



SAW Components

SAW Tx Filter

WCDMA Band I

Series/Type:	B9414
Ordering code:	B39202B9414M410
Date:	November 27, 2008
Version:	2.1



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B9414

SAW Filter

1950.0 MHz

Data Sheet



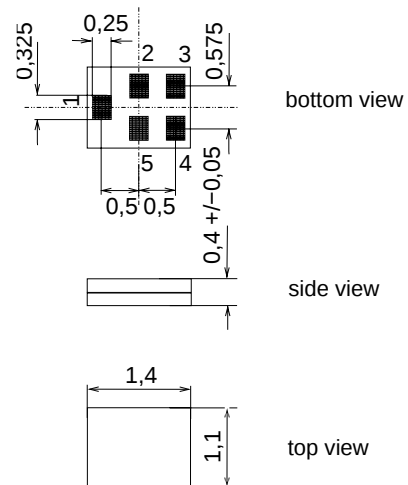
Application

- Low-loss RF filter for mobile telephone WCDMA systems, transmit path (TX)
- Impedance transform from $50\ \Omega$ to $50\ \Omega$
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Very low Error Vector Magnitude (EVM)
- High Rx-suppression
- Usable passband 60 MHz



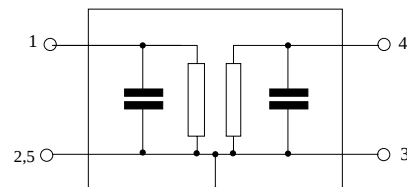
Features

- Package size $1.4 \times 1.1 \times 0.4\ \text{mm}^3$
- Package code QCS51
- RoHS compatible
- Approx. weight 0.003 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)



Pin configuration

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





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Characteristics

Operating temperature range: $T = -20\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 50\ \Omega$ (unbalanced)

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1950.0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
1920.0 ... 1980.0 MHz		—	2.5	3.2 ¹⁾	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0 ... 1980.0 MHz		—	1.1	1.8 ²⁾	dB
Input VSWR					
1920.0 ... 1980.0 MHz		—	1.8	2.2	
Output VSWR					
1920.0 ... 1980.0 MHz		—	1.8	2.2	
Attenuation	α				
0.0 ... 960.0 MHz		27	34	—	dB
960.0 ... 1575.0 MHz		25	35	—	dB
1575.0 ... 1576.0 MHz		32	35	—	dB
1576.0 ... 1730.0 MHz		30	35	—	dB
1730.0 ... 1880.0 MHz		30	38	—	dB
2025.0 ... 2050.0 MHz		35	54	—	dB
2110.0 ... 2170.0 MHz		35	38	—	dB
2200.0 ... 3100.0 MHz		33	37	—	dB
3100.0 ... 3960.0 MHz		30	42	—	dB
3960.0 ... 6000.0 MHz		20	34	—	dB

¹⁾ ILmax max. 3.0dB at 25°C

²⁾ AR max. 1.6dB at 25°C
 EVM 1.3% at 25°C, 2.2% over temperature

**SAW Components****B9414****SAW Filter****1950.0 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}	50 ¹⁾	V	machine model, 10 pulses
Source Power	P _S	10	dBm	cw signal

