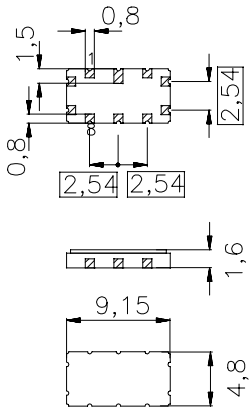
Application

- Low-loss IF filter for WCDMA base station
- Usable passband 20 MHz
- Balanced or unbalanced operation possible

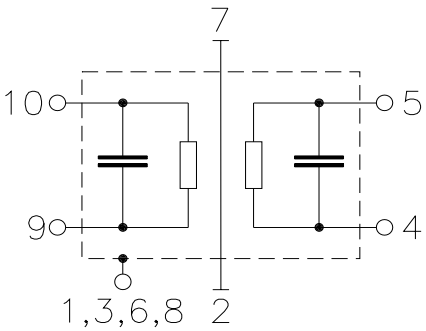
Features

- Package size 9.15 x 4.8 x 1.6 mm^3
- Package code QCC10B
- RoHS compatible
- Approx. weight 0.23 g
- Ceramic package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- Filter surface passivated



Pin configuration

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



Data sheet SMD

Characteristics

Operating temperature range: T = –30 to 85 °C
Terminating source impedance: Z_S = 50 Ω single-ended and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	161.28	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	9.2	10.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 10.0$ MHz		—	0.6	1.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 10.0$ MHz		—	25	60	ns
Absolute group delay	τ_{mean}				
mean within $f_N \pm 10.0$ MHz		407	412	417	ns
Phase Linearity (rms)	$\Delta\varphi$				
$f_N - 7.5$ MHz ± 1.92 MHz		—	0.8	2.5	deg
$f_N - 2.5$ MHz ± 1.92 MHz		—	1.0	2.5	deg
$f_N + 2.5$ MHz ± 1.92 MHz		—	1.2	2.5	deg
$f_N + 7.5$ MHz ± 1.92 MHz		—	0.9	2.5	deg
Average Error Vector Magnitude	EVM				
$f_N - 7.5$ MHz ± 1.92 MHz		—	1.0	4.5	%
$f_N - 2.5$ MHz ± 1.92 MHz		—	1.6	4.5	%
$f_N + 2.5$ MHz ± 1.92 MHz		—	1.7	4.5	%
$f_N + 7.5$ MHz ± 1.92 MHz		—	1.3	4.5	%
Relative attenuation (relative to α_{min})	α_{rel}				
10.00 MHz ... $f_N - 58.08$ MHz		40	58	—	dB
$f_N - 58.08$ MHz ... $f_N - 34.08$ MHz		50	56	—	dB
$f_N - 58.08$ MHz ... $f_N - 34.08$ MHz		50[1)]	64	—	dB_{INT}
$f_N - 34.08$ MHz ... $f_N - 20.72$ MHz		25	42	—	dB
$f_N - 20.72$ MHz ... $f_N - 17.50$ MHz		10	27	—	dB
$f_N + 17.50$ MHz ... $f_N + 20.72$ MHz		10	29	—	dB
$f_N + 20.72$ MHz ... $f_N + 34.08$ MHz		25	38	—	dB
$f_N + 34.08$ MHz ... $f_N + 58.08$ MHz		45	57	—	dB
$f_N + 34.08$ MHz ... $f_N + 58.08$ MHz		50[1)]	67	—	dB_{INT}
$f_N + 58.08$ MHz ... $f_N + 66.00$ MHz		40	66	—	dB
$f_N + 66.00$ MHz ... $f_N + 138.72$ MHz		40	65	—	dB

		min.	typ. @ 25 ˚C	max.	
Adjacent Channel Suppression	ACS				
f_N - 22.5 MHz ± 1.92 MHz		39	45	—	dB
f_N - 17.5 MHz ± 1.92 MHz		25	31	—	dB
f_N + 17.5 MHz ± 1.92 MHz		23	29	—	dB
f_N + 22.5 MHz ± 1.92 MHz		37	43	—	dB
Temperature coefficient of frequency	TC_f	—	–87	—	ppm/K

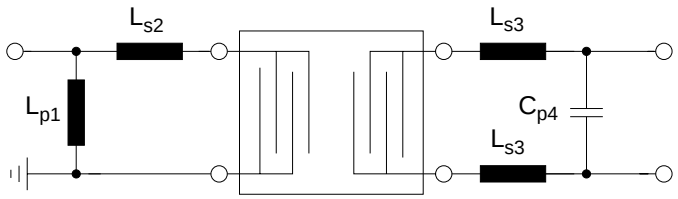
1) dB_{INT} is integrated rejection (see formula below)

$$dB_{INT} = \frac{\sum_{2}^{N} \frac{Loss(F_{n-1}) + Loss(F_n)}{2} \times (F_n - F_{n-1})}{F_N - F_1}$$

