



SAW Components

SAW Rx Filter

GSM 900

Series/Type:	B9401
Ordering code:	B39941-B9401-K610
Date:	Oct 21, 2005
Version:	1



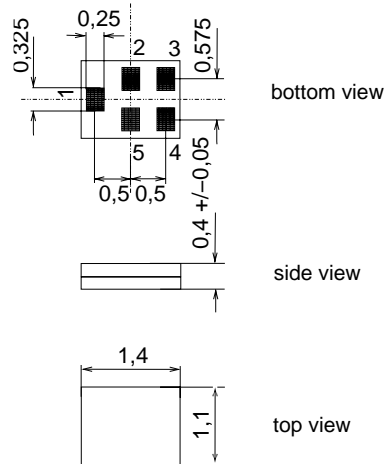
Application

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



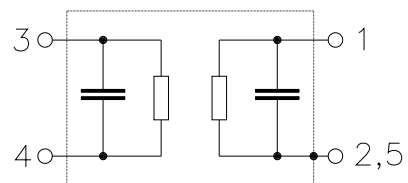
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- 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 $+75$ °C
 Terminating source impedance: $Z_S = 50\Omega$
 Terminating load impedance: $Z_L = 150\Omega \parallel 82$ nH (balanced)

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



SAW Components

B9401

Low-Loss Filter for Mobile Communication

942.50 MHz

Data Sheet



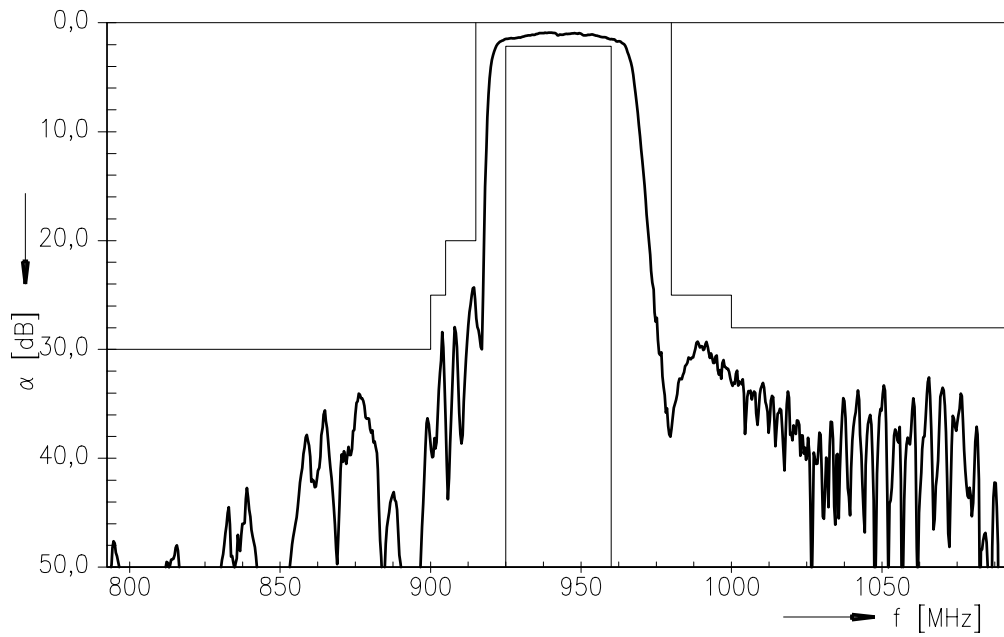
Maximum ratings

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

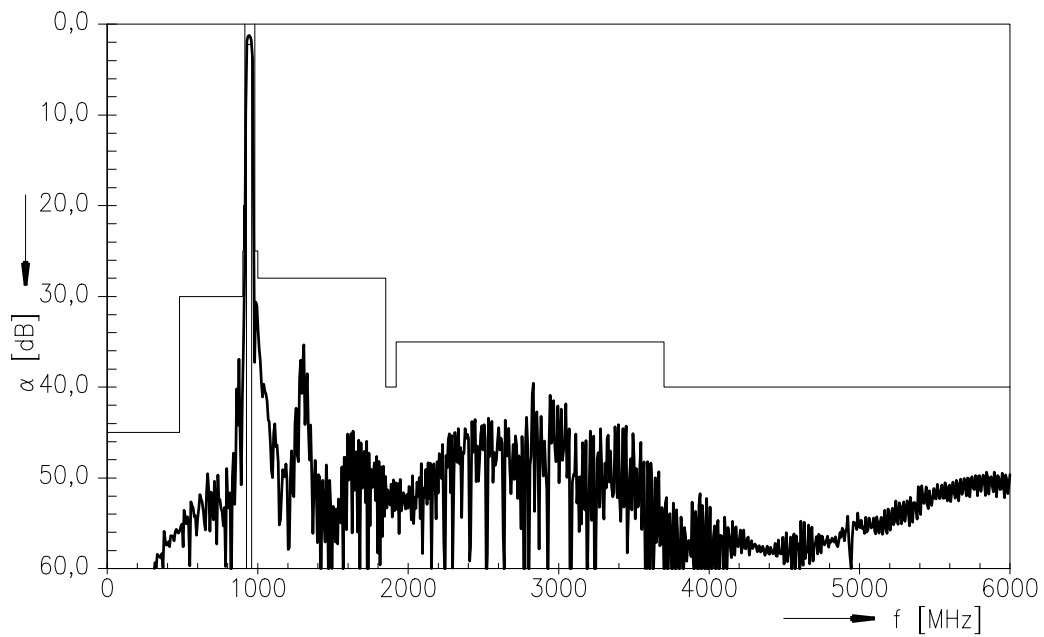
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (passband)



