



## **SAW Components**

### **SAW GPS filter**

<b>Series/type:</b>	<b>B9444</b>
<b>Ordering code:</b>	<b>B39162B9444M410</b>
<b>Date:</b>	<b>March 19, 2009</b>
<b>Version:</b>	<b>2.1</b>



Data Sheet



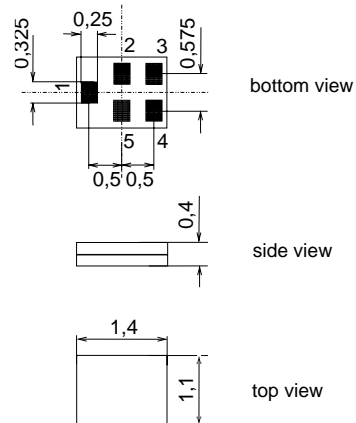
Application

- Low-loss RF filter for mobile telephone GPS systems
- Filter impedance 50 Ω
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- High out of band selectivity
- Low amplitude ripple
- Usable passband 2.0 MHz



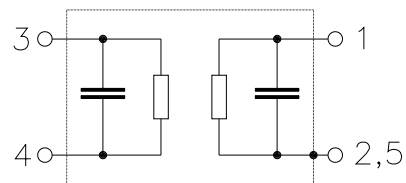
Features

- Package size 1.4 x 1.1 x 0.4 mm<sup>3</sup>
- Package code QCS51
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

- 1 Input unbalanced
- 4 Output unbalanced
- 2,3,5 To be grounded





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**Characteristics of Filter**

Temperature range for specification:  $T = -30\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		LT57B			
		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	0.9	1.3	dB
1574.42 ... 1576.42 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.05	0.6	
1574.42 ... 1576.42 MHz					
<b>Input and Output VSWR</b>		—	1.25	1.8	
1574.42 ... 1576.42 MHz					
<b>Attenuation</b>	$\alpha$				
0.1 ... 880.0 MHz		42	46	—	dB
880.0 ... 915.0 MHz		42	46	—	dB
915.0 ... 1453.0 MHz		40	46	—	dB
1453.0 ... 1525.0 MHz		37	50	—	dB
1625.0 ... 1710.0 MHz		40	52	—	dB
1710.0 ... 2050.0 MHz		45	50	—	dB
2050.0 ... 2250.0 MHz		40	50	—	dB
2250.0 ... 2400.0 MHz		35	41	—	dB
2400.0 ... 2700.0 MHz		40	49	—	dB
2700.0 ... 6000.0 MHz		30	35	—	dB



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**Maximum ratings of Filter**

Operable temperature range	T	-30/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	3	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model, 10 pulses
Input power at				source/load impedance 50Ω/50Ω
824 ... 960, 1710 ... 1980 MHz	P <sub>IN</sub>	23 <sup>2)</sup>	dBm	cw
2400 ... 2500 MHz	P <sub>IN</sub>	10	dBm	cw
5100 ... 5900 MHz	P <sub>IN</sub>	0	dBm	cw

<sup>1)</sup> acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

<sup>2)</sup> 10000 h, 55 °C



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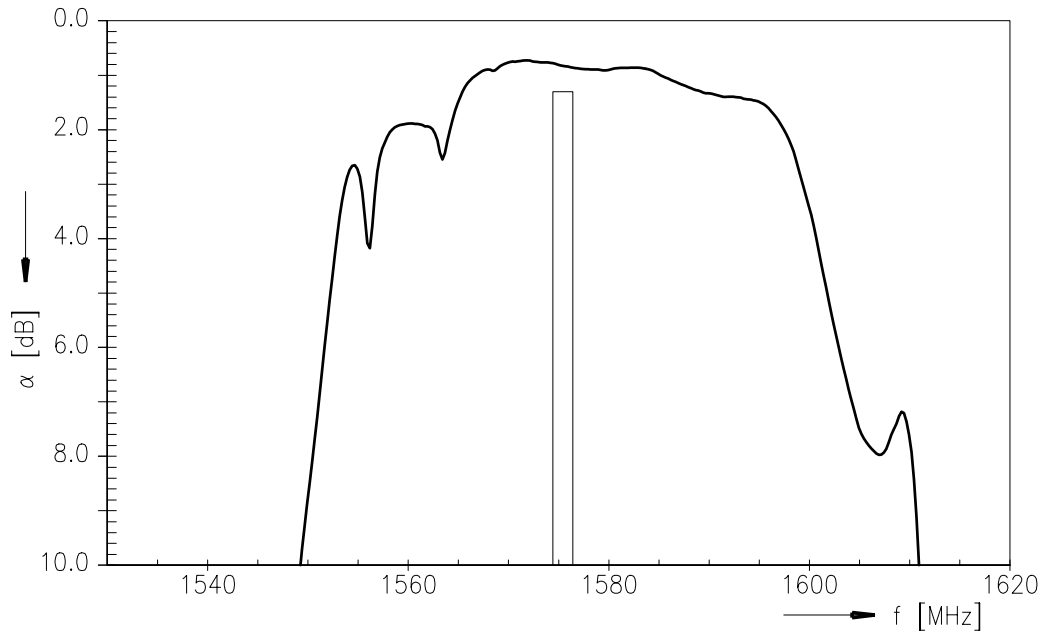
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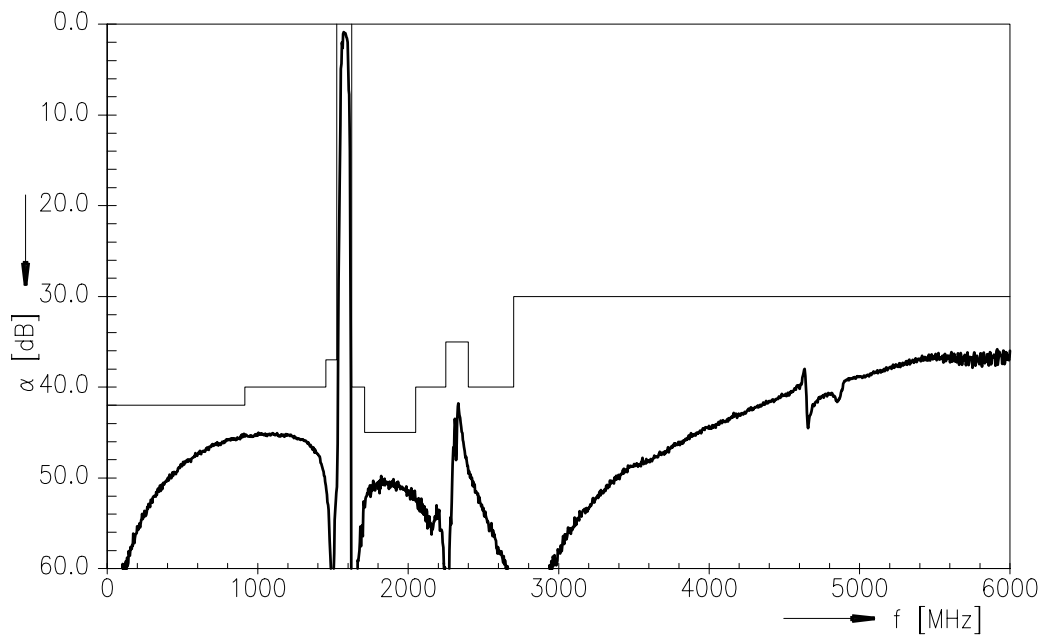
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Transfer function (narrow band)



