



SAW Components

SAW Rx Filter

WCDMA Band I

Series/Type: **B9411**
Ordering code:

Date: December 19, 2005
Version: 1.0



SAW Components

B9411

Low-Loss Filter for Mobile Communication

2140.0 MHz

Preliminary Data



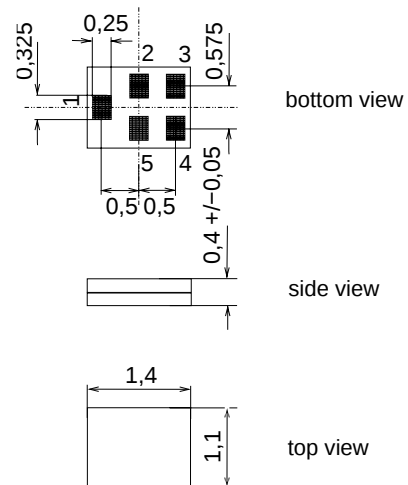
Application

- Low-loss RF filter for mobile telephone WCDMA systems, receive path (RX)
- Impedance transform from 50 Ω to 100 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz



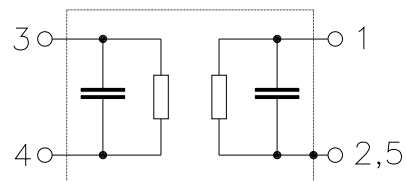
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5F
- 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: $T = -10\text{ °C to }+85\text{ °C}$
Terminating source impedance: $Z_S = 50\ \Omega$
Terminating load impedance: $Z_L = 100\ \Omega \parallel 20\text{ nH (balanced)}$

		B9411 ¹⁾			DGL ²⁾	
		min.	typ. @ 25 °C	max.	min./ max.	
Center frequency	f_C	—	2140.0	—		MHz
Maximum insertion attenuation	$\alpha_{\max}$					
2110.0 ... 2170.0 MHz		—	2.0	2.3		dB
Amplitude ripple (p-p)	$\Delta\alpha$					
2110.0 ... 2170.0 MHz		—	0.8	1.2		dB
Input VSWR						
2110.0 ... 2170.0 MHz		—	1.8	2.2	2.1	
Output VSWR						
2110.0 ... 2170.0 MHz		—	1.9	2.2	2.1	
Output amplitude balance (S_{31}/S_{21})						
2110.0 ... 2170.0 MHz		-1.0	-0.8/0.4	1.0		dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)						
2110.0 ... 2170.0 MHz		-10	-6/+3	10		°
Attenuation	α					
0.0 ... 1920.0 MHz		35	44	—		dB
1920.0 ... 1980.0 MHz		40	49	—		dB
1980.0 ... 2025.0 MHz		32	36	—		dB
2025.0 ... 2050.0 MHz		20	26	—		dB
2250.0 ... 6000.0 MHz		20	28	—		dB

¹⁾ Values in columns min, typ and max indicate the development status of the current version.

²⁾ Values in column DesignGoal (DGL) indicate the target performance.

**SAW Components****B9411****Low-Loss Filter for Mobile Communication****2140.0 MHz****Preliminary Data****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	5	dBm	cw signal