where $Loss(F_n) = 10^{(S_{21}indB)/20}$

N = Number of frequency, insertion pairs

Matching network, 50 Ω Input, 200 Ω Output



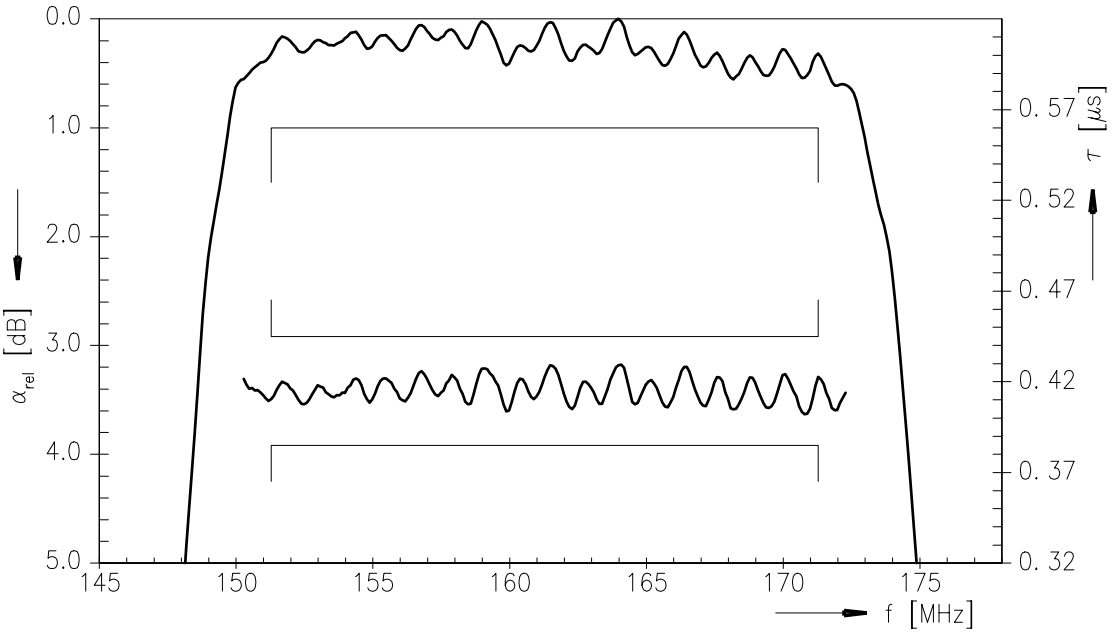
L_{p1} =39 nH
L_{s2} =68 nH
L_{s3} =68 nH
C_{p4}=12 pF

Maximum ratings

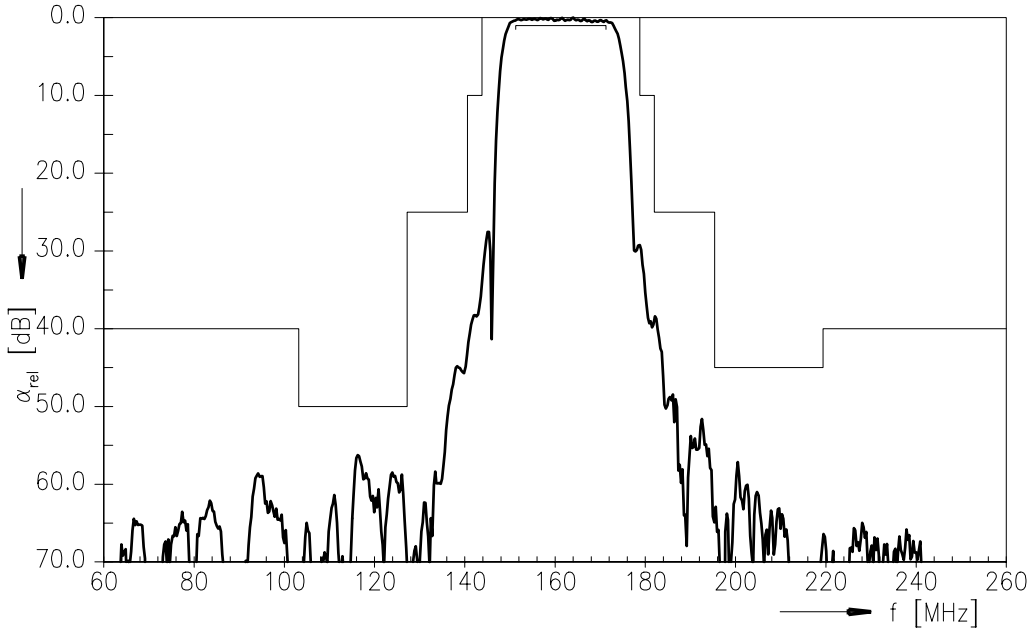
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200[1)]	V	machine model, 1 pulse
Input power	P_{IN}	10	dBm	

1) acc. to J-STD22A-0115A (machine model, 1 pulse +/-).

Transfer function



Transfer function (wideband



References

Type	B5051
Ordering code	B39161-B5051-Z710
Marking and package	C61157-A7-A49
Packaging	F61074-V8172-Z000
Date codes	L_1126
S-parameters	
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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