



## **SAW Components**

### **SAW IF filter**

CATV, pilot tone

<b>Series/type:</b>	<b>LP98C</b>
<b>Ordering code:</b>	
<b>Date:</b>	Aug 07, 2008
<b>Version:</b>	1.0



**SAW Components**

**LP98C**

**SAW IF filter**

**711.0 MHz**

**Preliminary Data**



**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



SAW Components

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**SMD**

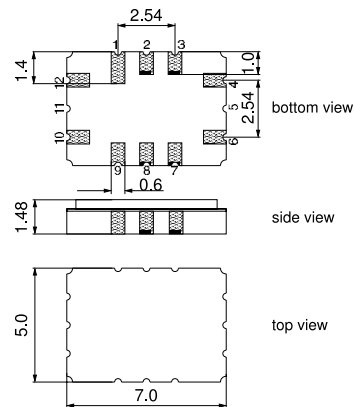
**Application**

- Pilot tone filter for CATV



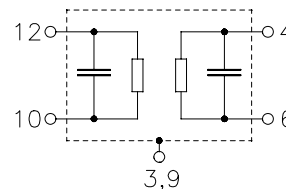
**Features**

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



Please read *cautions and warnings and important notes* at the end of this document.



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**Characteristics**

Operating temperature range:	T = -25 to 85 °C
Terminating source impedance:	Z <sub>S</sub> = 50 Ω and matching network
Terminating load impedance:	Z <sub>L</sub> = 50 Ω and matching network

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	710.25	711.0	711.75	MHz
<b>Nominal frequency</b>	f <sub>N</sub>	—	711.0	—	MHz
<b>Minimum insertion attenuation</b> (including matching network)	α <sub>min</sub>	—	8.8	10.0	dB
<b>Amplitude ripple (p-p)</b> f <sub>N</sub> ± 0.75 MHz	Δα	—	0.3	1.5	dB
<b>Passband width (p-p)</b>					
α <sub>rel</sub> ≤ 1.0 dB	B <sub>1 dB</sub>	1.5	3.1	—	MHz
α <sub>rel</sub> ≤ 3.0 dB	B <sub>3 dB</sub>	2.6	3.7	—	MHz
α <sub>rel</sub> ≤ 35.0 dB	B <sub>35 dB</sub>	—	6.6	8.0	MHz
<b>Relative attenuation (relative to α<sub>min</sub>)</b>	α <sub>rel</sub>				
f <sub>N</sub> ± 4.0 ... f <sub>N</sub> ± 5.0 MHz		25	43	—	dB
f <sub>N</sub> ± 5.0 ... f <sub>N</sub> ± 40.0 MHz		35	43	—	dB
5.00 MHz... f <sub>N</sub> - 40.0 MHz		45	50	—	dB
f <sub>N</sub> + 40.00 MHz ... 862.0 MHz		45	50	—	dB
<b>Temperature coefficient of frequency<sup>1)</sup></b>	TC <sub>f</sub>	—	-0.036	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>	T <sub>0</sub>	—	30	—	°C

1) Temperature dependence of f<sub>C</sub>: f<sub>C</sub>(T<sub>A</sub>) = f<sub>C</sub>(T<sub>0</sub>) (1 + TC<sub>f</sub>(T<sub>A</sub> - T<sub>0</sub>)<sup>2</sup>)

**Maximum ratings**

Operable temperature range	T	-40/+85	°C	machine model, 1 pulse
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	0	V	
ESD voltage	V <sub>ESD</sub>	200 <sup>1)</sup>	V	
Input power	P <sub>IN</sub>	5	dBm	

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



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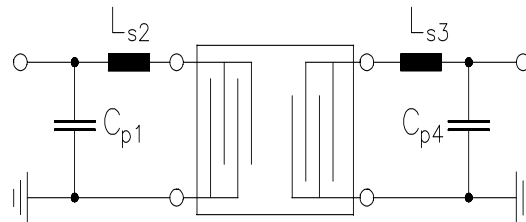
SAW IF filter

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Preliminary Data

**SMD**

Matching network to 50  $\Omega$



$$C_{p1} = 9.4 \text{ pF}$$

$$L_{s2} = \text{not used}$$

$$L_{s3} = \text{not used}$$

$$C_{p4} = 8.2 \text{ pF}$$

Element values depend upon PCB layout.



