SAW Components

SAW Rx Filter

GSM 1900

Series/Type: **B9403**
Ordering code: **B39202B9403K610**

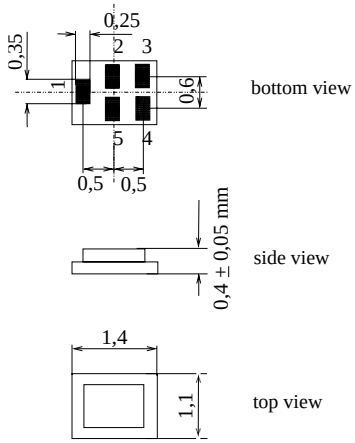
Date: November 28, 2008
Version: 2.1

Application

- Low-loss RF filter for mobile telephone PCS 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 60 MHz
- Suitable for GPRS class 1 to 12

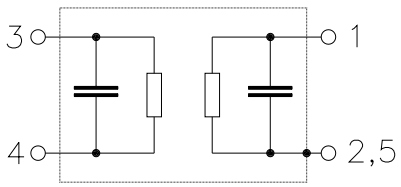
Features

- Package size 1.4 x1.1 x 0.4 mm³
- Package code QCS5U
- RoHS compliant
- Approx. weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals



Pin configuration

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



Data Sheet SMD

Characteristics

Operating temperature range: T = –20 to +75 °C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150 Ω || 18 nH (balanced)

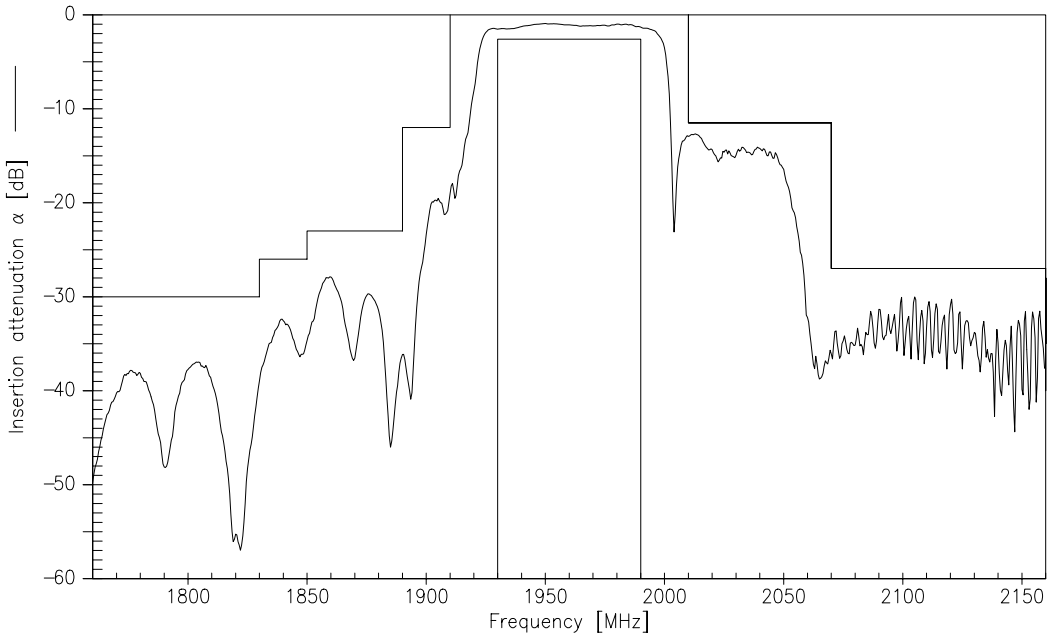
		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	1960	—	MHz
Maximum insertion attenuation	α_{max}				
1930.0 ... 1990.0 MHz		—	1.6	2.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930.0 ... 1990.0 MHz		—	0,7	1.4	dB
Input VSWR					
1930.0 ... 1990.0 MHz		—	1.7	2.2	
Output VSWR					
1930.0 ... 1990.0 MHz		—	1.7	2.2	
Output amplitude balance ($\|S_{31}/S_{21}\|$)					
1930.0 ... 1990.0 MHz		–1.2	-0.6/0.5	1.2	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1930.0 ... 1990.0 MHz		–10	-1/+4	10	°
Attenuation	α				
0.0 ... 1510.0 MHz		40	46	—	dB
1510.0 ... 1830.0 MHz		30	37	—	dB
1830.0 ... 1850.0 MHz		26	32	—	dB
1850.0 ... 1890.0 MHz		23	28	—	dB
1890.0 ... 1910.0 MHz		12	18	—	dB
2010.0 ... 2070.0 MHz		11.5	12.5	—	dB
2070.0 ... 2400.0 MHz		27	29	—	dB
2400.0 ... 2500.0 MHz		35	42	—	dB
2500.0 ... 3860.0 MHz		28	33	—	dB
3860.0 ... 3980.0 MHz		40	49	—	dB
3980.0 ... 5790.0 MHz		28	42	—	dB
5790.0 ... 6000.0 MHz		35	45	—	dB

