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SAW Components

Data Sheet B3883



SAW Components	B3883
Low-Loss Filter	168,96 MHz

Data Sheet

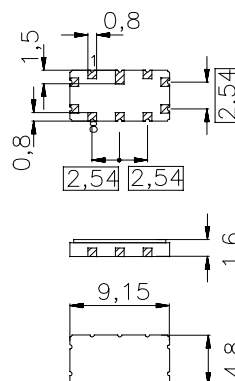
Ceramic package **QCC10B**

Features

- Low-loss IF filter
- Multichannel CDMA2000 & W-CDMA capable
- Balanced operation possible
- Hermetically sealed ceramic SMD package

Terminals

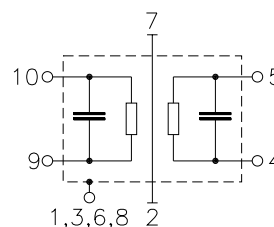
- Gold plated



Dimensions in mm, approx. weight 0,23 g

Pin configuration

10	Input
9	Input ground
5	Output
4	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
B3883	B39171-B3883-Z710	C61157-A7-A49	F61074-V8172-Z000

Electrostatic Sensitive Device (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	



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Characteristics

Operating temperature:	$T = 0 \dots +85 \text{ }^{\circ}\text{C}$
Terminating source impedance:	$Z_S = 50 \text{ }\Omega$ single ended and matching network.
Terminating load impedance:	$Z_L = 75 \text{ }\Omega$ balanced and matching network.

		min.	typ.	max.	
Nominal frequency	f_N	—	168,96	—	MHz
Minimum insertion attenuation (including matching network)	α_{\min}	—	8,0	9,5	dB
Passband width					
$\alpha_{\text{rel}} \leq 1 \text{ dB}$	$B_{1\text{dB}}$	—	14,5	—	MHz
$\alpha_{\text{rel}} \leq 5 \text{ dB}$	$B_{5\text{dB}}$	—	18,5	—	MHz
$\alpha_{\text{rel}} \leq 30 \text{ dB}$	$B_{30\text{dB}}$	—	19,5	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 6,95 \text{ MHz}$		—	1,5	2,0	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 6,95 \text{ MHz}$		—	70	100	ns
Phase Linearity¹⁾ (rms)	$\Delta\phi$				
$f_N - 5,0 \text{ MHz} \pm 1,92 \text{ MHz}$		—	1,2	2,0	$^{\circ}$
$f_N \pm 1,92 \text{ MHz}$		—	1,6	2,0	$^{\circ}$
$f_N + 5,0 \text{ MHz} \pm 1,92 \text{ MHz}$		—	1,0	2,0	$^{\circ}$
$f_N + k \cdot 1,25 \text{ MHz} \pm 0,6144 \text{ MHz}$		—	1,3	2,0	$^{\circ}$
Average Error Vector Magnitude	EVM				
$f_N - 5,0 \text{ MHz} \pm 1,92 \text{ MHz}$		—	3,0	4,0	%
$f_N \pm 1,92 \text{ MHz}$		—	3,8	4,5	%
$f_N + 5,0 \text{ MHz} \pm 1,92 \text{ MHz}$		—	3,2	4,0	%
$f_N + k \cdot 1,25 \text{ MHz} \pm 0,6144 \text{ MHz}$		—	3,3	4,0	%
Relative attenuation (relative to α_{\min})	α_{rel}				
$f_N - 17,5 \text{ MHz} \dots f_N - 66,0 \text{ MHz}$		40	43	—	dB
$f_N + 17,5 \text{ MHz} \dots f_N + 19,5 \text{ MHz}$		39	42	—	dB
$f_N + 19,5 \text{ MHz} \dots f_N + 23,5 \text{ MHz}$		33	43	—	dB
$f_N + 23,5 \text{ MHz} \dots f_N + 66,0 \text{ MHz}$		40	44	—	dB
Temperature coefficient of frequency	TC_f	—	-87	—	ppm/K

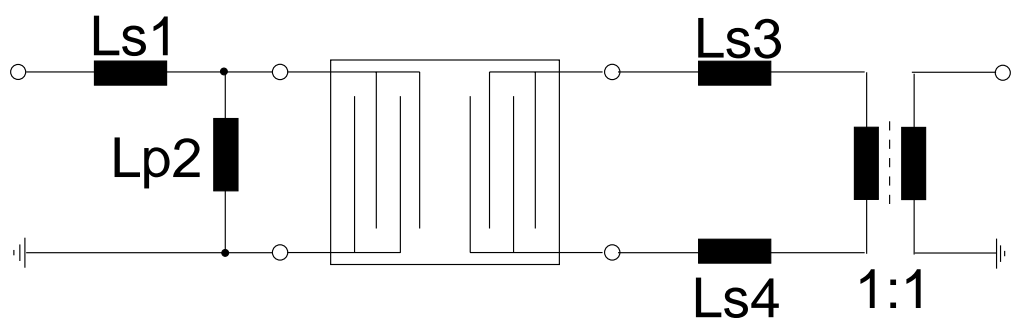
¹⁾ Phase Linearity: where $k = (-5, -4 \dots +5)$



