SAW Components

SAW IF filter

CATV, pilot tone

Series/type: **LP98C**
Ordering code:

Date: Aug 07, 2008
Version: 1.0

Revision History: Changes compared to previous iteration issue

ISSUE	ORIGINATOR	DETAIL SPEC CHANGES	DATE
DGLP98A01			
0.1	T. Gärtner	design goal	07.04.06
LP98B			
1.0	T. Gärtner	preliminary data for first samples, matching proposal added	04.08.06
LP98C			
1.0	T. Gärtner	chip code changed, electrical performance and specification identical to LP98B	07.08.08

Preliminary Data

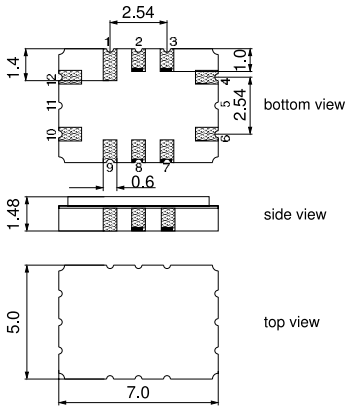
SMD

Application

- Pilot tone filter for CATV

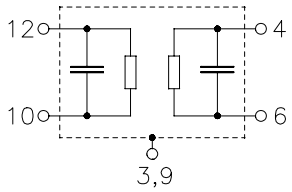
Features

- Package size 7.0 x 5.0 x 1.48 mm^3
- Package code QCC12C
- 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	Output
■	6	Output ground
■	1, 2, 7, 8	To be grounded
■	3, 9	Case ground



Preliminary Data

SMD

Characteristics

Operating temperature range: T = –25 to 85 °C
Terminating source impedance: Z_S = 50 Ω and matching network
Terminating load impedance: Z_L = 50 Ω and matching network

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	710.25	711.0	711.75	MHz
Nominal frequency	f_N	—	711.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	8.8	10.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 0.75$ MHz		—	0.3	1.5	dB
Passband width (p-p)					
$\alpha_{rel} \leq$ 1.0 dB	$B_{1\ dB}$	1.5	3.1	—	MHz
$\alpha_{rel} \leq$ 3.0 dB	$B_{3\ dB}$	2.6	3.7	—	MHz
$\alpha_{rel} \leq$ 35.0 dB	$B_{35\ dB}$	—	6.6	8.0	MHz
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 4.0 ... $f_N \pm$ 5.0 MHz		25	43	—	dB
$f_N \pm$ 5.0 ... $f_N \pm$ 40.0 MHz		35	43	—	dB
5.00 MHz... f_N – 40.0 MHz		45	50	—	dB
f_N + 40.00 MHz ... 862.0 MHz		45	50	—	dB
Temperature coefficient of frequency[1]	TC_f	—	–0.036	—	ppm/K²
Turnover temperature	T_0	—	30	—	°C

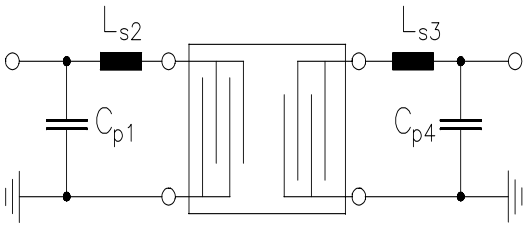
[1] Temperature dependance of f_c: $f_c(T_A) = f_c(T_0)\ (1 + TC_f(T_A - T_0)^2)$

