



## **SAW Components**

### **SAW Rx Filter**

GSM 850

<b>Series/Type:</b>	<b>B9400</b>
<b>Ordering code:</b>	<b>B39881-B9400-K610</b>
<b>Date:</b>	<b>Dec 21, 2005</b>
<b>Version:</b>	<b>2.0</b>



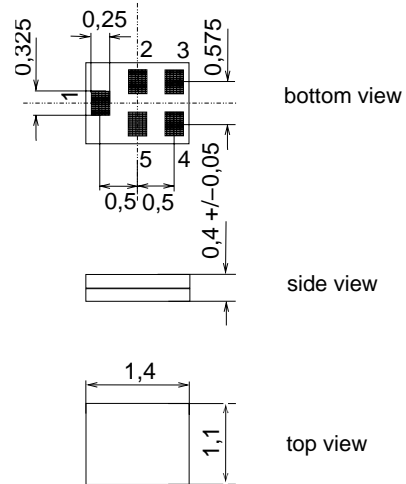
**Application**

- Low-loss RF filter for mobile telephone GSM850 systems, receive path (RX)
- Impedance transform from 50 Ω to 150 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>
- RoHS compliant
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals



**Pin configuration**

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





<b>SAW Components</b>	<b>B9400</b>
<b>Low-Loss Filter for Mobile Communication</b>	<b>881.50 MHz</b>

Data Sheet



**Characteristics**

Operating temperature range:  $T = -20$  to  $+75$  °C  
 Terminating source impedance:  $Z_S = 50\Omega$   
 Terminating load impedance:  $Z_L = 150\Omega \parallel 82$  nH (balanced)

		<b>B9400</b>			
		<b>min.</b>	<b>typ. @ 25°C</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	881.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
869.0 ... 894.0 MHz		—	1.4	1.7	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
869.0 ... 894.0 MHz		—	0.4	0.8	dB
<b>Input VSWR</b>					
869.0 ... 894.0 MHz		—	1.4	1.9	
<b>Output VSWR</b>					
869.0 ... 894.0 MHz		—	1.4	1.9	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
869.0 ... 894.0 MHz		-1.0	-0.6/0.0	1.0	dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
869.0 ... 894.0 MHz		-10	-3/+1.5	10	°
<b>Attenuation</b>	$\alpha$				
0.0 ... 434.0 MHz		45	54	—	dB
434.0 ... 447.0 MHz		45	52	—	dB
447.0 ... 849.0 MHz		30	33	—	dB
914.0 ... 1000.0 MHz		24	28	—	dB
1000.0 ... 1738.0 MHz		28	32	—	dB
1738.0 ... 6000.0 MHz		36	40	—	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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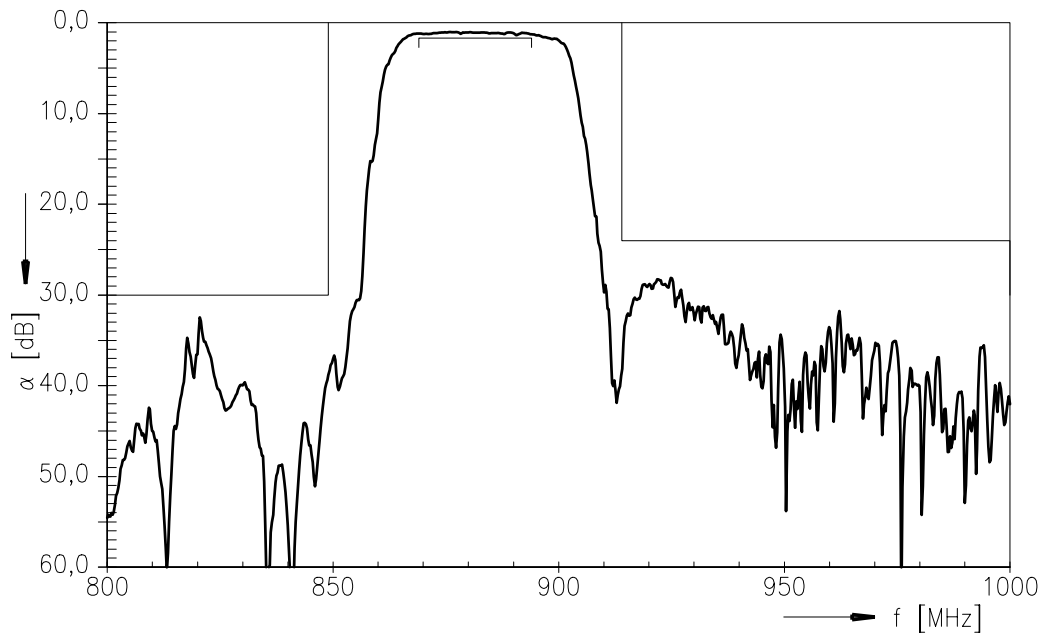
Low-Loss Filter for Mobile Communication