Maximum ratings

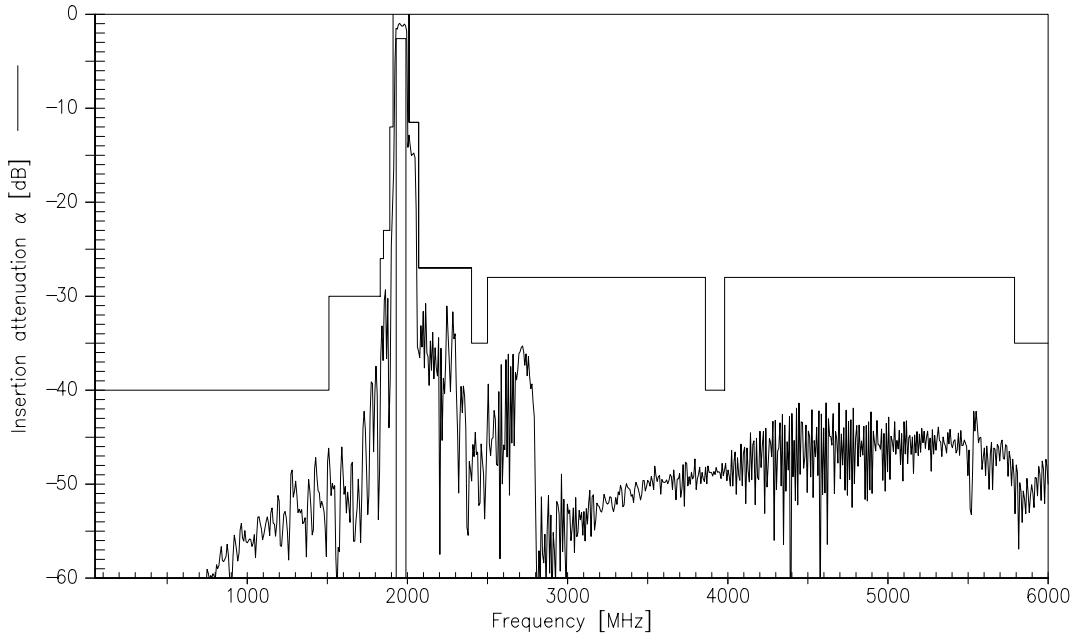
Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50 [1)]	V	machine model, 10 pulses
Input Power at				
GSM850, GSM900	P_{IN}	15	dBm	peak power of GSM signal,
GSM1800, GSM1900	P_{IN}	15	dBm	duty cycle 4:8
Tx bands				

