SAW Components

SAW IF filter

W-CDMA

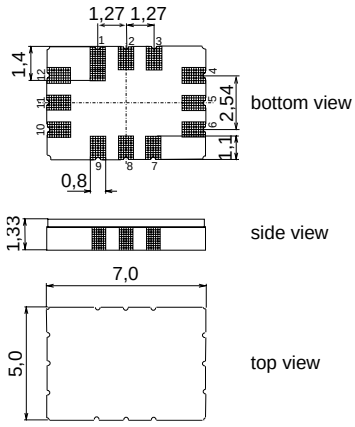
Series/type:	**B3898**
Ordering code:	**B39171-B3898-H810**
Date:	Jun 12, 2006
Version:	2.1

Application

- High performance IF bandpass filter for W-CDMA
- Usable passband 8.84 MHz

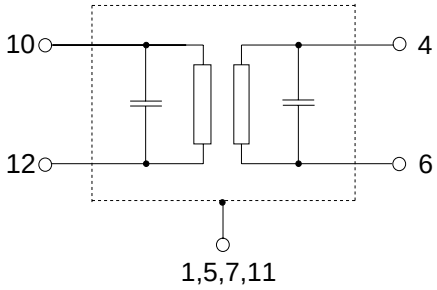
Features

- Package size 7.0 x 5.0 x 1.33 mm^3
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.2 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

■	10	Input
■	12	Input ground
■	4, 6	Balanced Output
■	2, 3, 8, 9	To be grounded
■	1, 5, 7, 11	Case ground



Data Sheet SMD

Characteristics

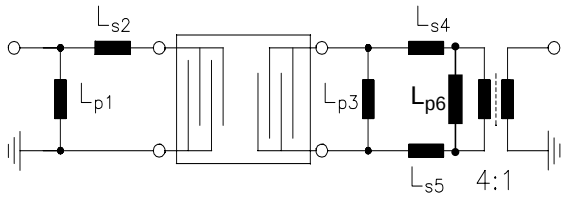
Operating temperature range: T = –10 to 85 °C
Terminating source impedance: Z_S = 50 Ω single ended and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network
Group delay aperture: 100 kHz

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	172.8	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	10.6	12.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 4.42$ MHz		—	0.8	1.5	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 4.42$ MHz		—	70	200	ns
Group delay					
@ f_N	τ	—	780	1000	ns
VSWR					
$f_N \pm 4.42$ MHz		—	1.3:1	3.0:1	
Phase ripple (p-p)	$\Delta\varphi$				
$f_N \pm 4.42$ MHz		—	10	13	°
Pass bandwidth	$B_{1.5dB}$				
$\alpha_{rel} \leq 1.5$ dB		8.84	9.2	—	MHz
Adjacent channel selectivity	*ACS*	17	22	—	dB
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm 8.0$ ... $f_N \pm 11.0$ MHz		27	32	—	dB
$f_N \pm 11.0$ ... $f_N \pm 25.0$ MHz		35	45	—	dB
$f_N \pm 25.0$ ... $f_N \pm 34.0$ MHz		45	60	—	dB
$f_N \pm 34.0$ ... $f_N \pm 100$ MHz		55	70	—	dB
Impedance at f_N (without matching)					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	646 || 13.4	—	Ω || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	932 || 10.4	—	Ω || pF
Temperature coefficient of frequency	TC_f	—	– 18	—	ppm/K

