



## **SAW Components**

**SAW filter**

GPS

**Series/type:** B9416

**Ordering code:** B39162B9416K610

**Date:** March 05, 2007

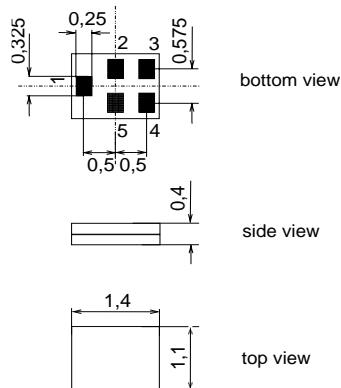
**Version:** 2.2

**Application**

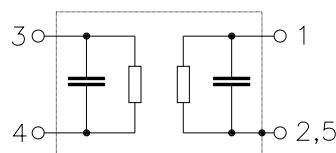
- Low-loss RF filter for mobile telephone
- GPS systems
- Filter impedance  $50 \Omega$
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 2.0 MHz


**Features**

- Package size  $1.4 \times 1.1 \times 0.4 \text{ mm}^3$
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**


**Pin configuration**

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



**Characteristics**

 Temperature range for specification:  $T = -30^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ 

 Terminating source impedance:  $Z_S = 50 \Omega$ 

 Terminating load impedance:  $Z_L = 50 \Omega$ 

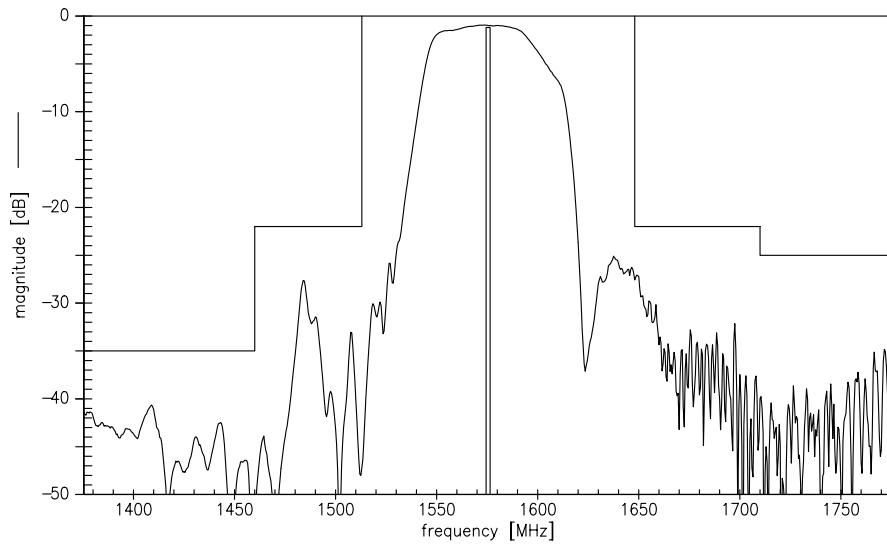
		<b>min.</b>	<b>typ. @ 25 °C</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	1575.42	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	0.9	1.2	dB
1574.42 ... 1576.42 MHz		—	0.9	1.2	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.05	0.3	dB
1574.42 ... 1576.42 MHz		—	0.05	0.3	dB
<b>Input VSWR</b>		—	1.1	1.8	
1574.42 ... 1576.42 MHz		—	1.1	1.8	
<b>Output VSWR</b>		—	1.1	1.8	
1574.42 ... 1576.42 MHz		—	1.1	1.8	
<b>Attenuation</b>	$\alpha$				
0.1 ... 960.0 MHz		38	40	—	dB
960.0 ... 1460.0 MHz		35	39	—	dB
1460.0 ... 1513.0 MHz		22	28	—	dB
1648.0 ... 1710.0 MHz		22	26	—	dB
1710.0 ... 1990.0 MHz		25	33	—	dB
1990.0 ... 2300.0 MHz		25	30	—	dB
2300.0 ... 4000.0 MHz		30	38	—	dB
4000.0 ... 6000.0 MHz		20	35	—	dB