Transfer function (wide band)



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



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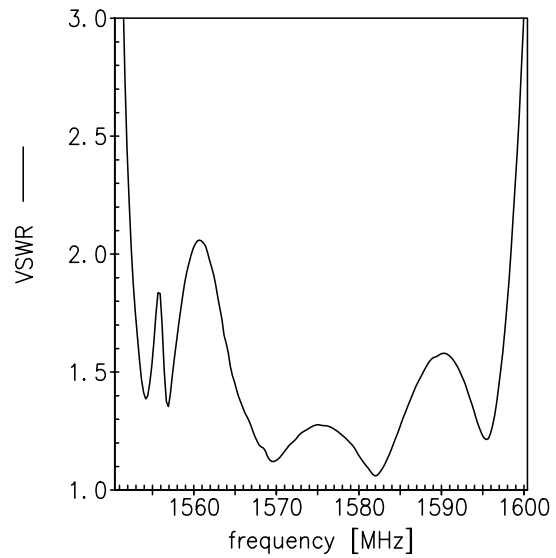
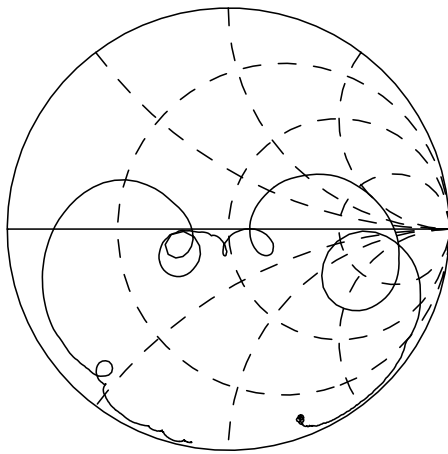
1575.42 MHz

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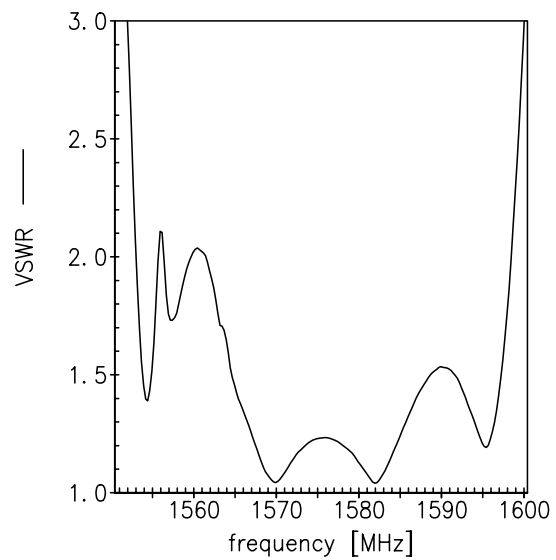
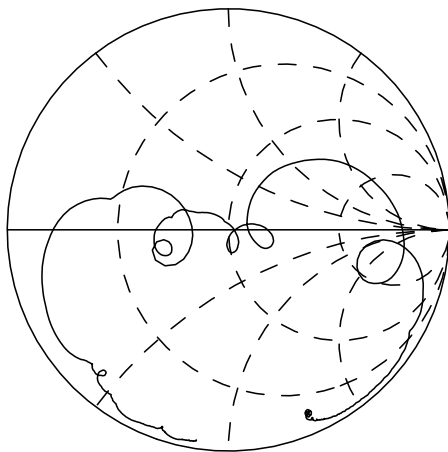


Smith chart / VSWR

$S_{11}$  function



$S_{22}$  function



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## References

Type	B9444
Ordering code	B39162B9444M410
Marking and package	C61157-A8-A3
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B9444_NB_UN.s2p B9444_WB_UN.s2p See file header for pin/port assignments.
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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.

For further information please contact your local EPCOS sales office or visit our webpage at [www.epcos.com](http://www.epcos.com).

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