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



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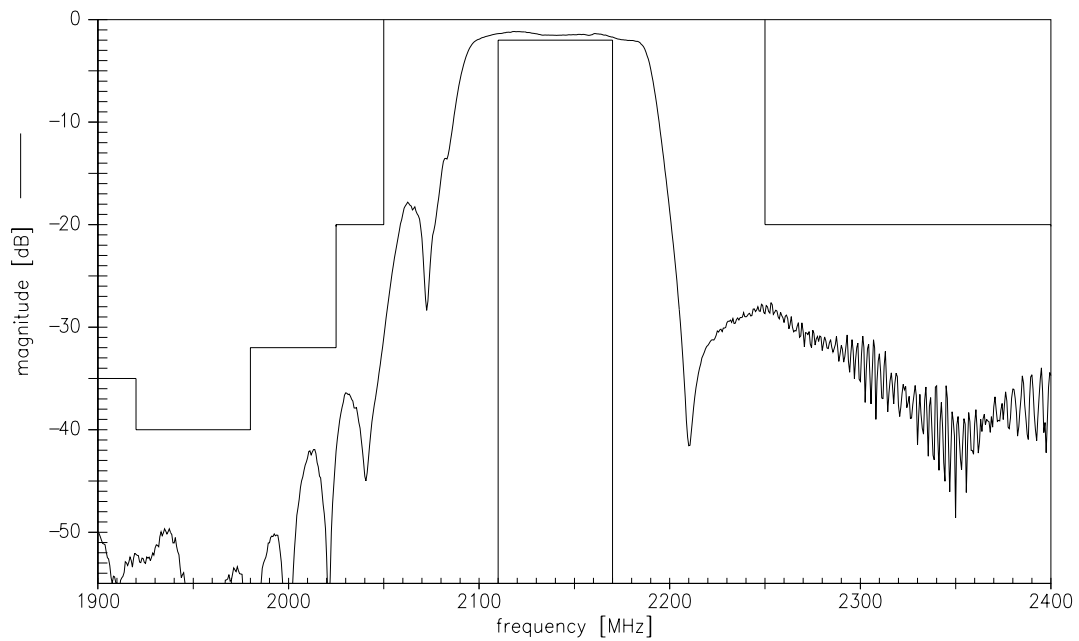
Low-Loss Filter for Mobile Communication

