



## SAW Components

### SAW Rx filter

WCDMA band I

<b>Series/type:</b>	<b>B9433</b>
<b>Ordering code:</b>	<b>B39212-B9433-M410</b>
Date:	Mar. 26, 2007
Version:	2.0

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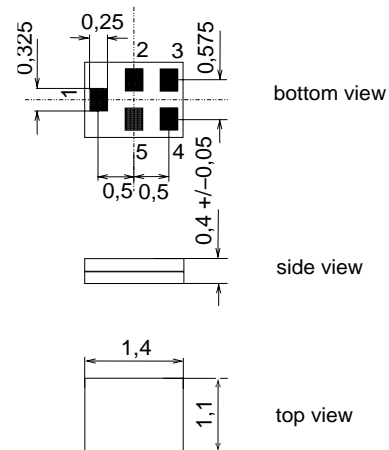
**Application**

- Low-loss RF filter for mobile telephone WCDMA Band 1 systems, receive path (RX)
- Unbalanced to unbalanced operation
- Low insertion attenuation
- Low amplitude ripple
- High selectivity up to 6 GHz
- Usable passband 60 MHz



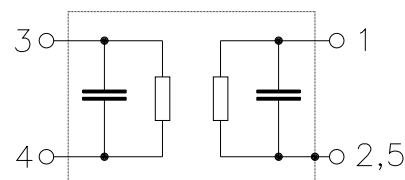
**Features**

- Package size 1.4 x 1.1 x 0.4 mm<sup>3</sup>
- Package code QCS51
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



**Pin configuration**

- 1 Unbalanced input
- 4 Unbalanced output
- 2,3,5 To be grounded





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Characteristics

Temperature range for specification: T = -30 °C to +85 °C  
 Terminating source impedance: Z<sub>S</sub> = 50Ω, 4.0 nH in parallel  
 Terminating load impedance: Z<sub>L</sub> = 50Ω, 1.3 nH in serial

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	2140.0	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>	—	2.0	2.3 <sup>1)</sup>	dB
2110.0 ... 2170.0 MHz					
<b>Amplitude ripple (p-p)</b>	Δα	—	0.6	1.0	dB
2110.0 ... 2170.0 MHz					
<b>Input VSWR</b>		—	1.5	1.9	
2110.0 ... 2170.0 MHz					
<b>Output VSWR</b>		—	1.5	1.9	
2110.0 ... 2170.0 MHz					
<b>EVM</b>		—	1.0	—	%
2110.0 ... 2170.0 MHz					
<b>Attenuation</b>	α				dB
100.0 ... 925.0 MHz		46	49	—	
925.0 ... 1300.0 MHz		40	44	—	
1300.0 ... 1800.0 MHz		38	43	—	
1800.0 ... 1920.0 MHz		38	43	—	
1920.0 ... 1980.0 MHz		43	49	—	
1980.0 ... 2025.0 MHz		30	45	—	
2025.0 ... 2050.0 MHz		17	24	—	
2050.0 ... 2075.0 MHz		5	9	—	
2210.0 ... 2255.0 MHz		12	32	—	
2255.0 ... 2300.0 MHz		20	33	—	
2300.0 ... 2400.0 MHz		31	38	—	
2400.0 ... 2500.0 MHz		35	41	—	
2500.0 ... 2800.0 MHz		37	47	—	
2800.0 ... 3200.0 MHz		35	39	—	
3200.0 ... 6000.0 MHz		40	54	—	

<sup>1)</sup> including a pcb loss of 0.2dB



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### Maximum ratings

Operable temperature range	T	-30/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model, 10 pulses
Input power at				
WCDMA Band I	P <sub>IN</sub>	0	dBm	effective power in the on-state
Tx band	P <sub>IN</sub>	24	dBm	CW, +65°C 2000hr

