



## **SAW Components**

### **SAW Rx Filter**

GSM 850

<b>Series/Type:</b>	<b>B9422</b>
<b>Ordering code:</b>	<b>B39881B9422K610</b>
<b>Date:</b>	<b>March 17, 2006</b>
<b>Version:</b>	<b>2.0</b>



## SAW Components

B9422

## Low-Loss Filter for Mobile Communication

881.5 MHz

### Data sheet



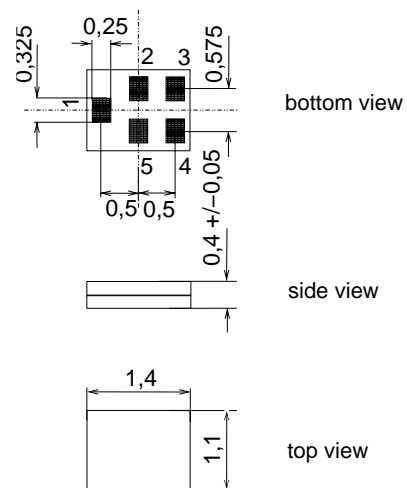
### Application

- Low-loss RF filter for mobile telephone  
GSM 850 systems, receive path (RX)
- Impedance transform from 50  $\Omega$  to 100  $\Omega$
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 25 MHz
- Suitable for GPRS class 1 to 12



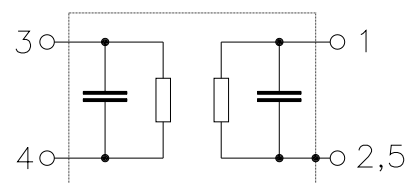
### Features

- Package size 1.4 x 1.1 x 0.4 mm<sup>3</sup>
- Package code QCS5F
- RoHS compatible
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



### Pin configuration

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





## SAW Components

B9422

### Low-Loss Filter for Mobile Communication

881.5 MHz

#### Data sheet



#### Characteristics

Operating temperature range:  $T = -10$  to  $+85$  °C  
Terminating source impedance:  $Z_S = 50\Omega$   
Terminating load impedance:  $Z_L = 100\Omega$  (balanced)

				B9422			
				min.	typ. @ 25°C	max.	
<b>Center frequency</b>	$f_C$			—	881.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$			—	1.3	2.0	dB
869.0 ... 894.0 MHz				—	1.3	2.0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$			—	0.5	1.2	dB
869.0 ... 894.0 MHz				—	0.5	1.2	dB
<b>Input VSWR</b>				—	1.7	2.0	
869.0 ... 894.0 MHz				—	1.7	2.0	
<b>Output VSWR</b>				—	1.8	2.0	
869.0 ... 894.0 MHz				—	1.8	2.0	
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )				-1.0	-0.5/0.5	1.0	dB
869.0 ... 894.0 MHz				-1.0	-0.5/0.5	1.0	dB
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^\circ$ )				-5	-1/+2	5	°
869.0 ... 894.0 MHz				-5	-1/+2	5	°
<b>Common mode suppression</b>	$S_{cs21}$			20	30	—	dB
869.0 ... 894.0 MHz				20	30	—	dB
824.0 ... 995.0 MHz				20	25	—	dB
1648.0 ... 1990.0 MHz				20	40	—	dB
3296.0 ... 3980.0 MHz				20	29	—	dB
<b>Attenuation</b>	$\alpha$			45	55	—	dB
0.3 ... 480.0 MHz				45	55	—	dB
480.0 ... 820.0 MHz				30	35	—	dB
820.0 ... 849.0 MHz				23	35	—	dB
914.0 ... 1738.0 MHz				23	30	—	dB
1738.0 ... 2400.0 MHz				30	45	—	dB
2400.0 ... 2500.0 MHz				40	46	—	dB
2500.0 ... 5150.0 MHz				30	43	—	dB
5150.0 ... 5825.0 MHz				40	48	—	dB
5825.0 ... 12750.0 MHz				—	—	—	dB



SAW Components		B9422
Low-Loss Filter for Mobile Communication		881.5 MHz
Data sheet		