Transfer function (wideband)



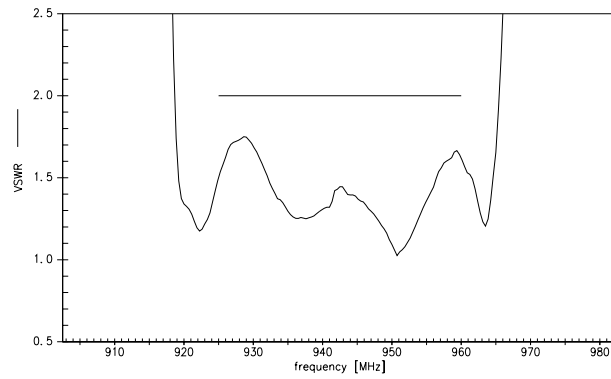
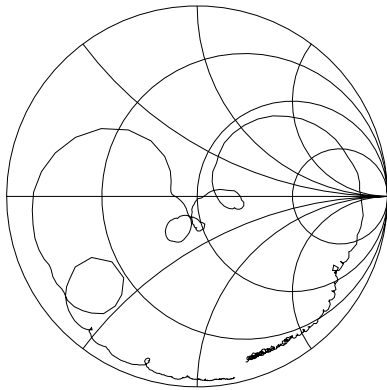


Data Sheet

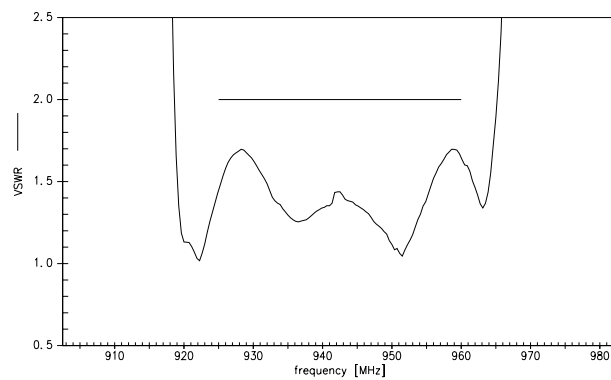
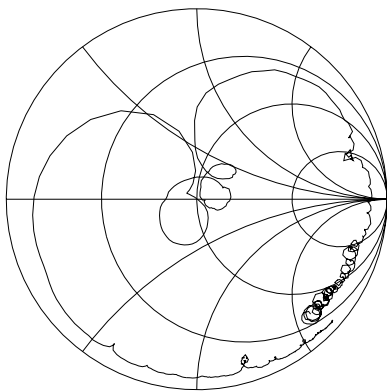


Smith chart / VSWR

S_{11} function



S_{22} function





SAW Components

B9401

Low-Loss Filter for Mobile Communication

942.50 MHz

Data Sheet



Type	B9401	
Ordering code	B39941-B9401-K610	
Marking and Package	C61157-A8-A1	
Packaging	F61074-V8212-Z000	
Date Codes	L_1126	
S-Parameters	B9401_NB.s3p B9401_WB.s3p	
Soldering profile	S_6001	

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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

© EPCOS AG 2005. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

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). 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.