



SAW Components

SAW IF filter

W-CDMA

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



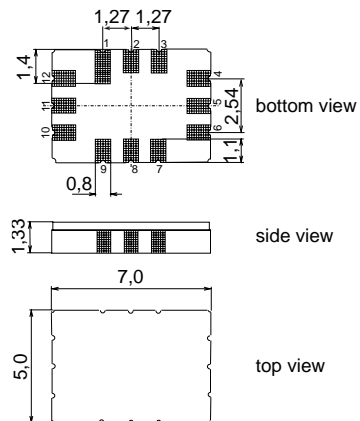
Application

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



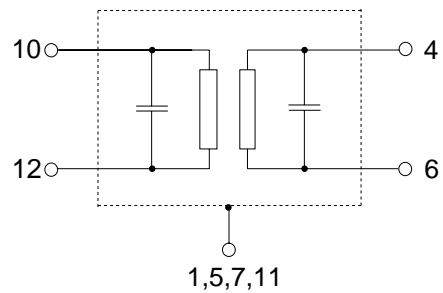
Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.2 g
- Ceramic package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (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



Characteristics

Operating temperature range: $T = -10$ to 85 °C
 Terminating source impedance: $Z_S = 50 \Omega$ single ended and matching network
 Terminating load impedance: $Z_L = 200 \Omega$ 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) $f_N \pm 4.42$ MHz	$\Delta\alpha$	—	0.8	1.5	dB
Group delay ripple (p-p) $f_N \pm 4.42$ MHz	$\Delta\tau$	—	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) $f_N \pm 4.42$ MHz	$\Delta\phi$	—	10	13	°
Pass bandwidth $\alpha_{rel} \leq 1.5$ dB	$B_{1.5dB}$	8.84	9.2	—	MHz
Adjacent channel selectivity	ACS	17	22	—	dB
Relative attenuation (relative to α_{min}) $f_N \pm 8.0$... $f_N \pm 11.0$ MHz	α_{rel}	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: $Z_{IN} = R_{IN} \parallel C_{IN}$ Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	646 13.4 932 10.4	—	$\Omega \parallel$ pF $\Omega \parallel$ pF
Temperature coefficient of frequency	TC_f	—	-18	—	ppm/K



SAW Components	B3898
SAW IF filter	172.80 MHz

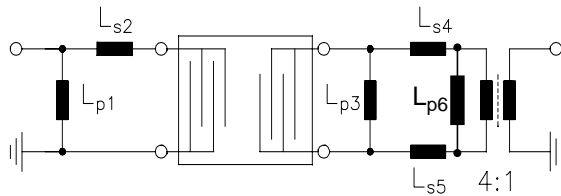
Data Sheet



Maximum ratings

Operable temperature range	T	-40/+85	°C	HBM, 1 pulse
Storage temperature range	T _{stq}	-40/+125	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	200	V	
Input power	P _{IN}	10	dBm	