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



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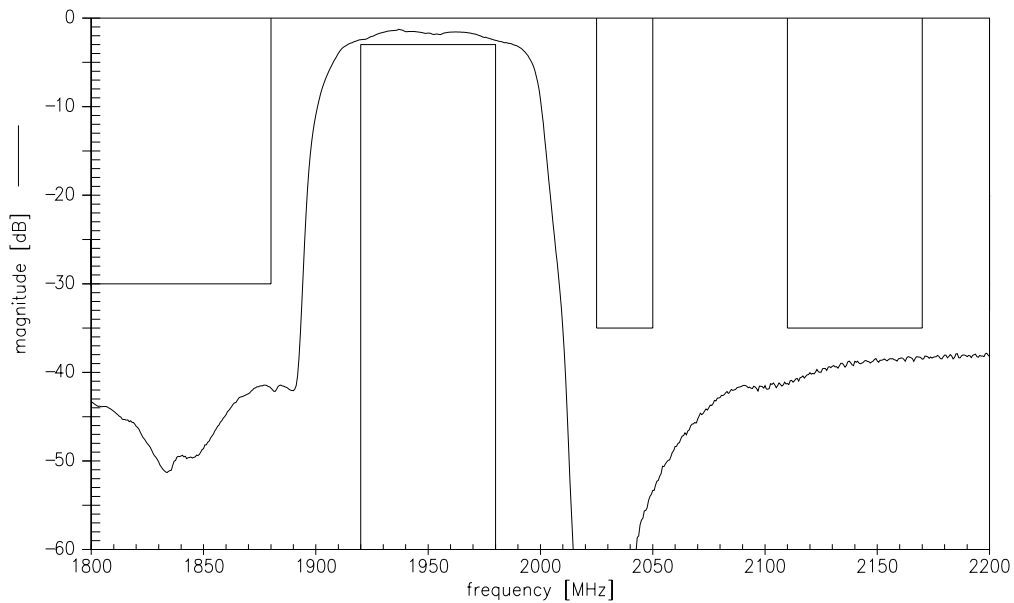
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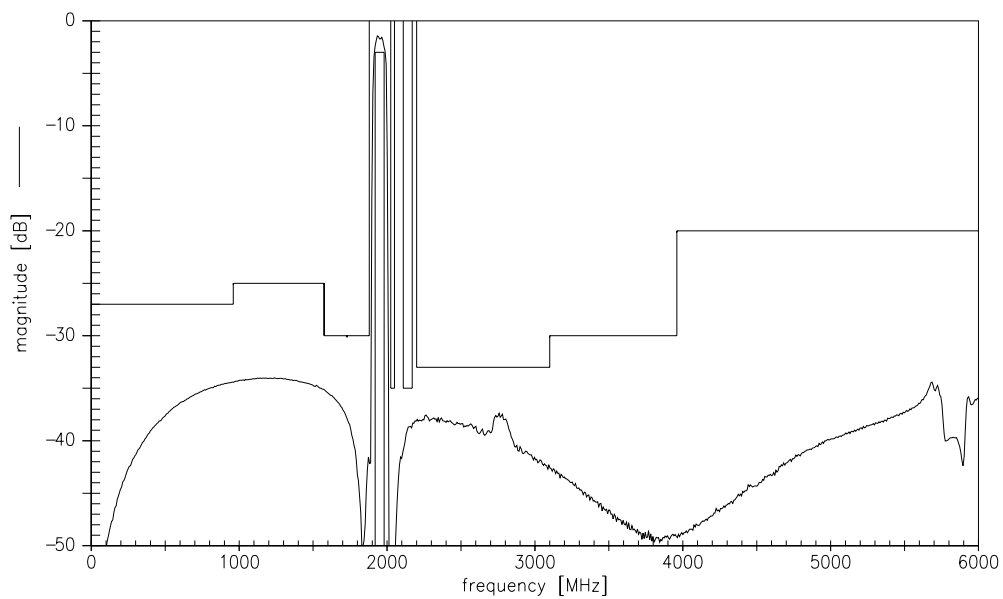
Data Sheet



Transfer function



Transfer function (wideband)



