



## **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>



Data sheet



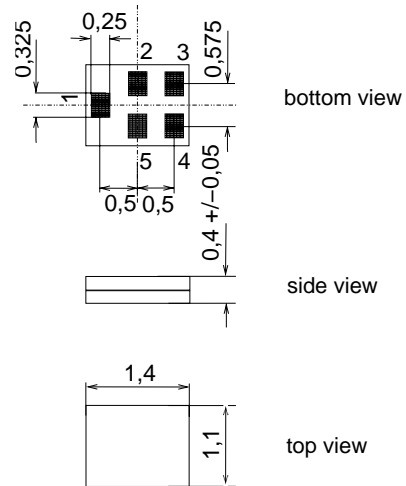
Application

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



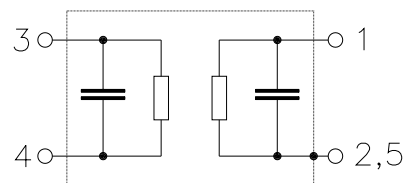
Features

- 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





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>	$\alpha_{max}$				
869.0 ... 894.0 MHz		—	1.3	2.0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
869.0 ... 894.0 MHz		—	0.5	1.2	dB
<b>Input VSWR</b>					
869.0 ... 894.0 MHz		—	1.7	2.0	
<b>Output VSWR</b>					
869.0 ... 894.0 MHz		—	1.8	2.0	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
869.0 ... 894.0 MHz		-1.0	-0.5/0.5	1.0	dB
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^\circ</math>)</b>					
869.0 ... 894.0 MHz		-5	-1/+2	5	°
<b>Common mode suppression</b>	$S_{cs21}$				
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>	$\alpha$				
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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Low-Loss Filter for Mobile Communication

881.5 MHz

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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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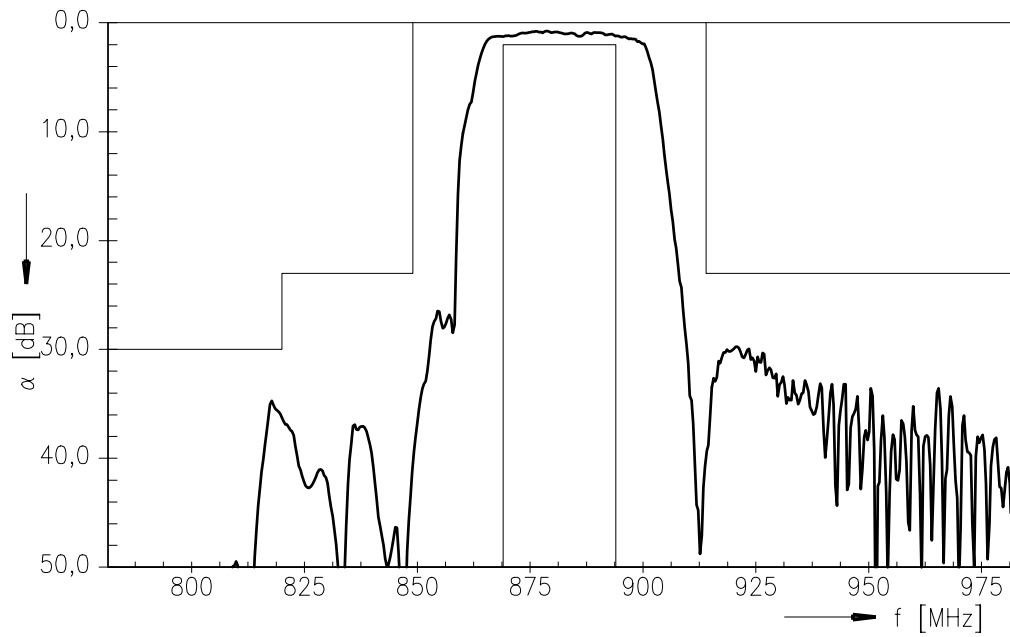
Low-Loss Filter for Mobile Communication