2140.0 MHz

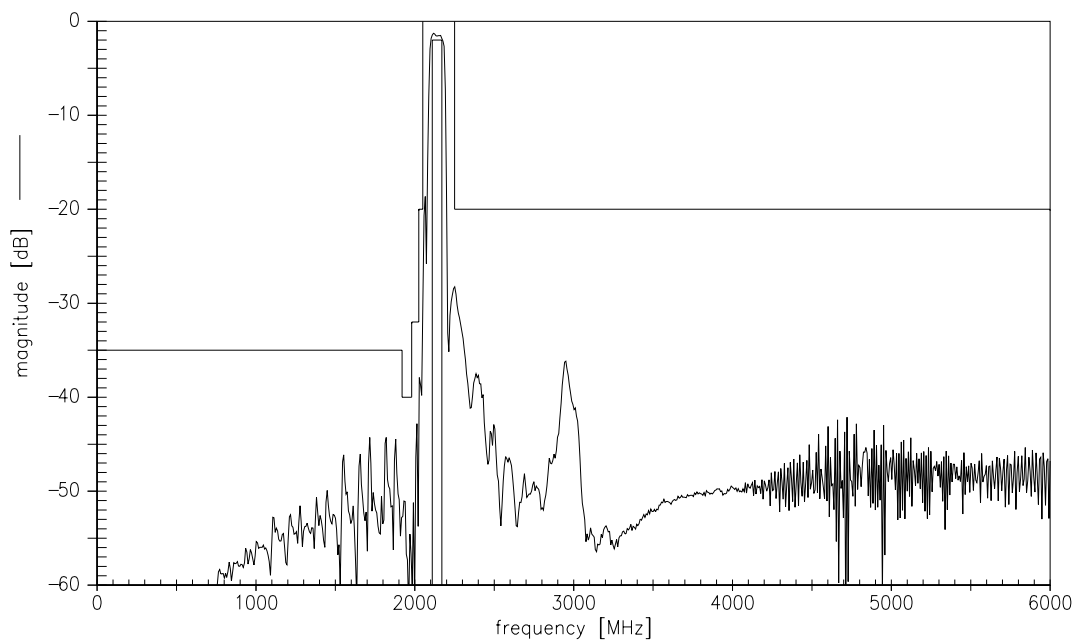
Preliminary Data



Transfer function



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

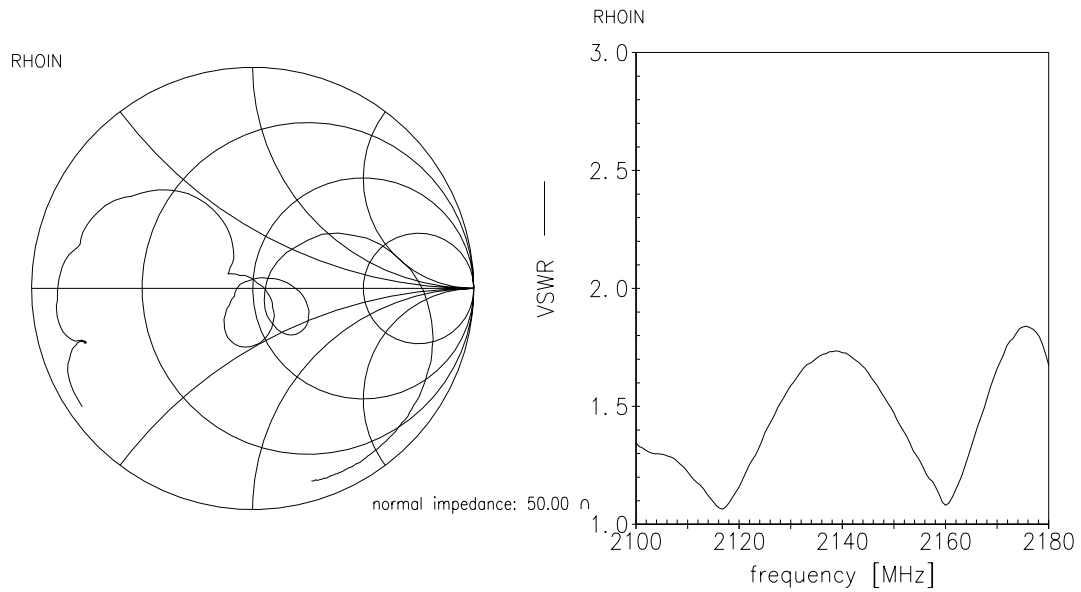
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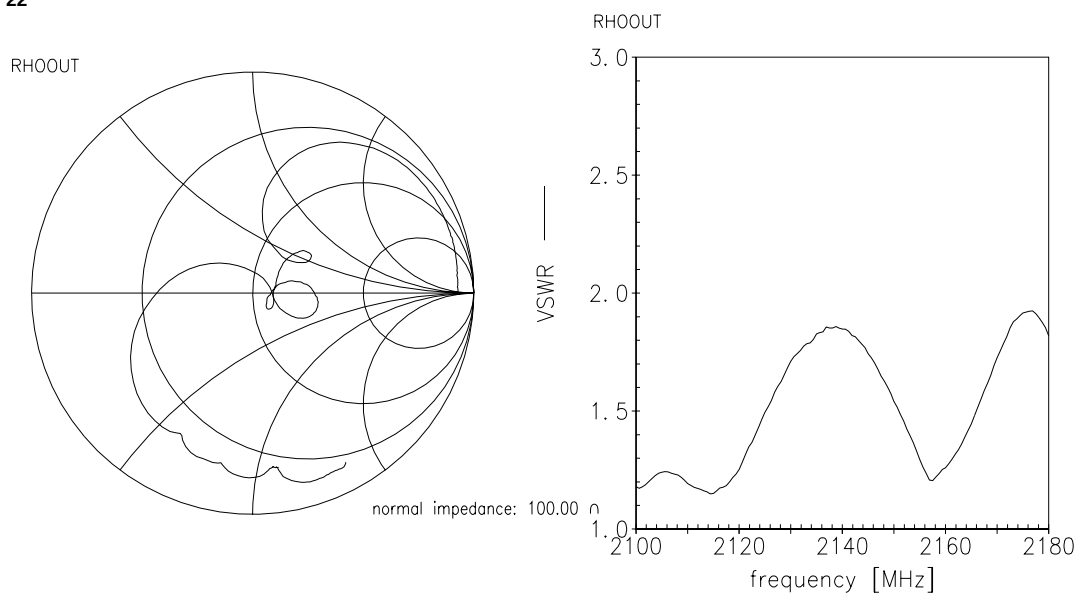


Smith chart

S_{11} function



S_{22} function



**SAW Components****B9411****Low-Loss Filter for Mobile Communication****2140.0 MHz**

Preliminary Data



Type	B9411	
Ordering code		
Marking and Package		
Packaging		
Date Codes	L_1126	
S-Parameters	B9411_PB.s3p B9411_WB.s3p	
Soldering profile	S_6001	

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

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