#### Maximum ratings

Operable temperature range	T	-30/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	100 <sup>1)</sup>	V	machine model, 10 pulses
Input Power at				
GSM850, GSM900	P <sub>IN</sub>	15	dBm	effective power in the on-state, duty cycle 4:8
GSM1800, GSM1900	P <sub>IN</sub>	15	dBm	
Tx bands				

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



SAW Components

B9422

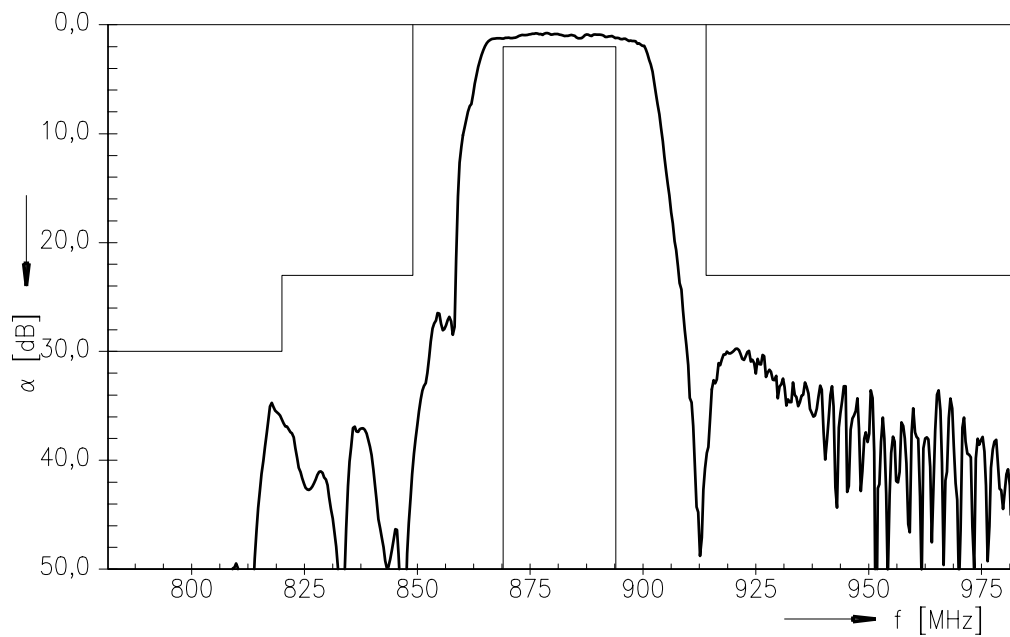
Low-Loss Filter for Mobile Communication