**Maximum ratings**

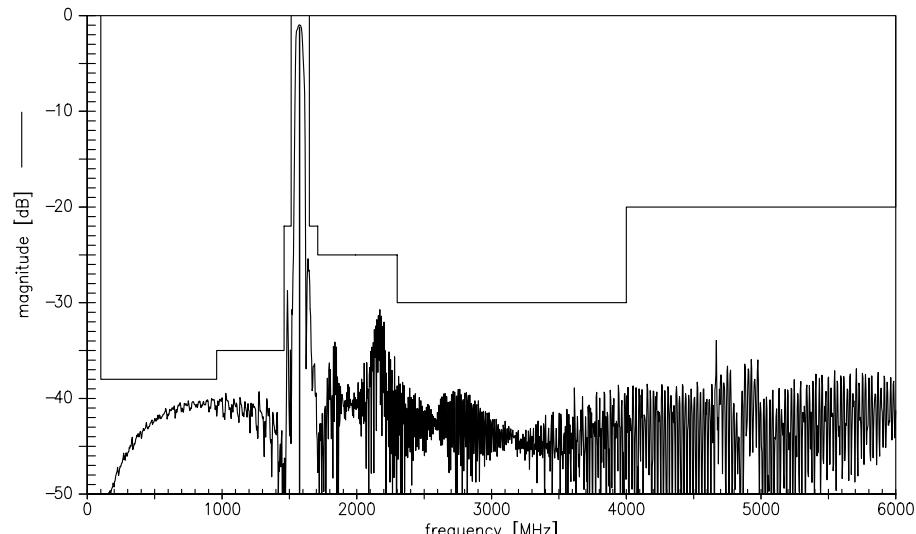
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	3	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model, 10 pulses source/load impedance 50Ω/50Ω
Input power at 1574.42 ... 1576.42 MHz	P <sub>IN</sub>	3	dBm	cw
50...1460, 1710...4000 MHz	P <sub>IN</sub>	15	dBm	cw
824...849, 1710...2170 MHz	P <sub>IN</sub>	25	dBm	cw

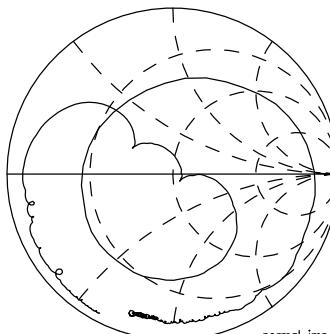
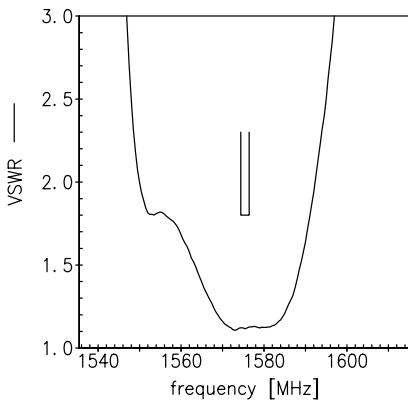
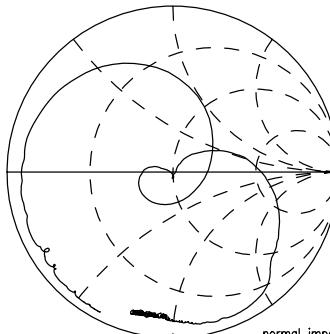
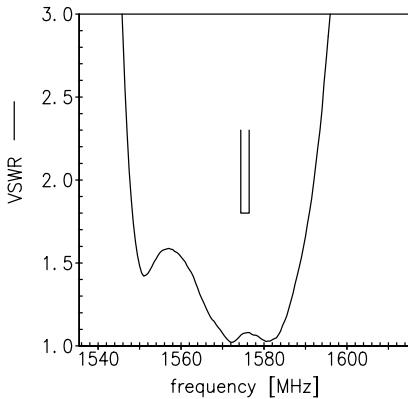
1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

## Transfer function (narrow band)



## Transfer function (wide band)



normal impedance: 50.00  $\Omega$  **$S_{22}$  function**normal impedance: 50.00  $\Omega$

**SAW Components**
**B9416**
**SAW filter**
**1575.42 MHz**
**Data sheet**

**References**

<b>Type</b>	B9416
<b>Ordering code</b>	B39162B9416K610
<b>Marking and package</b>	C61157-A8-A1
<b>Packaging</b>	F61074-V8212-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9416_NB.s2p B9416_WB.s2p
<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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**Офис по работе с юридическими лицами:**

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru  
moschip.ru\_4

moschip.ru\_6  
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