ω sin	gle endec	l and match	ing netwo	ork
Terminating load impedance:	$Z_S=50 \Omega sin$	gle endec	l and match	ing netwo	ork
	-				
		min.	typ.	max.	
Nominal frequency	f _N		168,96	—	MHz
Minimum insertion attenuation	α_{min}		18,5	20,5	dB
(including matching network)	~min		10,0	20,0	uD
Passband width					
$\alpha_{rel} \leq 1 \text{ dB}$	B _{1dB}		14,1		MHz
$\alpha_{rel} \leq 2 \text{ dB}$	B _{2dB}	—	14,5	—	MHz
$\alpha_{rel} \le 40 \text{ dB}$	B _{40dB}	—	17,1	—	MHz
Amplitude ripple (p-p)	Δα				
f _N ± 6,67 Μ	Hz		0,6	0,9	dB
Group delay ripple (p-p)	Δτ				
<i>f</i> _N ± 6,67 M	Hz	_	80	120	ns
Phase Linearity ¹⁾ (rms)	Δφ				
f _N ± 1,92 Μ			0,5	1,0	ů
$f_{ m N}$ - 5,0 MHz \pm 1,92 M		—	1,5	2,0	°
$f_{ m N}$ + 5,0 MHz ± 1,92 M		_	0,9	1,5	۰
<i>f</i> _N + k*1,25 MHz ± 0,6144	MHz	—	0,7	1,3	•
Average Error Vector Magnitude ¹⁾	EVM				
f _N ± 1,92 M		—	1,3	3,0	%
<i>f</i> _N - 5,0 MHz ± 1,92 M	Hz	_	3,0	4,0	%
<i>f</i> _N + 5,0 MHz ± 1,92 M	1Hz	_	2,5	4,0	%
$f_{\rm N}$ + k*1,25 MHz \pm 0,6144	MHz	—	1,8	4,0	%
Relative attenuation (relative to α_{min})	α.				
$f_{\rm N} \pm 7,5$ MHz $f_{\rm N} \pm 17,5$ M	α _{rel} 1Hz	2	4	_	dB
$f_{\rm N} \pm 17,5$ MHz $f_{\rm N} \pm 21,5$ M		41	45	_	dB
$f_{\rm N} \pm 21,5$ MHz $f_{\rm N} \pm 25,5$ M		43	48	_	dB
$f_{\rm N} \pm 25,5$ MHz $f_{\rm N} \pm 26,5$ M		45 45	40 50		dB
$f_{\rm N} \pm 66,0$ MHz $f_{\rm N} \pm 100,0$ M		43 40	30 45	_	dB
Temperature coefficient of frequency	TCf		- 18		ppm/l

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

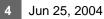
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Low-Loss Filter				168,	96 MH2
Data Sheet					
Characteristics					
Operating temperature: T:	= 0 +85	°C			
Terminating source impedance: Z _S	=50 Ω sin	ngle ended	and match	ing netwo	ork
Terminating load impedance: Z _S	=50 Ω sin	igle endec	and match	ing netwo	ork
		min.	typ.	max.	
Nominal frequency	f _N	_	168,96		MHz
Minimum insertion attenuation	α_{min}	_	18,5	20,5	dB
(including matching network)					
Passband width					
$\alpha_{rel} \leq 1 \text{ dB}$	B _{1dB}	_	14,1		MHz
$\alpha_{rel} \leq 2 \text{ dB}$	B _{2dB}		14,5	_	MHz
$\alpha_{rel} \le 40 \text{ dB}$	B _{40dB}	_	17,1	—	MHz
Amplitude ripple (p-p)	Δα				
$f_{\rm N} \pm 6,67 \text{ MHz}$	20	_	0,6	0,9	dB
·N = 0,01 ····· ·			0,0	0,0	<u>a</u>
Group delay ripple (p-p)	Δτ				
$f_{\rm N} \pm 6,67$ MHz		—	80	120	ns
Phase Linearity ¹⁾ (rms)	Δφ				
$f_{\rm N} \pm 1,92 {\rm MHz}$	-4	_	0,5	1,0	۰
<i>f</i> _N - 5,0 MHz ± 1,92 MHz		_	1,5	2,5	۰
f _N + 5,0 MHz ± 1,92 MHz		_	0,9	1,5	۰
<i>f</i> _N + k*1,25 MHz ± 0,6144 MH			0,7	1,3	۰
Average Error Vector Magnitude ¹⁾	EVM				
<i>f</i> _N ± 1,92 MHz		_	1,3	3,0	%
<i>f</i> _N - 5,0 MHz ± 1,92 MHz		_	3,0	4,5	%
<i>f</i> _N + 5,0 MHz ± 1,92 MHz		_	2,5	4,0	%
<i>f</i> _N + k [*] 1,25 MHz ± 0,6144 MH		_	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	<u>z</u>	1,5	4	—	dB
f _N ± 17,5 MHz f _N ± 21,5 MHz		41	45	_	dB
f _N ± 21,5 MHz f _N ± 25,5 MHz		43	48		dB
f _N ± 25,5 MHz f _N ± 66,0 MHz		45	50	—	dB
$f_{\rm N} \pm 66,0$ MHz $f_{\rm N} \pm 111,0$ MHz		40	45	—	dB
Temperature coefficient of frequency	TCf		- 18		ppm/l

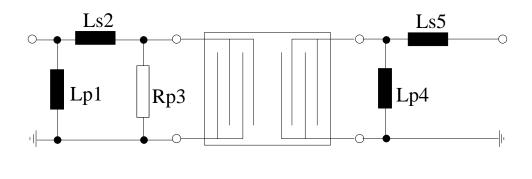
1) Phase Linearity/Average Error Vector Magnitude:where k = (-5, -4 +5)





Matching network to 50 Ohm:

(Element values depend upon PCB layout)



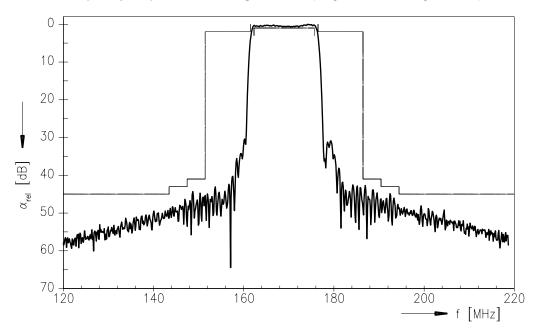
L _{p1} = 47 nH	L _{p4} = 220 nH
L _{s2} = 100 nH	L _{s5} = 82 nH
R _{p3} = 1,8 kΩ	



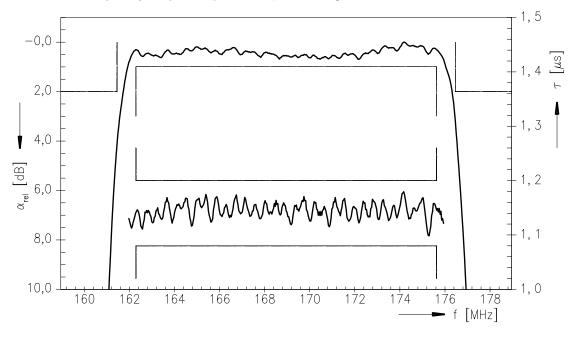
Data Sheet

Low-Loss Filter

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



Normalized frequency response (pass band), matching network



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SAW Components Low-Loss Filter B3881 168,96 MHz

Data Sheet

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