881.5 MHz

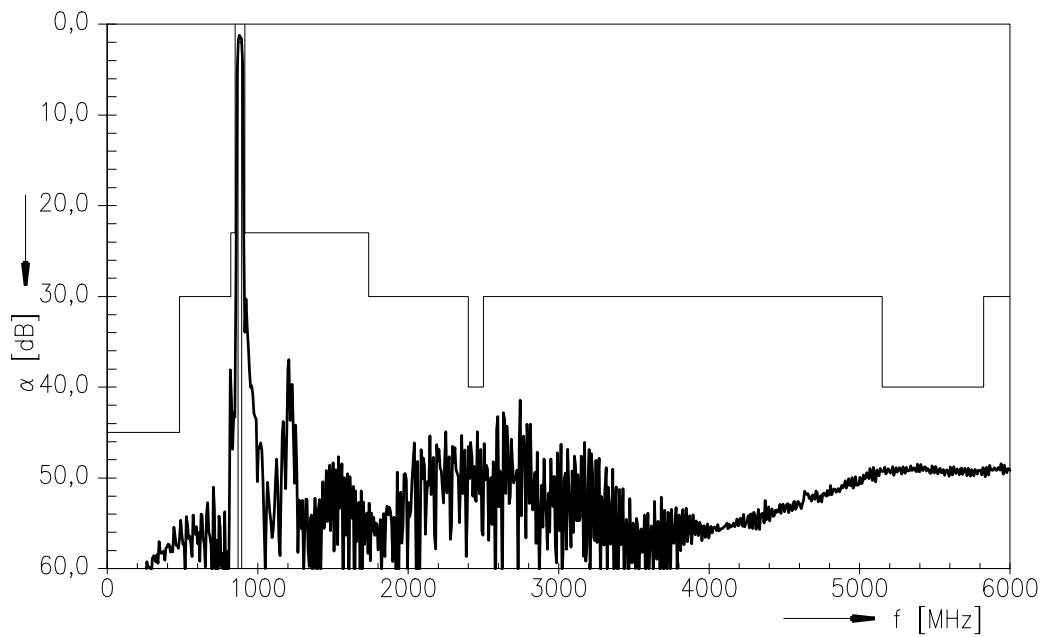
Data sheet



Transfer function (passband)



Transfer function



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

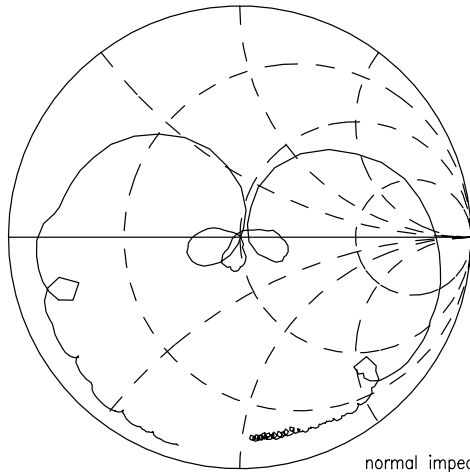


Data sheet

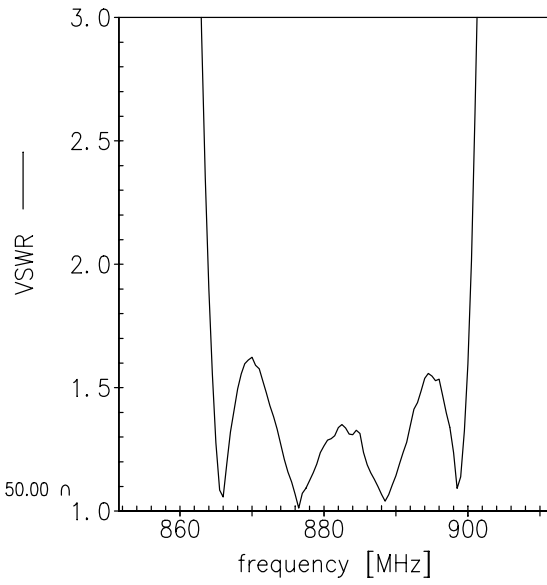


Smith chart / VSWR

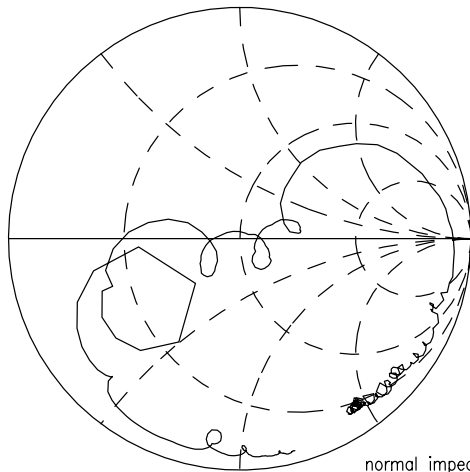
S<sub>11</sub> function



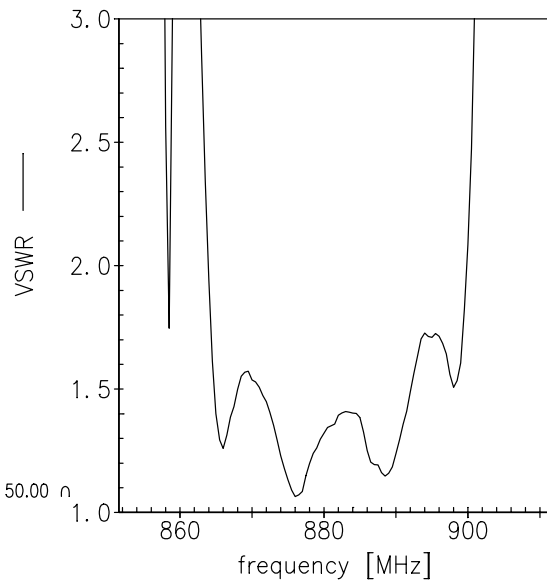
normal impedance: 50.00  $\Omega$



S<sub>22</sub> function



normal impedance: 50.00  $\Omega$





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Low-Loss Filter for Mobile Communication

881.5 MHz

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## References

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

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7 March 17, 2006



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