Maximum ratings

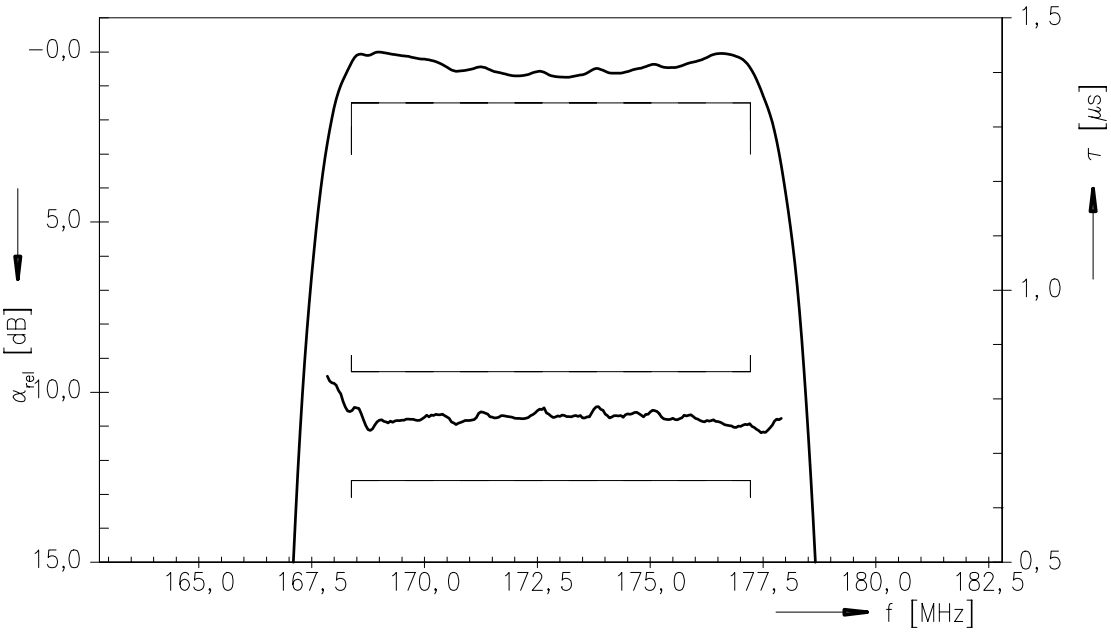
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+125	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200	V	HBM, 1 pulse
Input power	P_{IN}	10	dBm	

Matching network to 50 Ω:(element values depend on PCB layout)

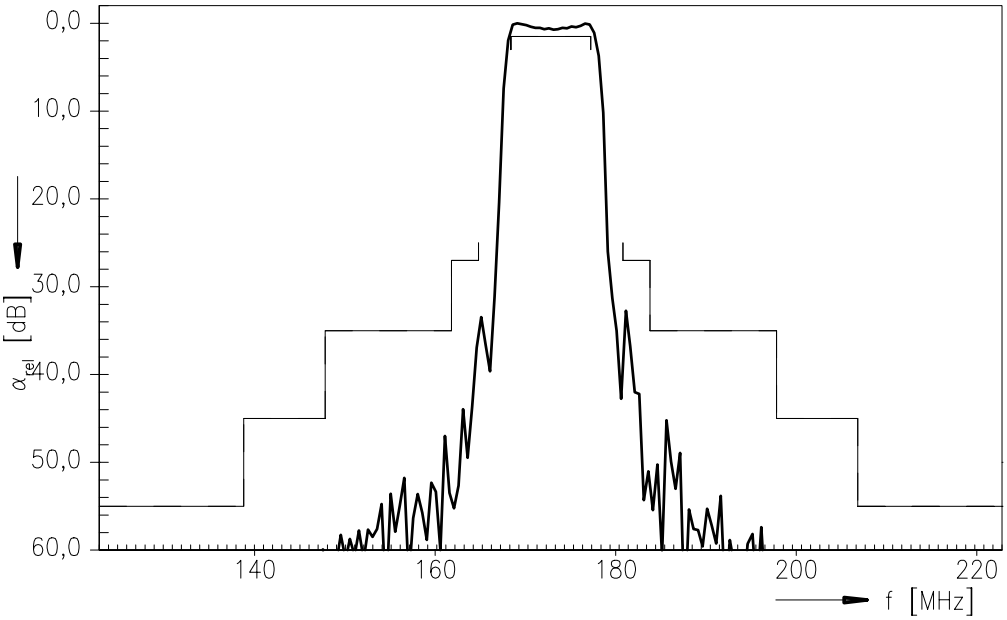


L_{p1} = 22 nH L_{s2} = 33 nH L_{p3} = 120 nH
L_{s4} = 82 nH L_{s5} = 82 nH L_{p6} = 220 nH

Transfer function



Transfer function (wideband)



References

Type	B3898
Ordering code	B39171-B3898-H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-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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Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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