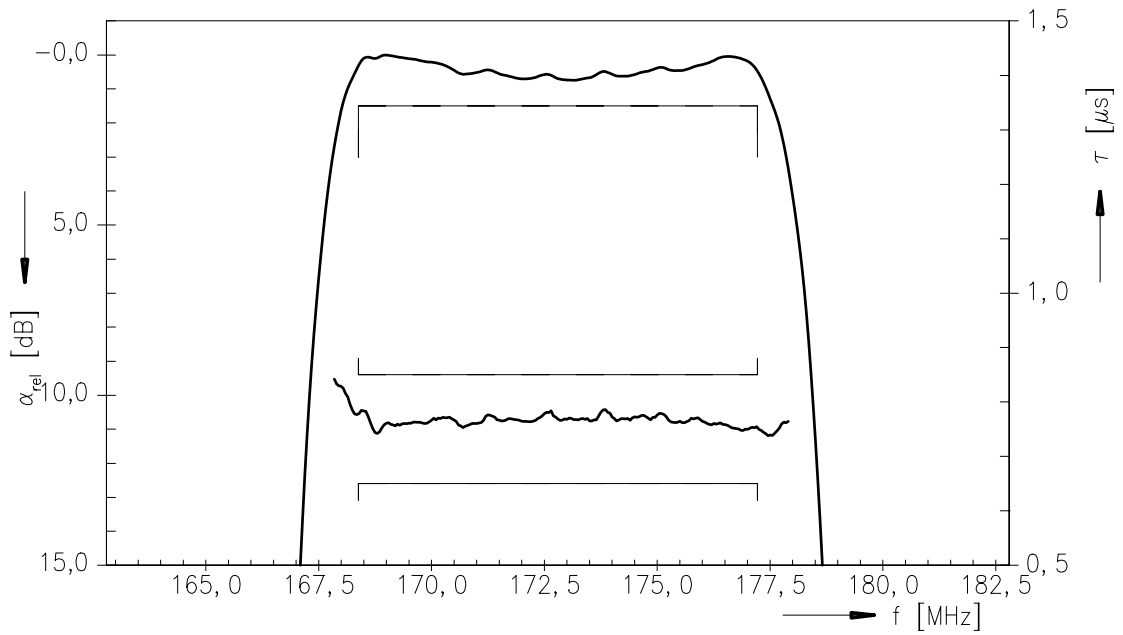
Matching network to 50 Ω:(element values depend on PCB layout)



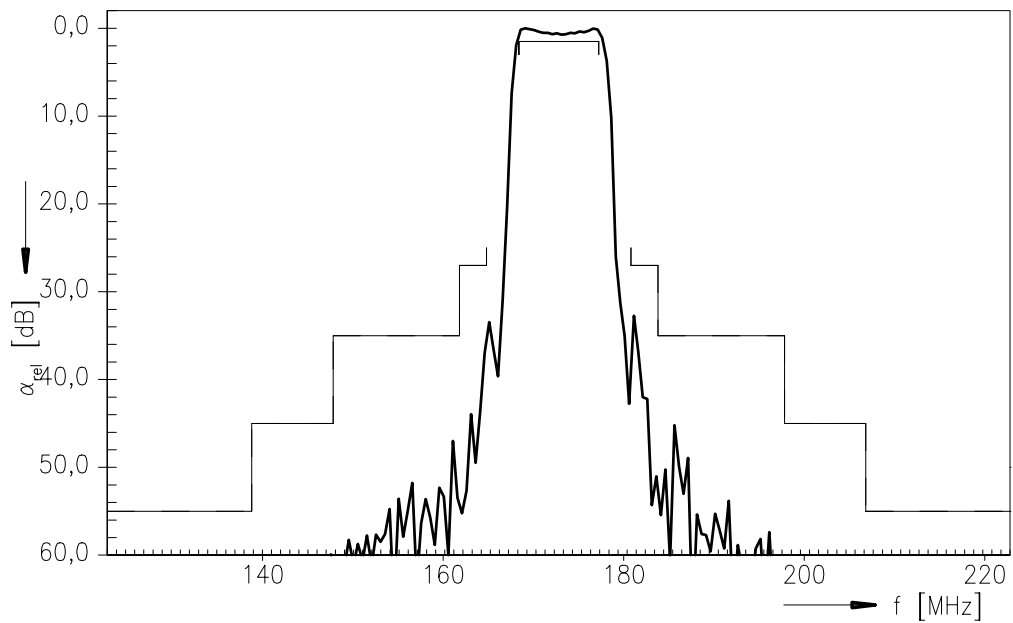
$$\begin{aligned}
 L_{p1} &= 22 \text{ nH} & L_{s2} &= 33 \text{ nH} & L_{p3} &= 120 \text{ nH} \\
 L_{s4} &= 82 \text{ nH} & L_{s5} &= 82 \text{ nH} & L_{p6} &= 220 \text{ nH}
 \end{aligned}$$



Transfer function



Transfer function (wideband)





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B3898

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172.80 MHz

Data Sheet



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."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

**Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY**

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