



SAW Components

SAW IF filter

W-CDMA

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



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B3898

SAW IF filter

172.80 MHz

Data Sheet



Characteristics

Operating temperature range: $T = -10$ to $85\text{ }^{\circ}\text{C}$
 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) $f_N \pm 4.42\text{ MHz}$	$\Delta\alpha$	—	0.8	1.5	dB
Group delay ripple (p-p) $f_N \pm 4.42\text{ MHz}$	$\Delta\tau$	—	70	200	ns
Group delay @ f_N	τ	—	780	1000	ns
VSWR $f_N \pm 4.42\text{ MHz}$		—	1.3:1	3.0:1	
Phase ripple (p-p) $f_N \pm 4.42\text{ MHz}$	$\Delta\varphi$	—	10	13	°
Pass bandwidth $\alpha_{\text{rel}} \leq 1.5\text{ dB}$	$B_{1.5\text{dB}}$	8.84	9.2	—	MHz
Adjacent channel selectivity	ACS	17	22	—	dB
Relative attenuation (relative to α_{\min})	α_{rel}				
$f_N \pm 8.0 \dots f_N \pm 11.0\text{ MHz}$		27	32	—	dB
$f_N \pm 11.0 \dots f_N \pm 25.0\text{ MHz}$		35	45	—	dB
$f_N \pm 25.0 \dots f_N \pm 34.0\text{ MHz}$		45	60	—	dB
$f_N \pm 34.0 \dots f_N \pm 100\text{ MHz}$		55	70	—	dB
Impedance at f_N (without matching)					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	646 13.4	—	$\Omega \parallel \text{pF}$
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	932 10.4	—	$\Omega \parallel \text{pF}$
Temperature coefficient of frequency	TC_f	—	-18	—	ppm/K



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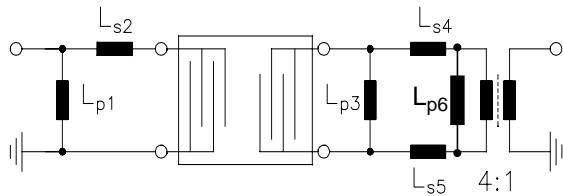
Data Sheet



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	

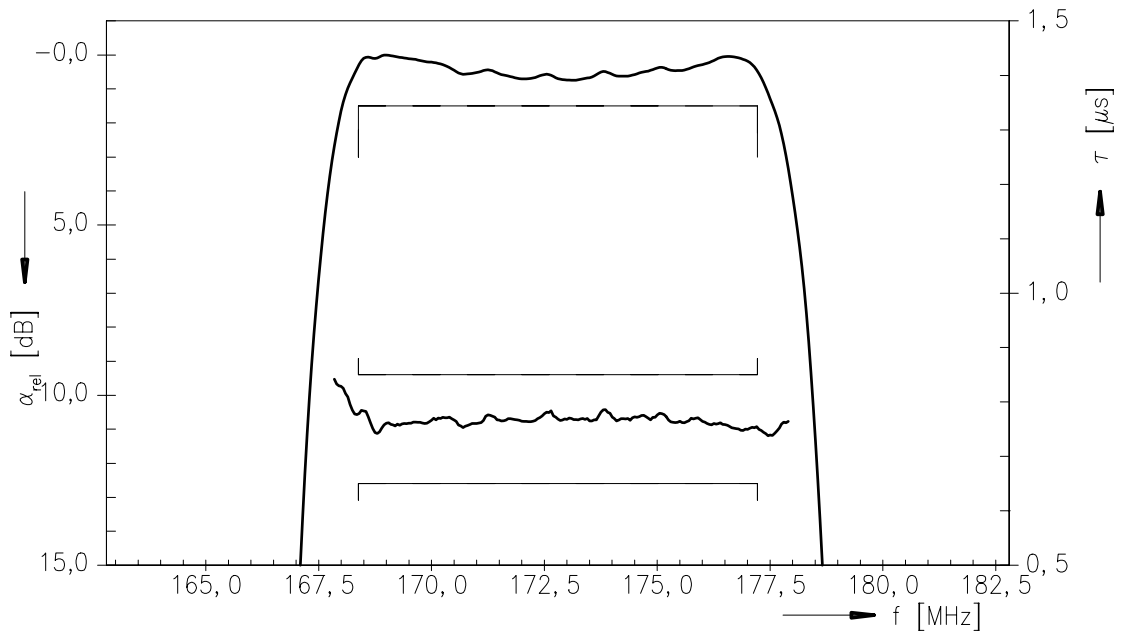
Matching network to 50 Ω:(element values depend on PCB layout)



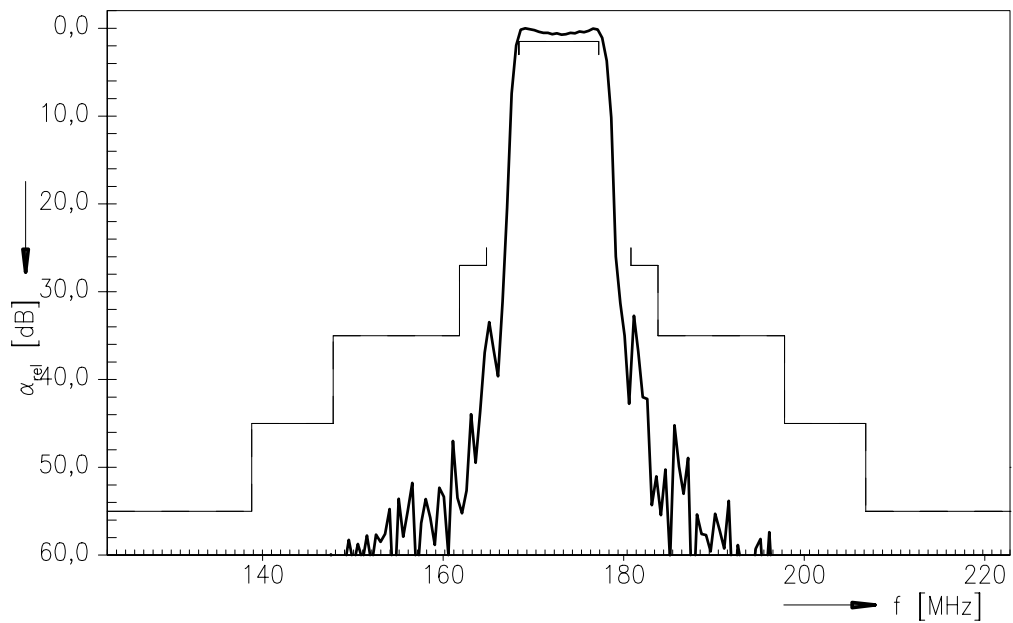
$$\begin{aligned}
 L_{p1} &= 22 \text{ nH} & L_{s2} &= 33 \text{ nH} & L_{p3} &= 120 \text{ nH} \\
 L_{s4} &= 82 \text{ nH} & L_{s5} &= 82 \text{ nH} & L_{p6} &= 220 \text{ nH}
 \end{aligned}$$



Transfer function



Transfer function (wideband)





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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 .

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