



## **SAW Components**

### **SAW Rx Filter**

**GSM 900**

**Series/Type:** **B9401**

**Ordering code:** **B39941-B9401-K610**

**Date:** **Oct 21, 2005**

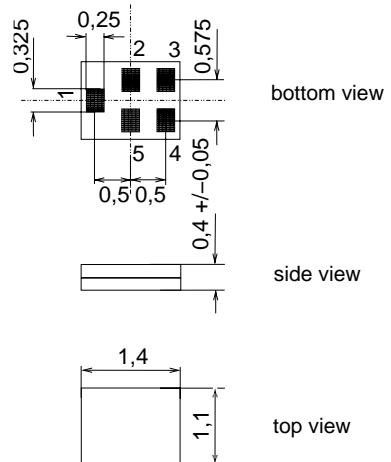
**Version:** **1**

**Application**

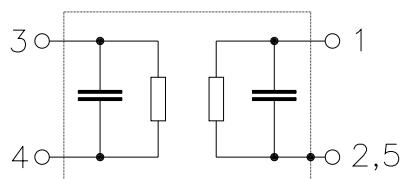
- Low-loss RF filter for mobile telephone  
GSM systems, receive path (RX)
- Impedance transform from  $50 \Omega$  to  $150 \Omega$
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 35 MHz
- Suitable for GPRS class 1 to 12


**Features**

- Package size  $1.4 \times 1.1 \times 0.4 \text{ mm}^3$
- 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



**SAW Components****B9401****Low-Loss Filter for Mobile Communication****942.50 MHz****Data Sheet****Characteristics**Operating temperature range:  $T = -20$  to  $+75$  °CTerminating source impedance:  $Z_S = 50\Omega$ Terminating load impedance:  $Z_L = 150\Omega \parallel 82\text{ nH}$  (balanced)