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



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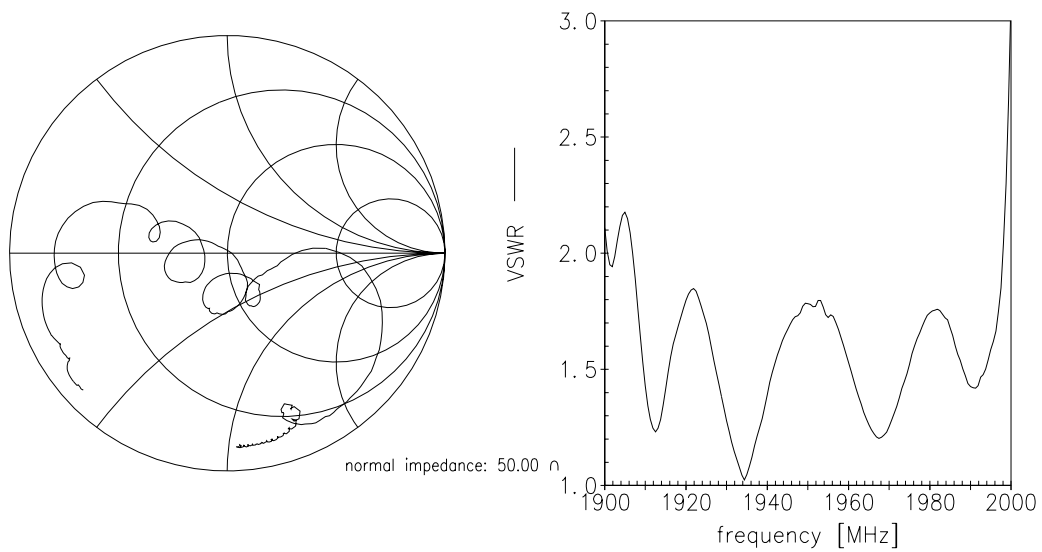
1950.0 MHz

Data Sheet

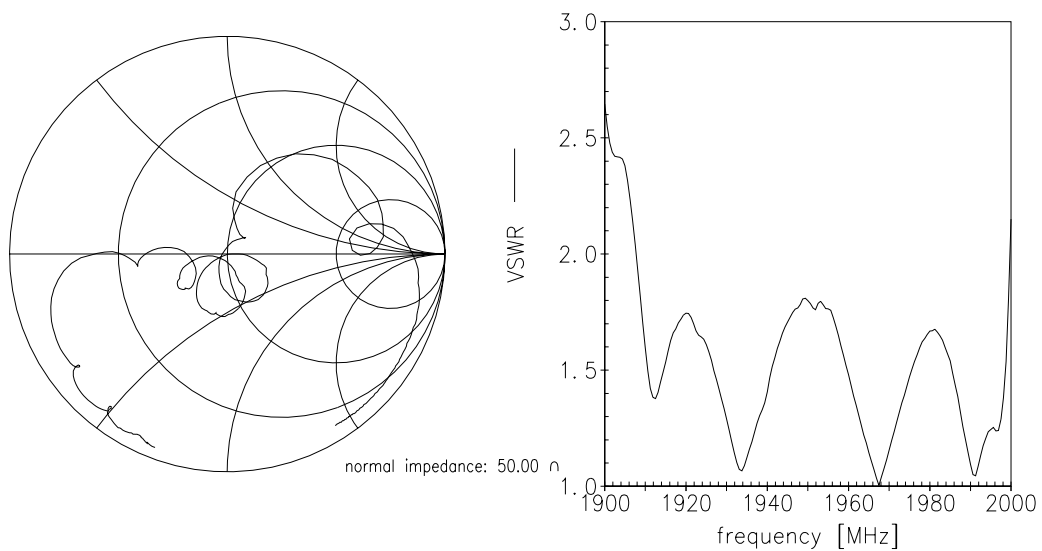


Smith chart

S_{11} function



S_{22} function



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Data Sheet

**References**

Type	B9414
Ordering Code	B39202B9414M410
Marking and Package	C61157-A8-A3
Packaging	F61074-V8237-Z000
Date Codes	L_1126
Soldering profile	S_6001
S-Parameters	B9414_NB.s2p, B9414_WB.s2p see file header for port/pin assignment table
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.

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

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Surface Acoustic Wave Components Division

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