



SAW Components

SAW Rx Filter

GSM 900

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



SAW Components

B9401

Low-Loss Filter for Mobile Communication

942.50 MHz

Data Sheet



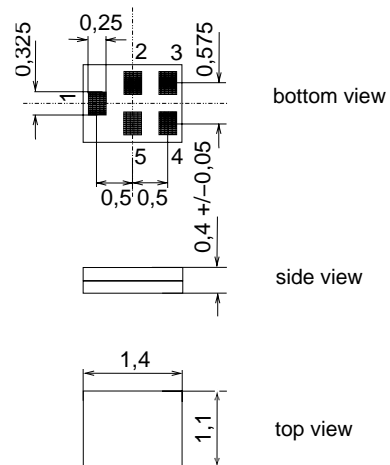
Application

- 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



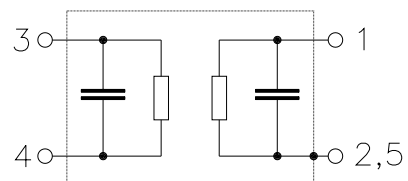
Features

- 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





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Characteristics

Operating temperature range: $T = -20$ to $+75$ °C
Terminating source impedance: $Z_S = 50\Omega$
Terminating load impedance: $Z_L = 150\Omega \parallel 82\text{ nH}$ (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		—	1.5	2.1	dB
Amplitude ripple (p-p)	$\Delta\alpha$			—	0.6	1.1	
	925.0 ... 960.0	MHz		—	0.6	1.1	dB
Input VSWR				—	1.7	2.0	
	925.0 ... 960.0	MHz		—	1.7	2.0	
Output VSWR				—	1.7	2.0	
	925.0 ... 960.0	MHz		—	1.7	2.0	
Output amplitude balance ($ S_{31}/S_{21} $)				—1.0	-0.7/0.5	1.0	
	925.0 ... 960.0	MHz		—1.0	-0.7/0.5	1.0	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)				-5	-2/+3	5	
	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



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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.



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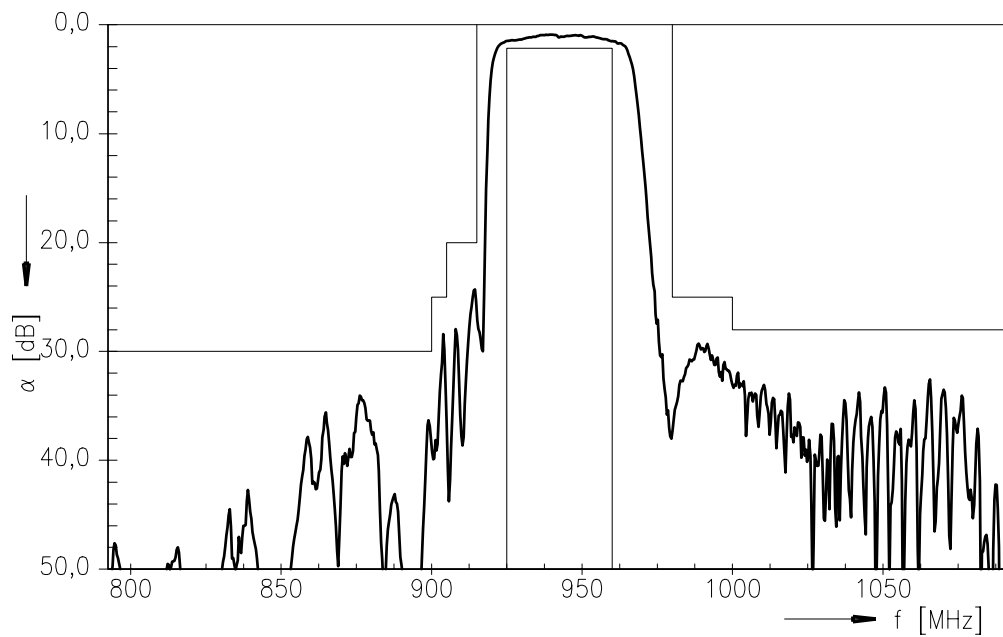
Low-Loss Filter for Mobile Communication

