



## SAW Components

SAW filter

GPS

<b>Series/type:</b>	<b>B9415</b>
<b>Ordering code:</b>	<b>B39162B9415K610</b>
Date:	January 23, 2009
Version:	2.3

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SAW Components

B9415

SAW filter

1575.42 MHz

Data sheet

SMD

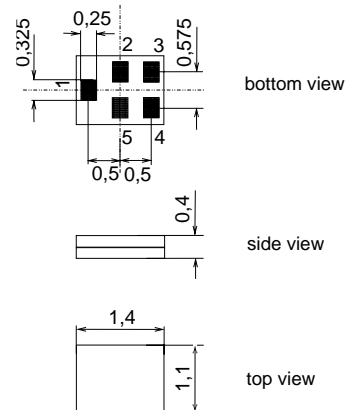
### Application

- Low-loss RF filter for mobile telephone GPS systems
- Filter impedance 50  $\Omega$
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 2.0 MHz



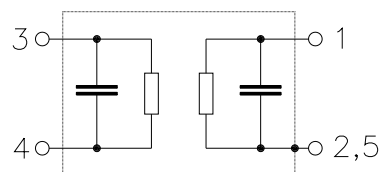
### Features

- Package size 1.4 x 1.1 x 0.4 mm<sup>3</sup>
- Package code QCS5U
- 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



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

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Characteristics

Temperature range for specification:  $T = -40\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	0.6	1.0 <sup>1)</sup>	dB
1574.42 ... 1576.42 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.0	0.3	dB
1574.42 ... 1576.42 MHz					
<b>Input VSWR</b>		—	1.2	1.6 <sup>2)</sup>	
1574.42 ... 1576.42 MHz					
<b>Output VSWR</b>		—	1.2	1.6 <sup>3)</sup>	
1574.42 ... 1576.42 MHz					
<b>Attenuation</b>	$\alpha$				
500.0 ... 894.0 MHz		16	18	—	dB
894.0 ... 1500.0 MHz		15	17	—	dB
1650.0 ... 4000.0 MHz		17	19	—	dB
4000.0 ... 6000.0 MHz		15	20	—	dB

1) 0.9dB max. at -30 °C ... 75 °C

2) 1.5 max. at -30 °C ... 75 °C

3) 1.5 max. at -30 °C ... 75 °C

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**Maximum ratings**

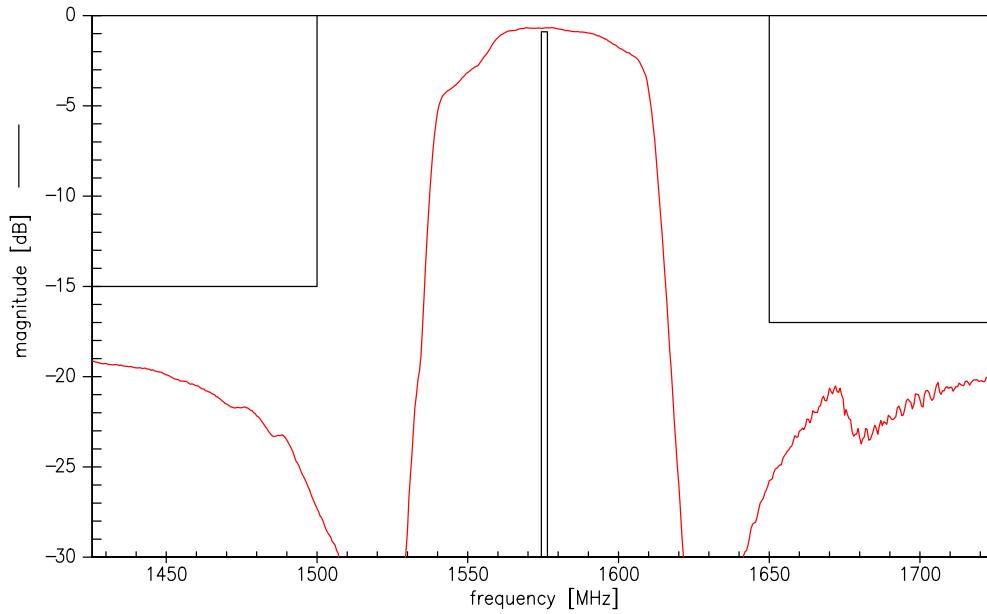
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	3	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model, 10 pulses
Input power at				source/load impedance 50Ω/50Ω
1574.42 ... 1576.42 MHz	P <sub>IN</sub>	10	dBm	cw
2400 ... 2483.5 MHz	P <sub>IN</sub>	20	dBm	cw
824...960, 1710...2170 MHz	P <sub>IN</sub>	25	dBm	cw