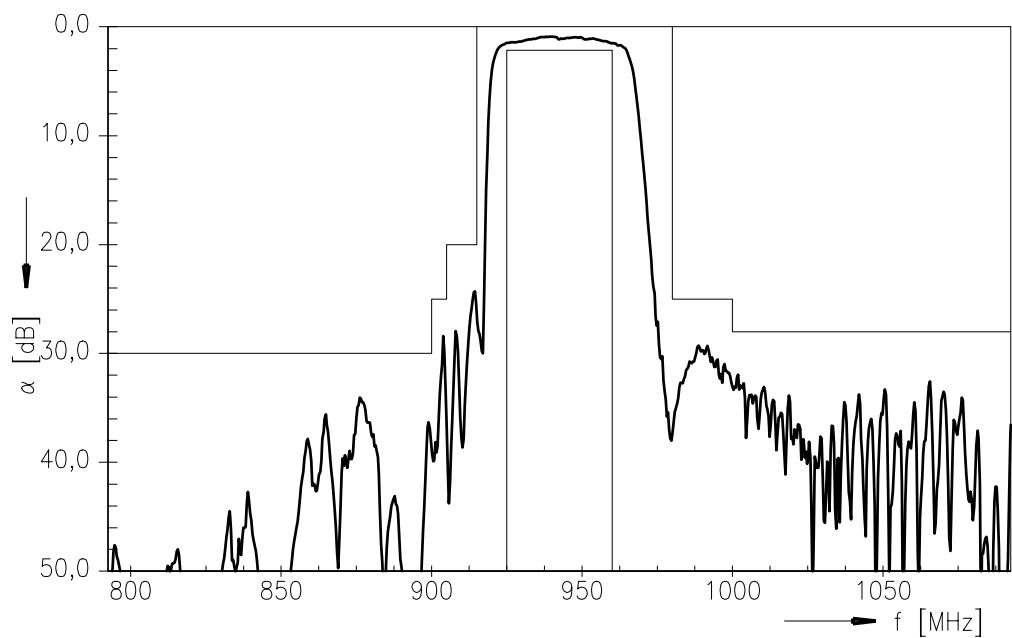
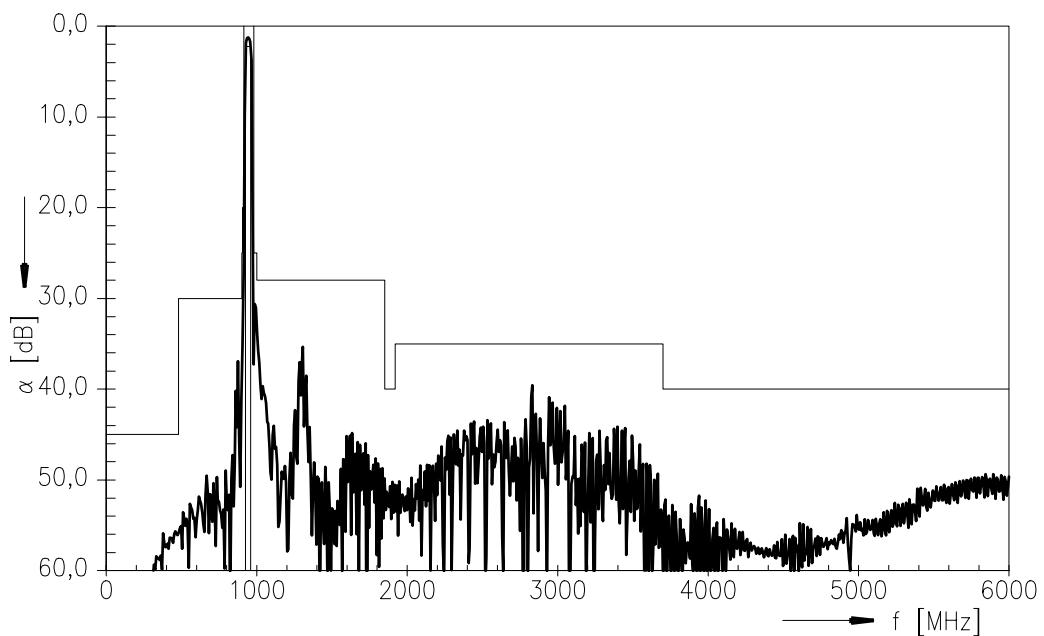
			<b>B9401</b>		
			<b>min.</b>	<b>typ. @ 25°C</b>	<b>max.</b>
<b>Center frequency</b>		$f_C$	—	942.5	—
<b>Maximum insertion attenuation</b>		$\alpha_{\max}$	—	1.5	2.1
925.0 ... 960.0	MHz		—	dB	
<b>Amplitude ripple (p-p)</b>		$\Delta\alpha$	—	0.6	1.1
925.0 ... 960.0	MHz		—	dB	
<b>Input VSWR</b>			—	1.7	2.0
925.0 ... 960.0	MHz		—		
<b>Output VSWR</b>			—	1.7	2.0
925.0 ... 960.0	MHz		—		
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>			—		
925.0 ... 960.0	MHz		-1.0	-0.7/0.5	1.0
					dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>			—		
925.0 ... 960.0	MHz		-5	-2/+3	5
					°
<b>Attenuation</b>		$\alpha$			
0.0 ... 480.0	MHz		45	53	—
480.0 ... 900.0	MHz		30	34	dB
900.0 ... 905.0	MHz		25	28	—
905.0 ... 915.0	MHz		20	24	dB
980.0 ... 1000.0	MHz		25	29	—
1000.0 ... 1850.0	MHz		28	32	dB
1850.0 ... 1920.0	MHz		40	46	—
1920.0 ... 3700.0	MHz		35	43	dB
3700.0 ... 6000.0	MHz		40	48	—
					dB