881.5 MHz

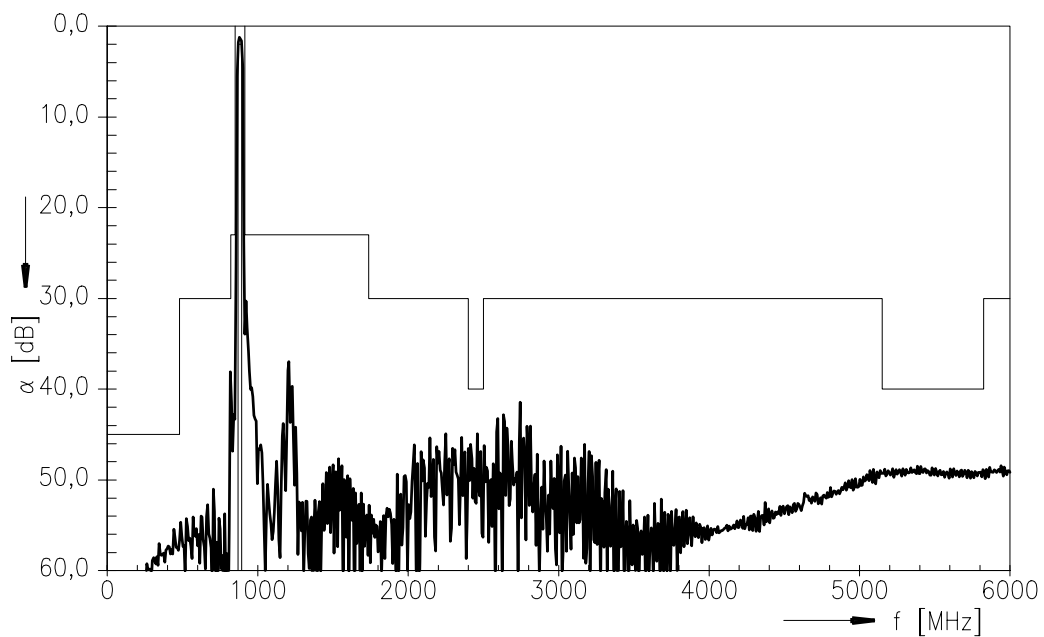
Data sheet



### Transfer function (passband)



### Transfer function



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



SAW Components

B9422

Low-Loss Filter for Mobile Communication

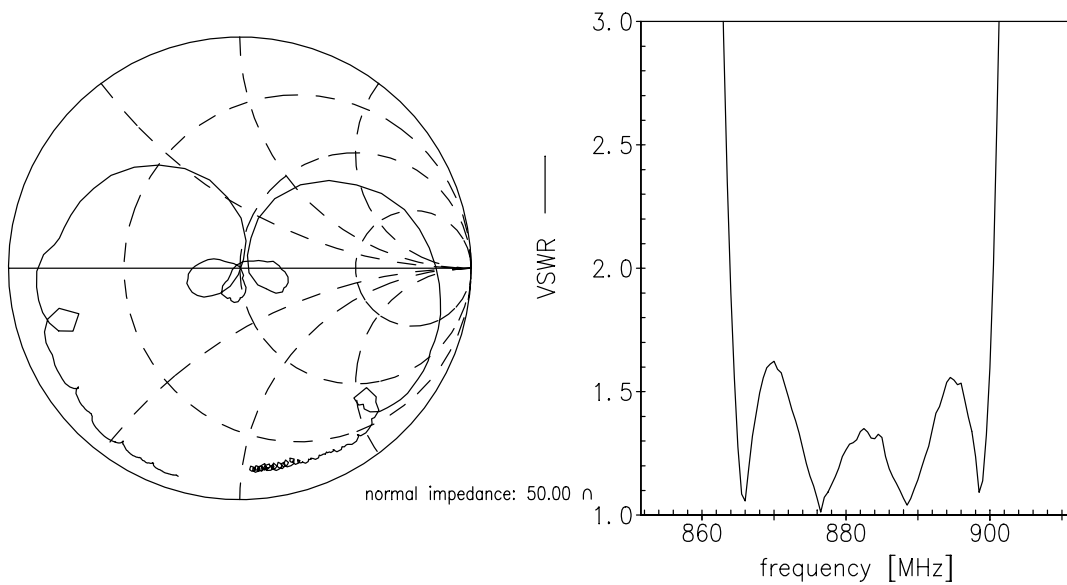
881.5 MHz

Data sheet

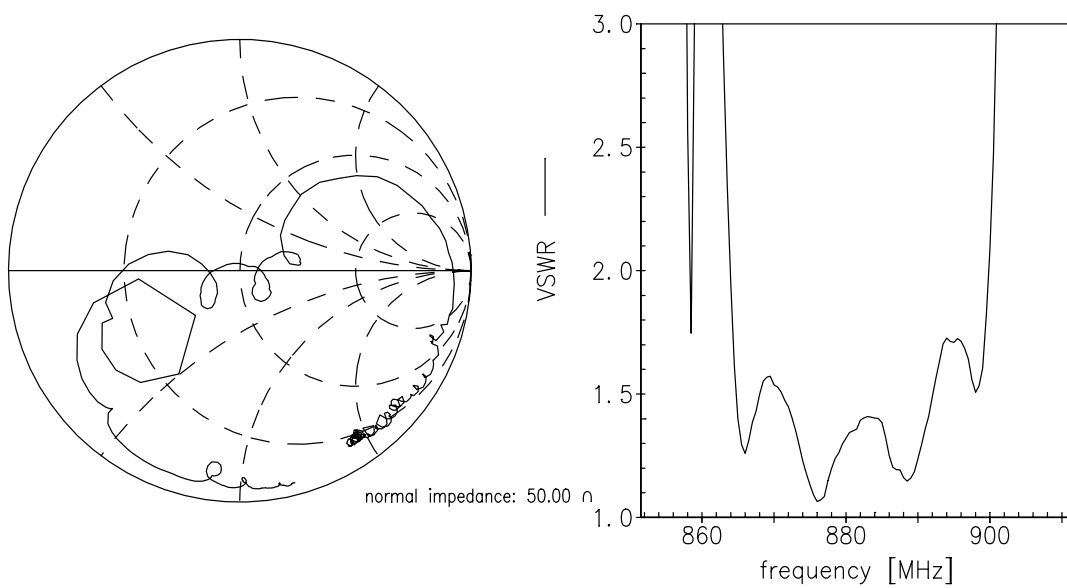


Smith chart / VSWR

$S_{11}$  function



$S_{22}$  function



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

**SAW Components****B9422****Low-Loss Filter for Mobile Communication****881.5 MHz**

Data sheet

**References**

<b>Type</b>	B9422
<b>Ordering code</b>	B39881B9422K610
<b>Marking and package</b>	C61157-A8-A1
<b>Packaging</b>	F61074-V8212-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9422_NB.s3p B9422_WB.s3p
<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."

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

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

© EPCOS AG 2006. This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.

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



## Important notes

The following applies to all products named in this publication:

1. Some parts of this publication contain **statements about the suitability of our products for certain areas of application**. These statements are based on our knowledge of typical requirements that are often placed on our products in the areas of application concerned. We nevertheless expressly point out **that such statements cannot be regarded as binding statements about the suitability of our products for a particular customer application**. As a rule, EPCOS is either unfamiliar with individual customer applications or less familiar with them than the customers themselves. For these reasons, it is always ultimately incumbent on the customer to check and decide whether an EPCOS product with the properties described in the product specification is suitable for use in a particular customer application.