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



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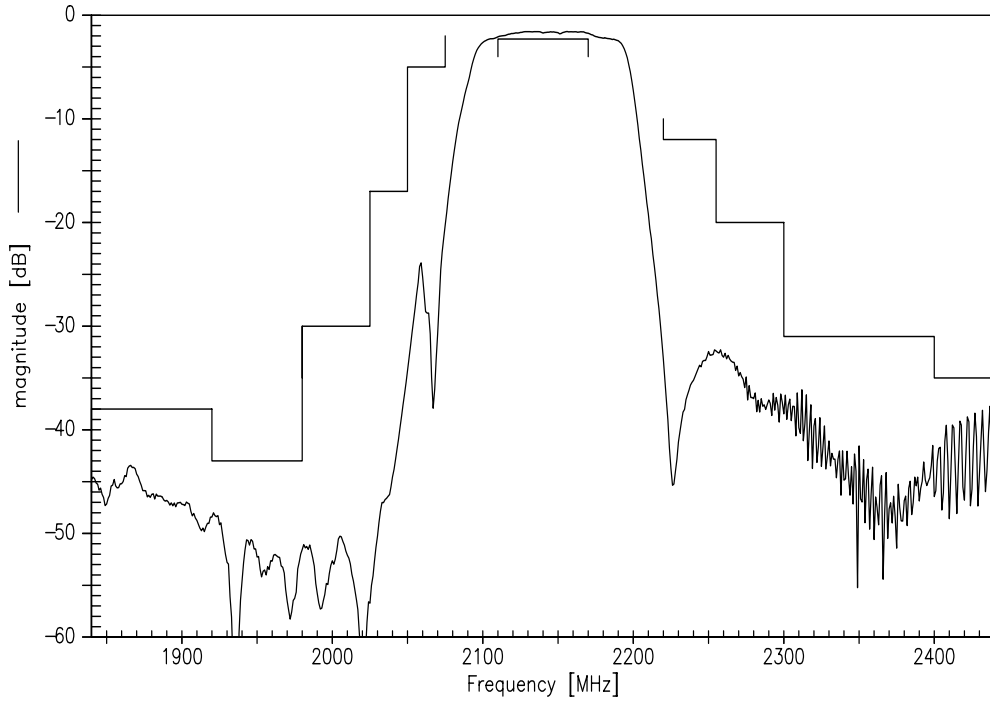
SAW Rx filter

2140.0 MHz

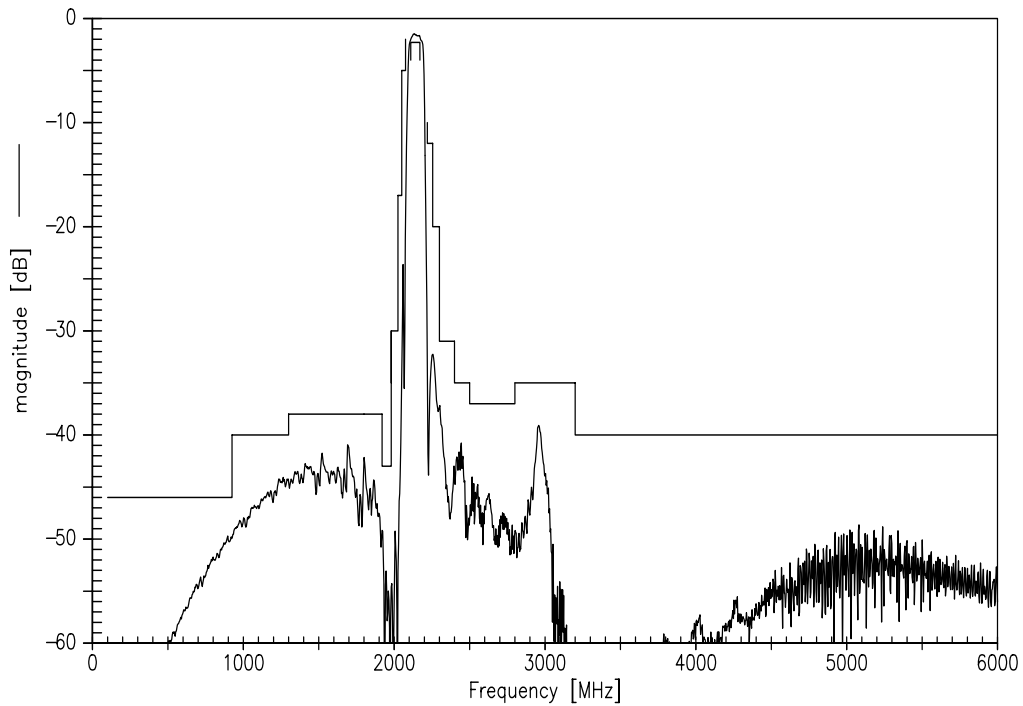
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### Transfer function