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Matching network (Element values depend upon PCB layout):



Ls1 = 180 nH
Lp2 = 390 nH

Ls3 = 82 nH
Ls4 = 82 nH



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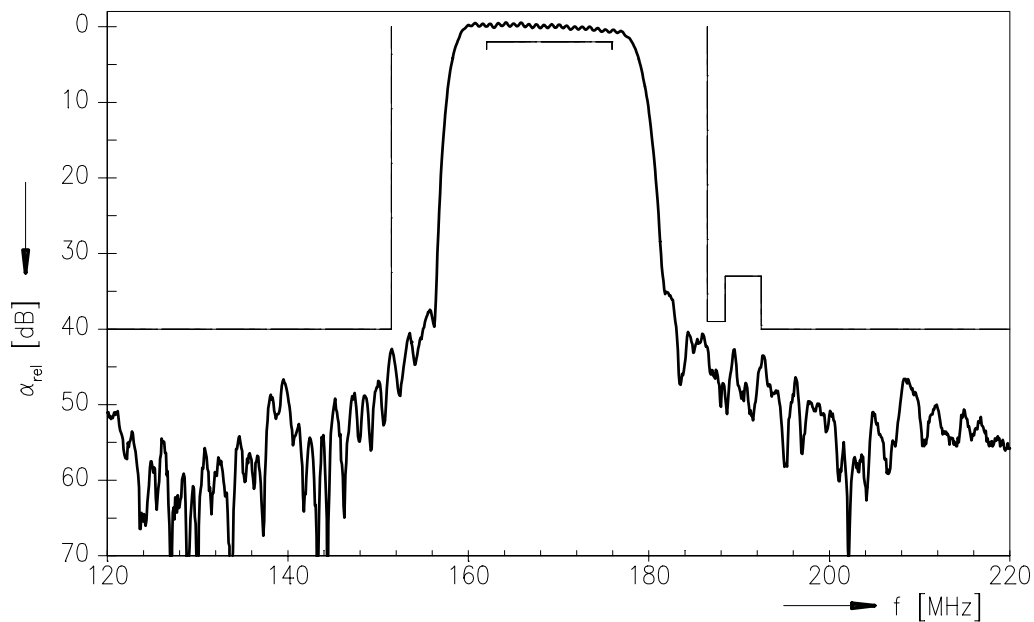
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Low-Loss Filter

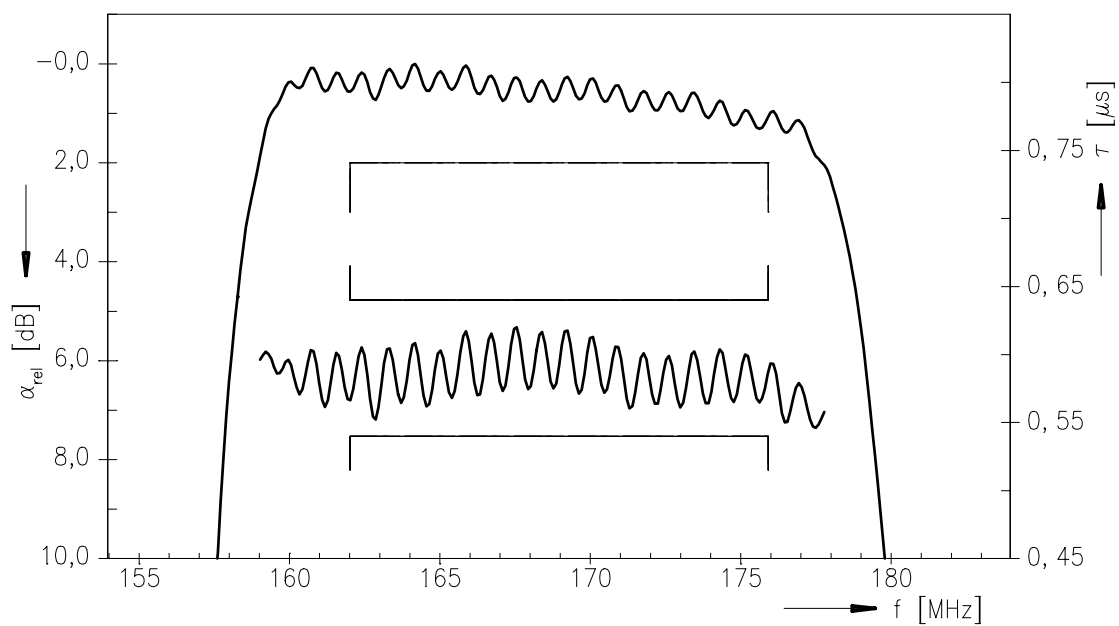
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Normalized frequency response



Normalized frequency response (pass band)





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