881.50 MHz

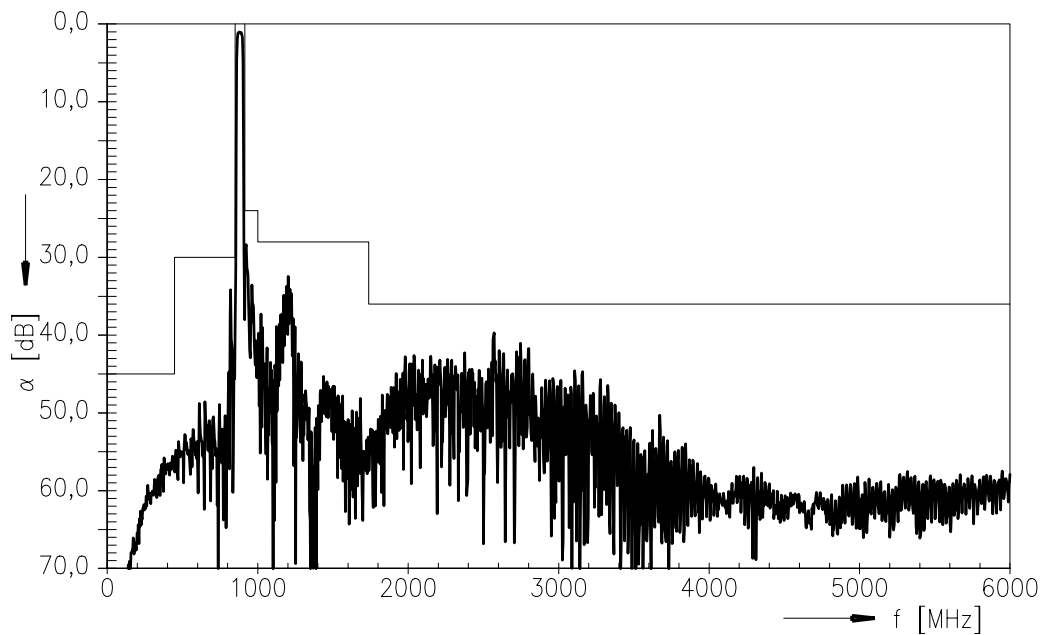
Data Sheet



Transfer function



Transfer function



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



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Low-Loss Filter for Mobile Communication

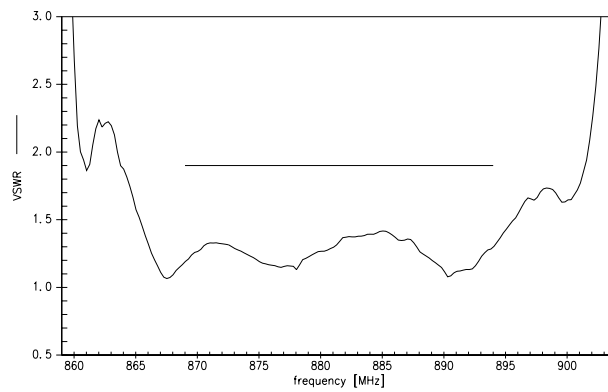
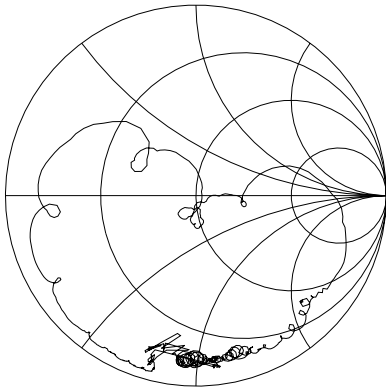
881.50 MHz

Data Sheet

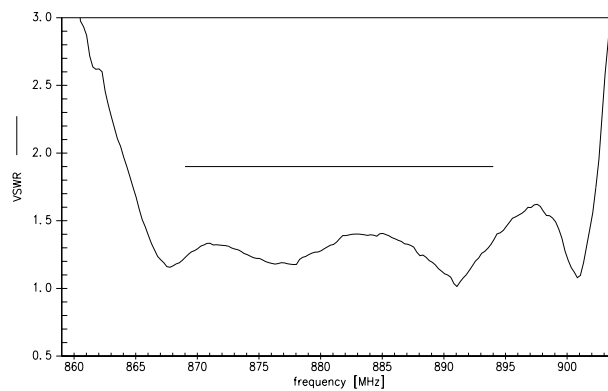
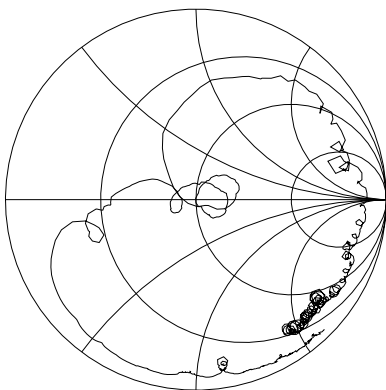


Smith chart / VSWR

$S_{11}$  function



$S_{22}$  function



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Data Sheet



<b>Type</b>	B9400	
<b>Ordering code</b>	B39881-B9400-K610	
<b>Marking and Package</b>	C61157-A8-A1	
<b>Packaging</b>	F61074-V8212-Z000	
<b>Date Codes</b>	L_1126	
<b>S-Parameters</b>	B9400_NB.s3p B9400_WB.s3p	
<b>Soldering profile</b>	S_6001	

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