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

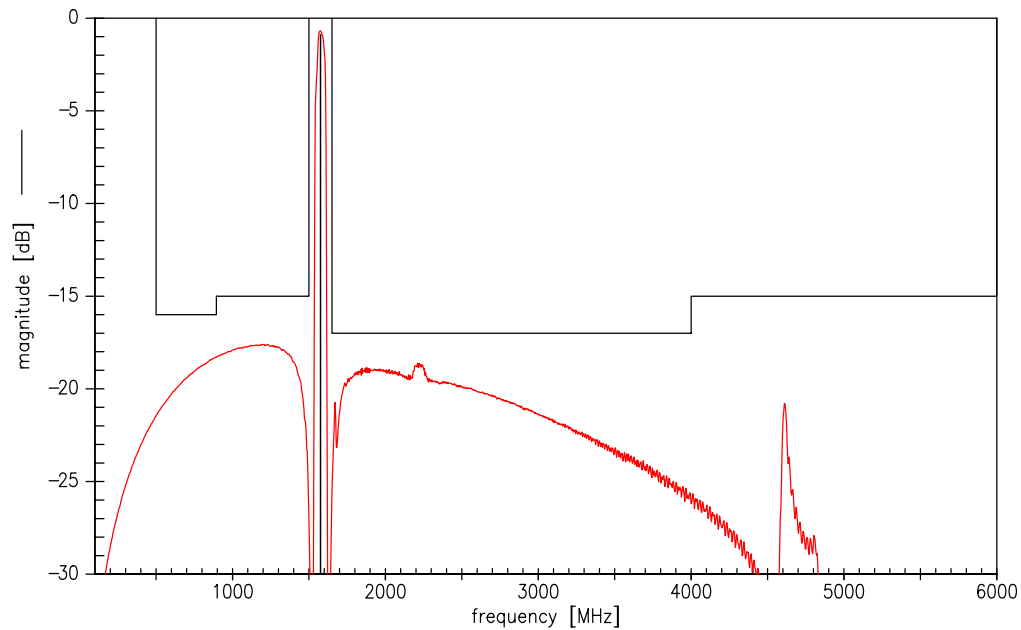
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Transfer function (narrow band)



Transfer function (wide band)



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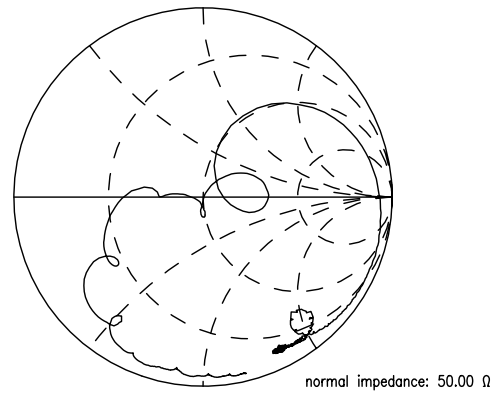
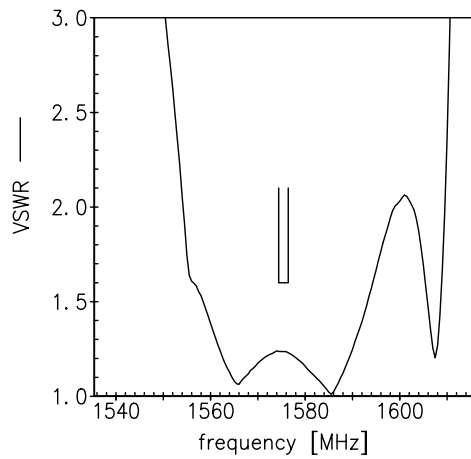


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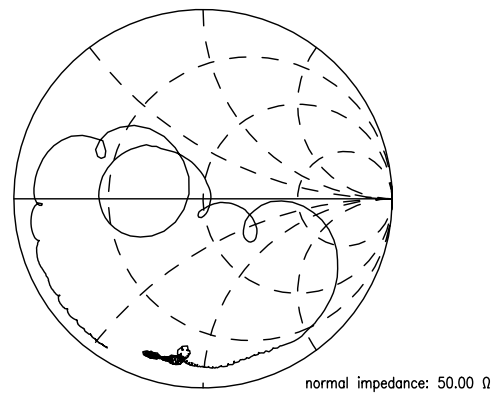
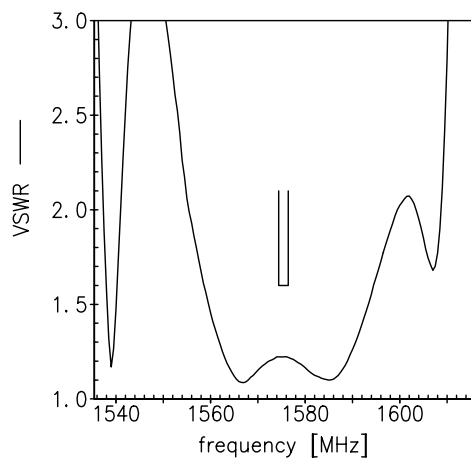


Smith charts

S<sub>11</sub> function



S<sub>22</sub> function



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## References

<b>Type</b>	B9415
<b>Ordering code</b>	B39162B9415K610
<b>Marking and package</b>	C61157-A8-A14
<b>Packaging</b>	F61074-V8237-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9415_NB.s2p B9415_WB.s2p "See file header for port/pin assignment table"
<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."
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.

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

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