



## **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



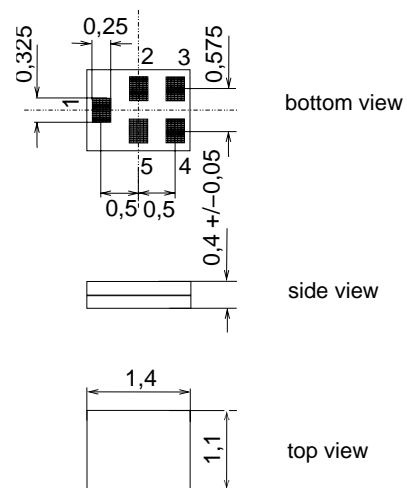
### Application

- 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



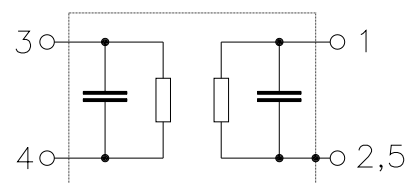
### Features

- 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





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### 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



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#### 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.



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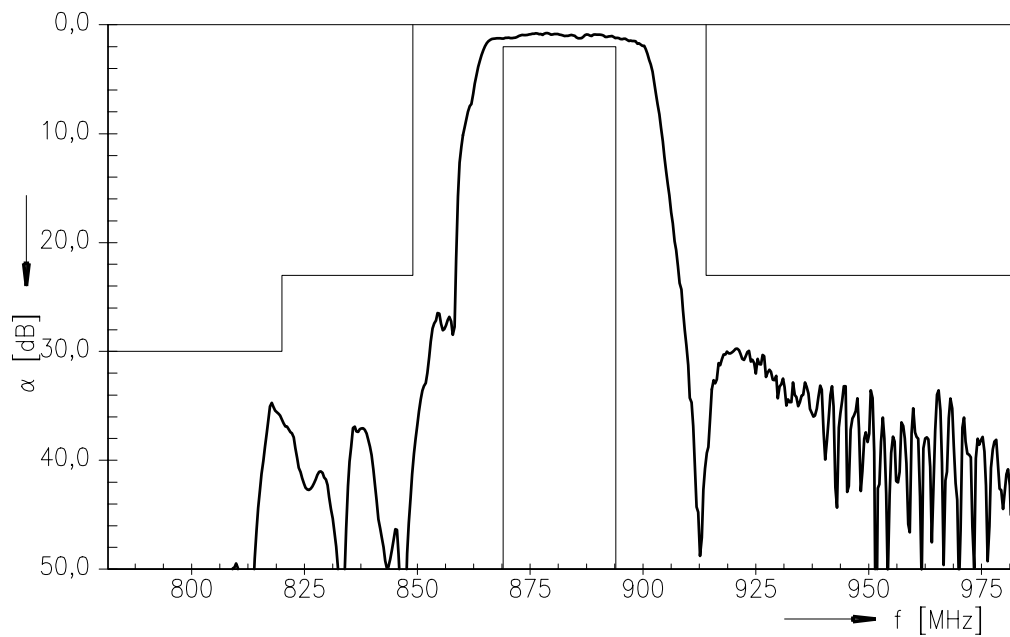
Low-Loss Filter for Mobile Communication