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}	5	dBm	

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

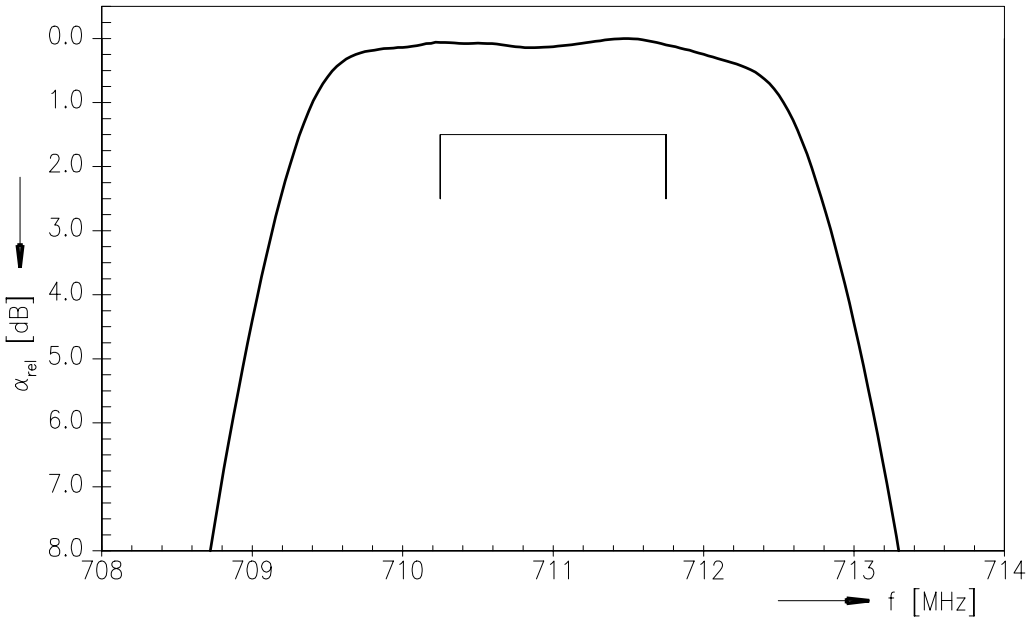
Matching network to 50 Ω



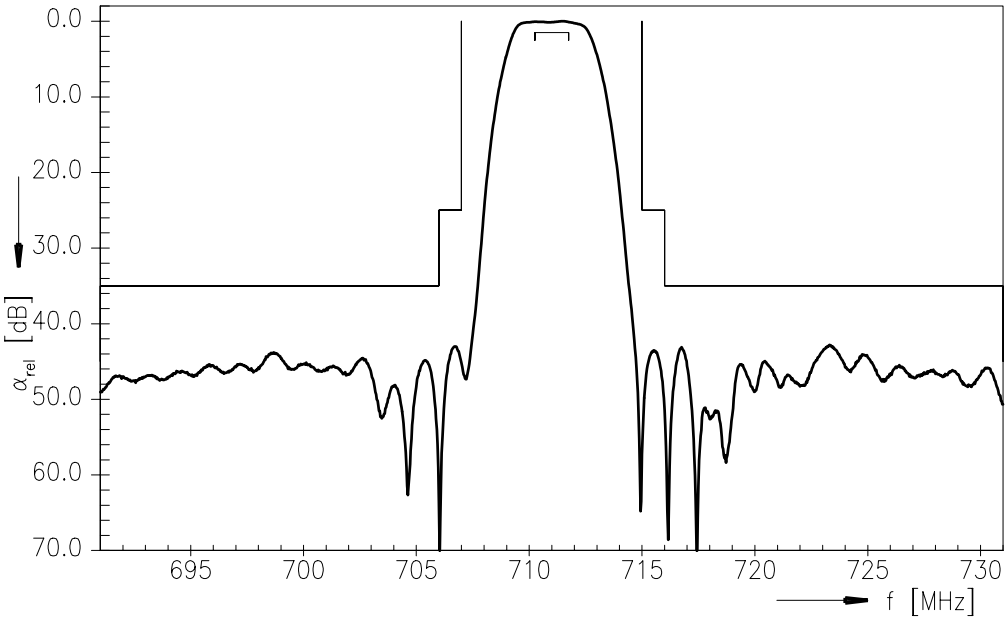
C_{p1} = 9.4 pF
L_{s2} = not used
L_{s3} = not used
C_{p4} = 8.2 pF

Element values depend upon PCB layout.

Transfer function



Transfer function (wideband)



References

Type	LP98C
Ordering code	
Marking and package	C61157-A7-A95
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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Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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