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

Transfer function

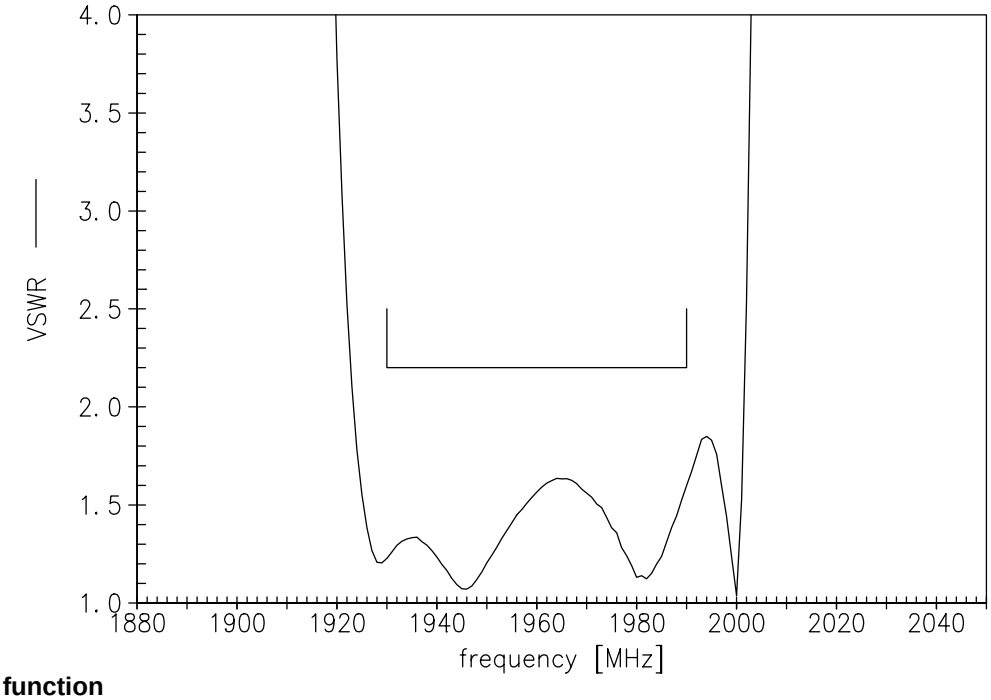


Transfer function

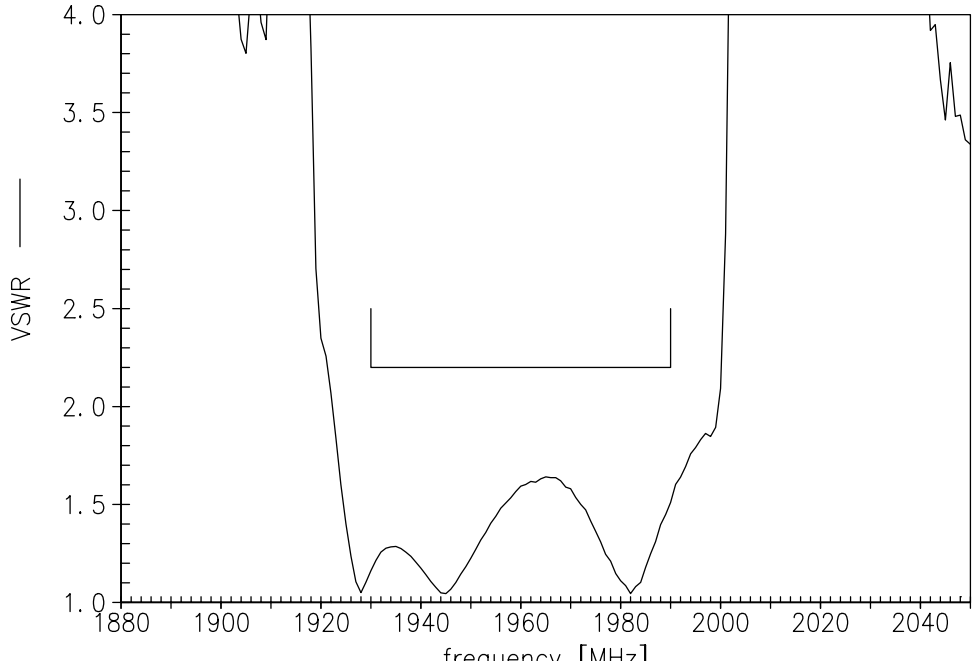


Smith chart

S_{11} function



S_{22} function



References

Type	B9403
Ordering code	B39202B9403K610
Marking and package	C61157-A8-A14
Packaging	F61074-V8237-Z000
Date codes	L_1126
S-parameters	B9403_NB.s3p, B9403_WB.s3p see file header for port/pin assignment table
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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.

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

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