942.50 MHz

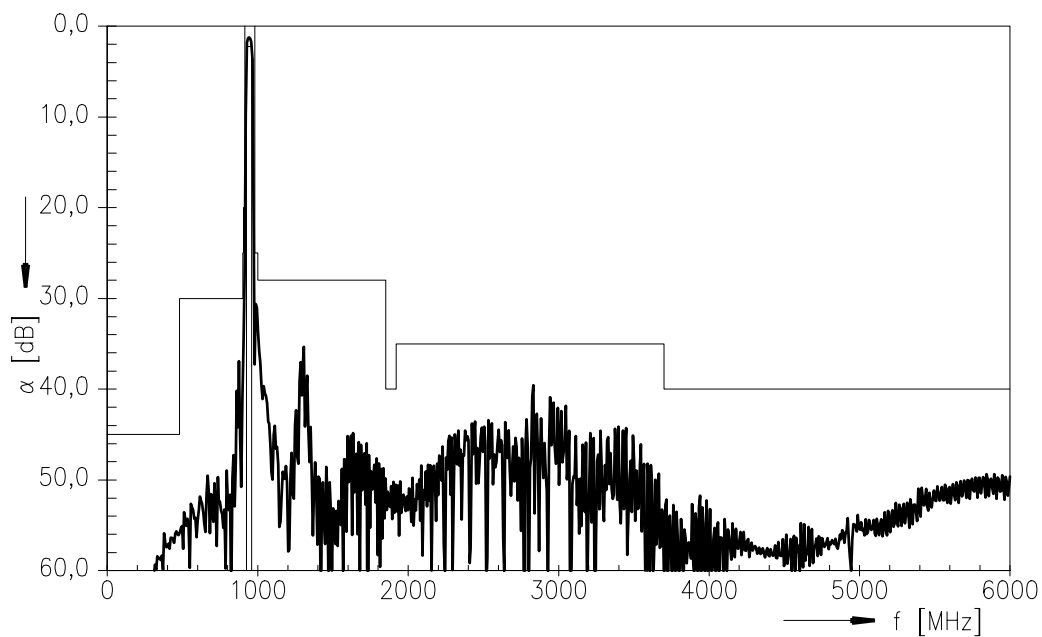
Data Sheet



Transfer function (passband)



Transfer function (wideband)



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



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Low-Loss Filter for Mobile Communication

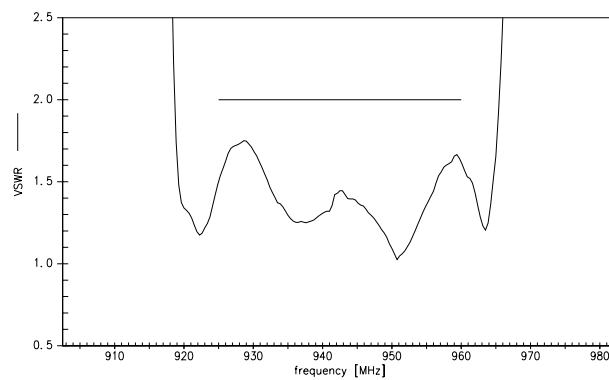
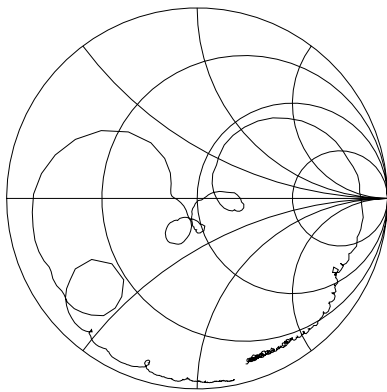
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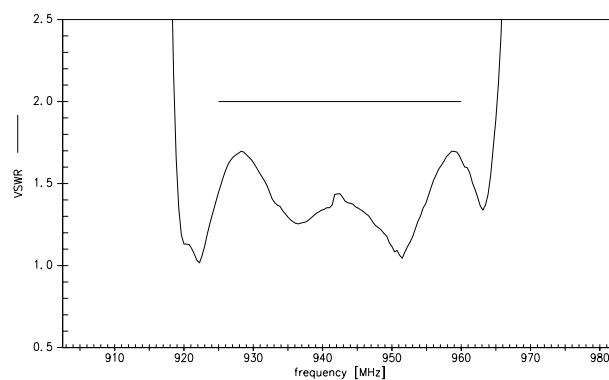
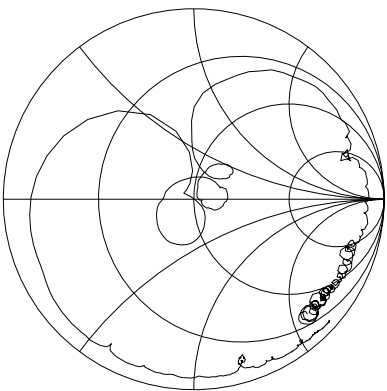


Smith chart / VSWR

S_{11} function



S_{22} function



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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**

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