881.5 MHz

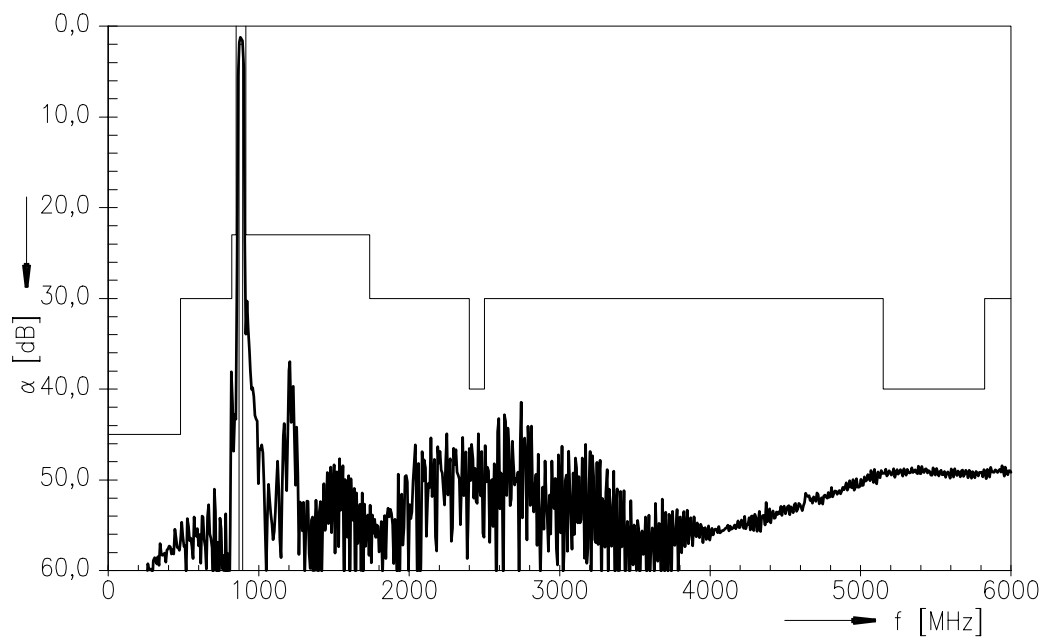
Data sheet



### Transfer function (passband)



### Transfer function



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



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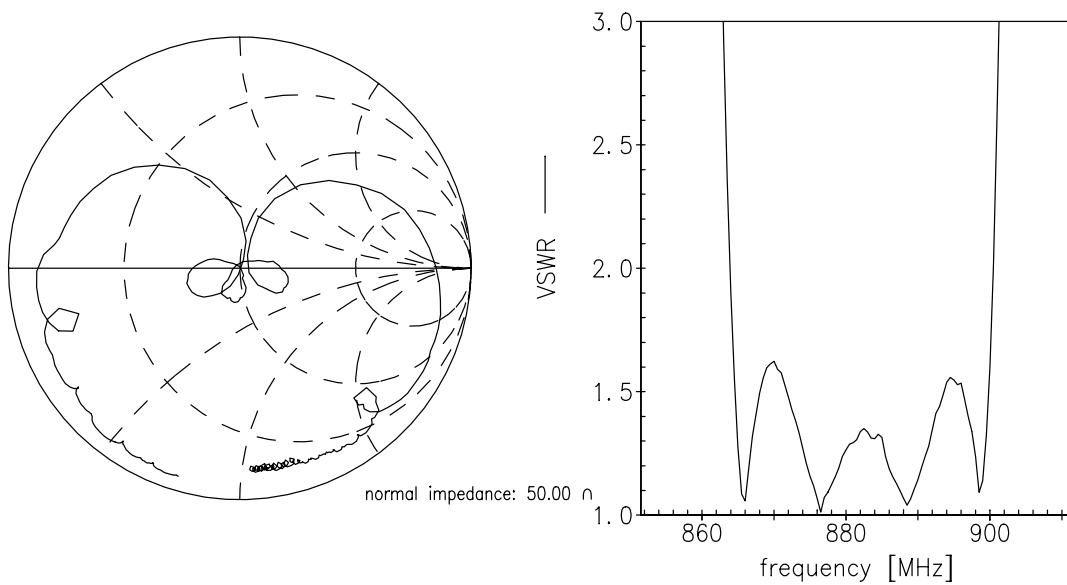
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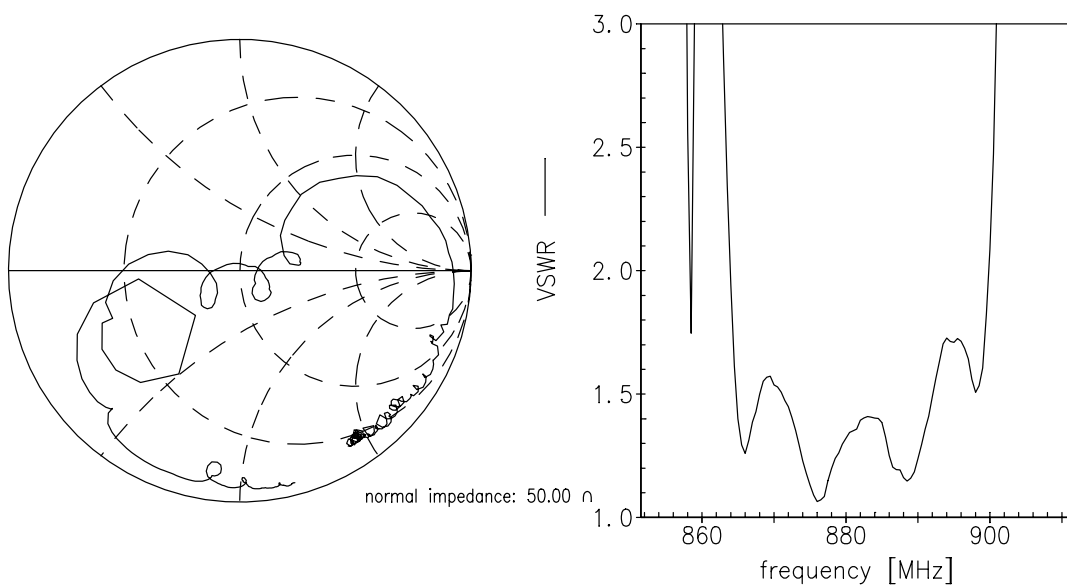


Smith chart / VSWR

$S_{11}$  function



$S_{22}$  function



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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."

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