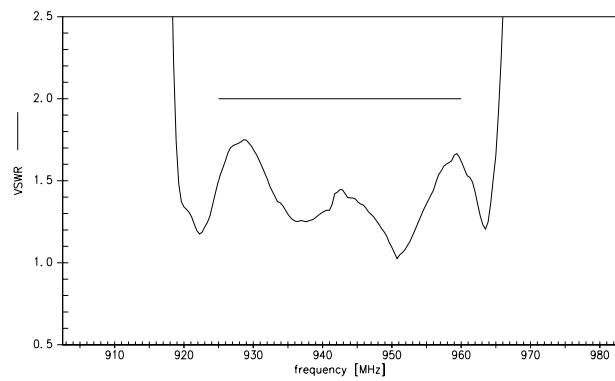
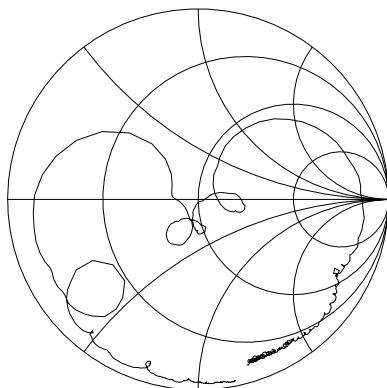
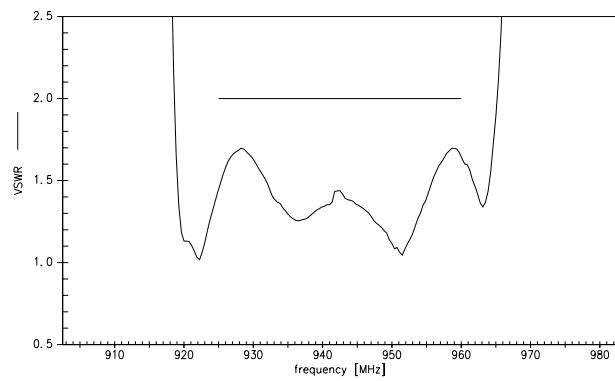
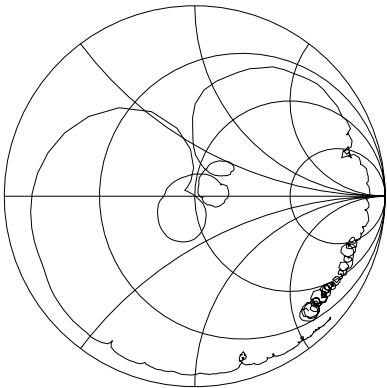
Please read *cautions and warnings and important notes* at the end of this document.

**SAW Components****B9401****Low-Loss Filter for Mobile Communication****942.50 MHz****Data Sheet****Maximum ratings**

Operable temperature range	$T$	–30/+85	$^{\circ}\text{C}$	
Storage temperature range	$T_{\text{stg}}$	–40/+85	$^{\circ}\text{C}$	
DC voltage	$V_{\text{DC}}$	5	V	
ESD voltage	$V_{\text{ESD}}$	100 1)	V	machine model, 10 pulses
Input Power at GSM850, GSM900 GSM1800, GSM1900	$P_{\text{IN}}$	15	dBm	effective power in the on-state, duty cycle 4:8
Tx bands		15	dBm	

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

**Transfer function (passband)**

**Transfer function (wideband)**


**SAW Components****B9401****Low-Loss Filter for Mobile Communication****942.50 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****B9401****Low-Loss Filter for Mobile Communication****942.50 MHz****Data Sheet**

<b>Type</b>	<b>B9401</b>	
<b>Ordering code</b>	B39941-B9401-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>	B9401_NB.s3p B9401_WB.s3p	
<b>Soldering profile</b>	S_6001	

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**Published by EPCOS AG**

**Surface Acoustic Wave Components Division**

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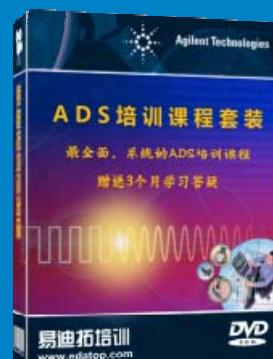
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