### Transfer function (wideband)



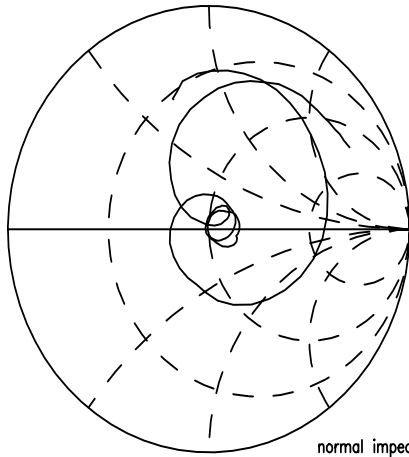
Please read *cautions and warnings* and *important notes* at the end of this document.

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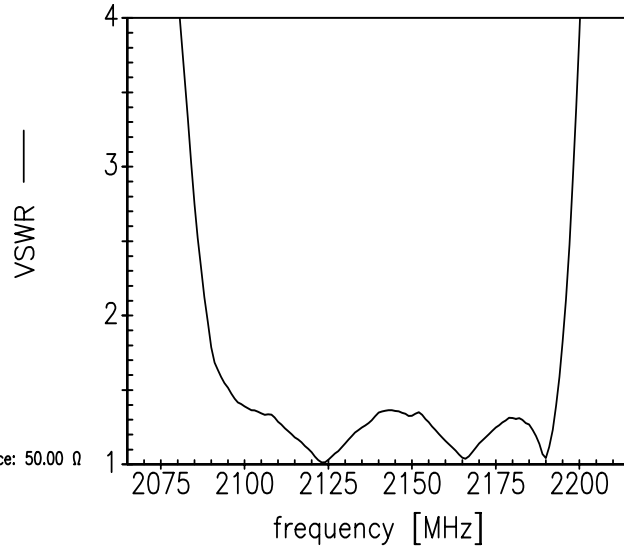


Smith chart

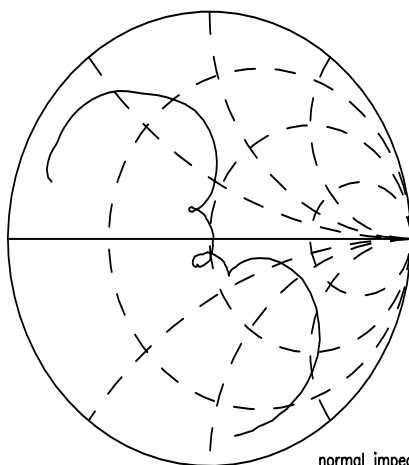
$S_{11}$  function



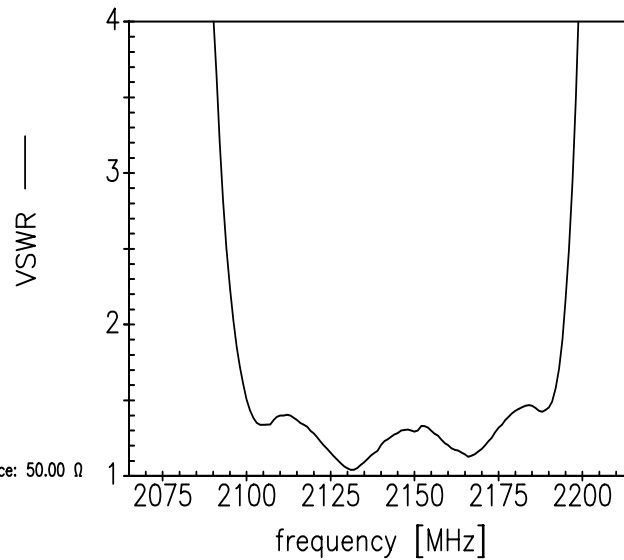
normal impedance: 50.00  $\Omega$



$S_{22}$  function



normal impedance: 50.00  $\Omega$



**SAW Components****B9433****SAW Rx filter****2140.0 MHz**

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**References**

<b>Type</b>	B9433
<b>Ordering code</b>	B39212-B9433-M410
<b>Marking and package</b>	C61157-A8-A3
<b>Packaging</b>	F61074-V8212-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9433_NB.s2p B9433_WB.s2p
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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."
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.

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

**7** March 26, 2007



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