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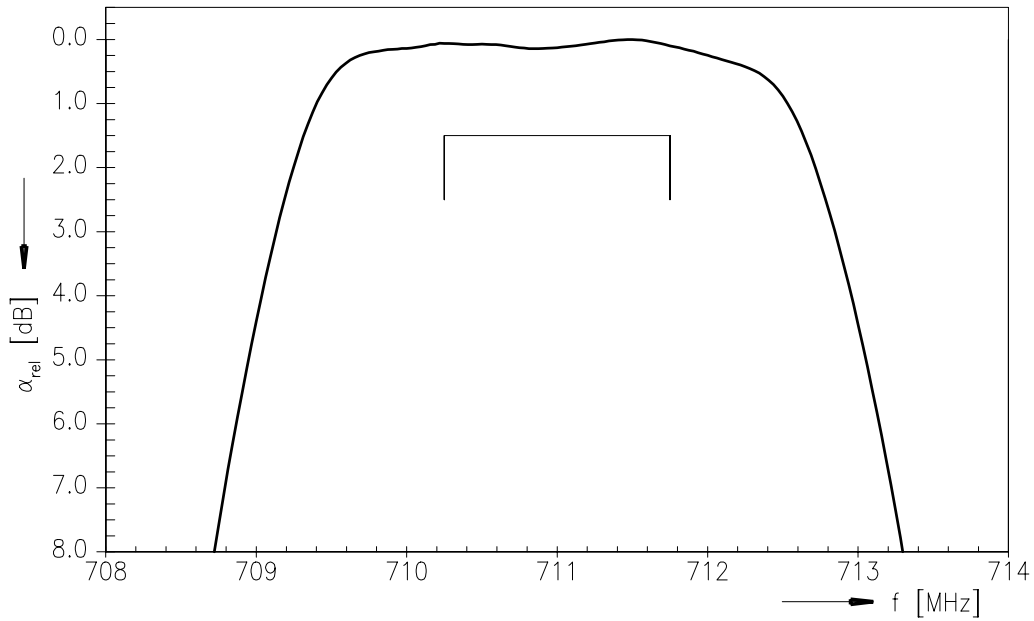
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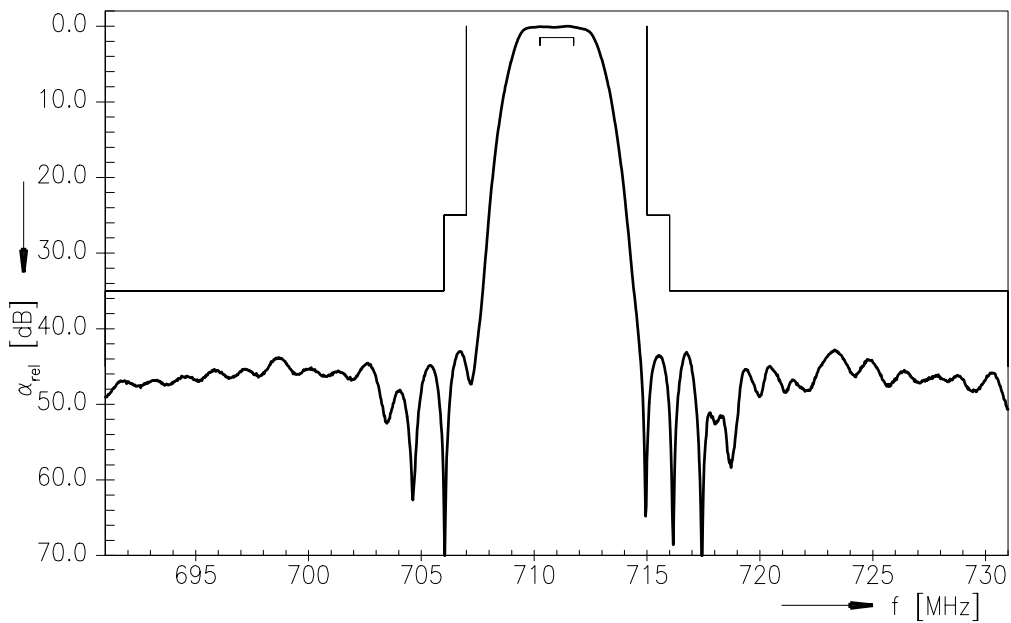
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Transfer function



Transfer function (wideband)



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<b>Preliminary Data</b>	<b>SMD</b>

## References

<b>Type</b>	LP98C
<b>Ordering code</b>	
<b>Marking and package</b>	C61157-A7-A95
<b>Packaging</b>	F61074-V8170-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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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