2. We also point out that **in individual cases, a malfunction of passive electronic components or failure before the end of their usual service life cannot be completely ruled out in the current state of the art, even if they are operated as specified**. In customer applications requiring a very high level of operational safety and especially in customer applications in which the malfunction or failure of a passive electronic component could endanger human life or health (e.g. in accident prevention or life-saving systems), it must therefore be ensured by means of suitable design of the customer application or other action taken by the customer (e.g. installation of protective circuitry or redundancy) that no injury or damage is sustained by third parties in the event of malfunction or failure of a passive electronic component.
3. The warnings, cautions and product-specific notes must be observed.
4. In order to satisfy certain technical requirements, **some of the products described in this publication may contain substances subject to restrictions in certain jurisdictions (e.g. because they are classed as "hazardous")**. Useful information on this will be found in our Material Data Sheets on the Internet ([www.epcos.com/material](http://www.epcos.com/material)). Should you have any more detailed questions, please contact our sales offices.
5. We constantly strive to improve our products. Consequently, **the products described in this publication may change from time to time**. The same is true of the corresponding product specifications. Please check therefore to what extent product descriptions and specifications contained in this publication are still applicable before or when you place an order. We also **reserve the right to discontinue production and delivery of products**. Consequently, we cannot guarantee that all products named in this publication will always be available.
6. Unless otherwise agreed in individual contracts, **all orders are subject to the current version of the "General Terms of Delivery for Products and Services in the Electrical Industry" published by the German Electrical and Electronics Industry Association (ZVEI)**.
7. The trade names EPCOS, CeraDiode, CSSP, PhaseCap, PhaseMod, SIFI, SIKOREL, SilverCap, SIMID, SIOV, SIP5D, SIP5K, TOPcap, UltraCap, WindCap are **trademarks registered or pending** in Europe and in other countries. Further information will be found on the Internet at [www.epcos.com/trademarks](http://www.epcos.com/trademarks).



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### 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

moschip.ru\_9