



## **SAW Components**

### **SAW Rx Filter**

WCDMA Band I

<b>Series/Type:</b>	<b>B7849</b>
<b>Ordering code:</b>	<b>B39212B7849K410</b>
<b>Date:</b>	<b>May 19, 2006</b>
<b>Version:</b>	<b>2.0</b>



Data Sheet



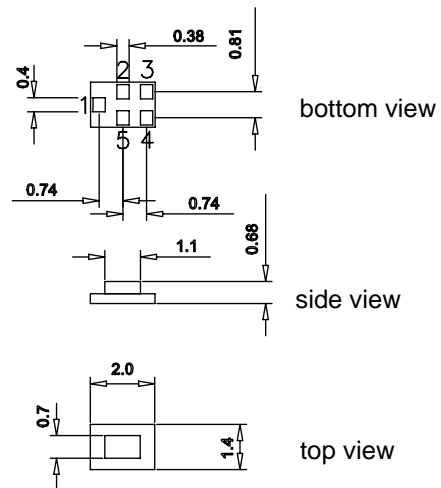
Application

- Low-loss RF filter for mobile telephone WCDMA systems, receive path (RX)
- Impedance transform from 50 Ω to 200 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Very high Tx-suppression
- Passband with very low error vector magnitude (EVM)
- Low amplitude ripple
- Very low ripple over any 3.84 MHz as well as 5.0 MHz within the passband
- Usable passband 60 MHz



Features

- Package size 2.0 x 1.4 x 0.68 mm<sup>3</sup>
- Package code QCS5E
- RoHS compliant
- Approx. weight 0.007 g
- Package for Surface Mount Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)



Pin configuration

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





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**2140.0 MHz**

**Data Sheet**



**Characteristics**

Operating temperature range:  $T = -10\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 200\ \Omega \parallel 10\text{ nH (balanced)}$

		<b>B7849</b>			
		<b>min.</b>	<b>typ. @ 25 °C</b>	<b>max.</b>	
<b>Center frequency</b>	$f_C$	—	2140.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$				
2110.0 ... 2170.0	MHz	—	1.6	2.1	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
2110.0 ... 2170.0	MHz	—	0.4	1.0	dB
<b>Input VSWR</b>					
2110.0 ... 2170.0	MHz	—	1.6	2.1	
<b>Output VSWR</b>					
2110.0 ... 2170.0	MHz	—	1.5	2.1	
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
2110.0 ... 2170.0	MHz	-1.0	-0.7/0.7	1.0	dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
2110.0 ... 2170.0	MHz	-10	-3/3	10	°
<b>Attenuation</b>	$\alpha$				
0.0 ... 1920.0	MHz	35	44	—	dB
1920.0 ... 1980.0	MHz	40	46	—	dB
1980.0 ... 2025.0	MHz	24	40	—	dB
2025.0 ... 2050.0	MHz	20	30	—	dB
2230.0 ... 2255.0	MHz	18	32	—	dB
2255.0 ... 2402.0	MHz	28	35	—	dB
2402.0 ... 2480.0	MHz	34	37	—	dB
2480.0 ... 4030.0	MHz	30	38	—	dB
4030.0 ... 4150.0	MHz	45	54	—	dB
4150.0 ... 4220.0	MHz	45	54	—	dB
4220.0 ... 4340.0	MHz	45	55	—	dB
4340.0 ... 6000.0	MHz	45	55	—	dB



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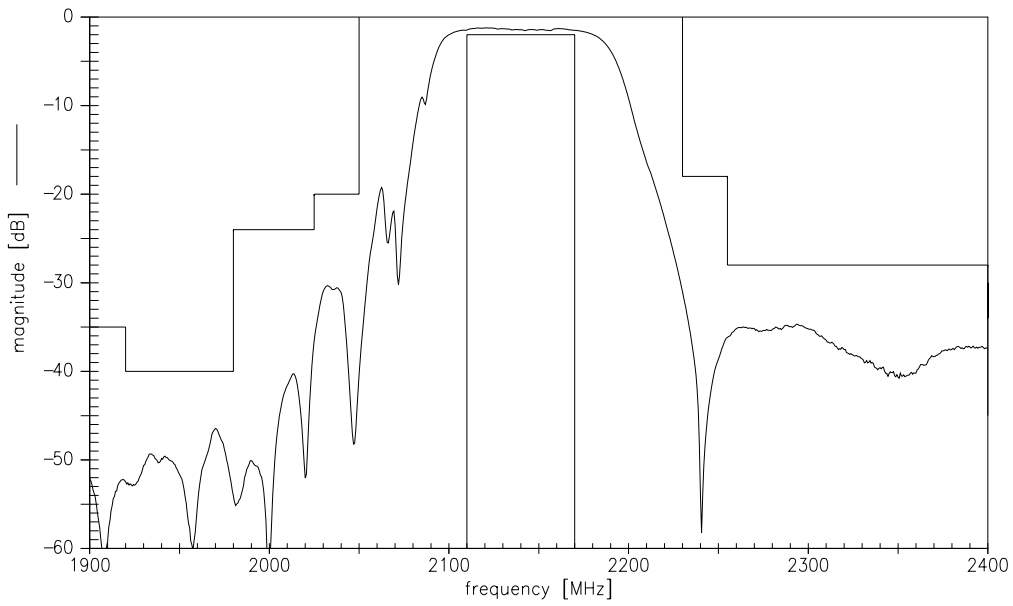
**Maximum ratings**

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
Source Power	P <sub>S</sub>	5	dBm	cw signal

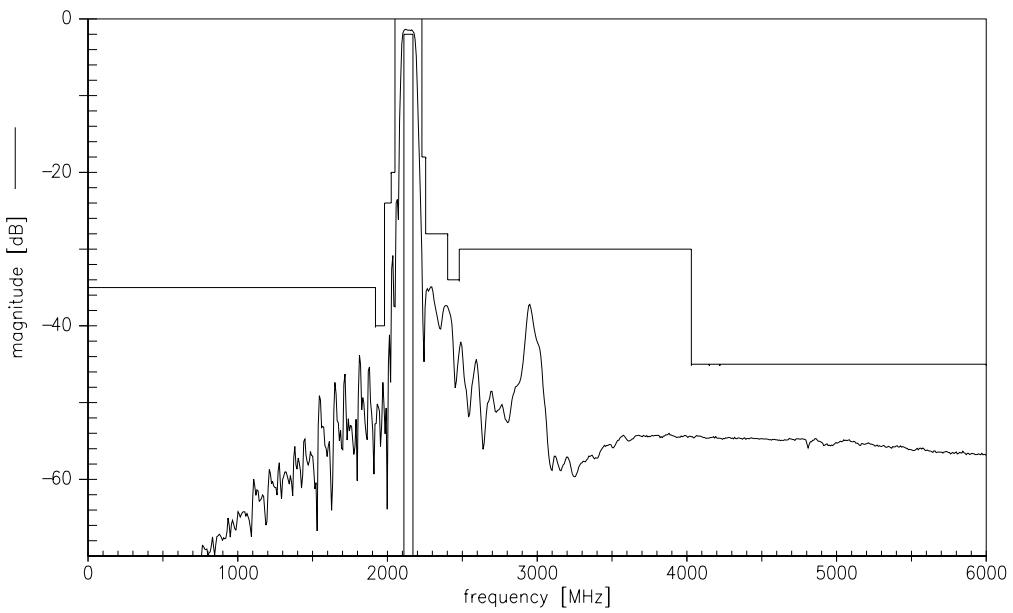
1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function



Transfer function (wideband)



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

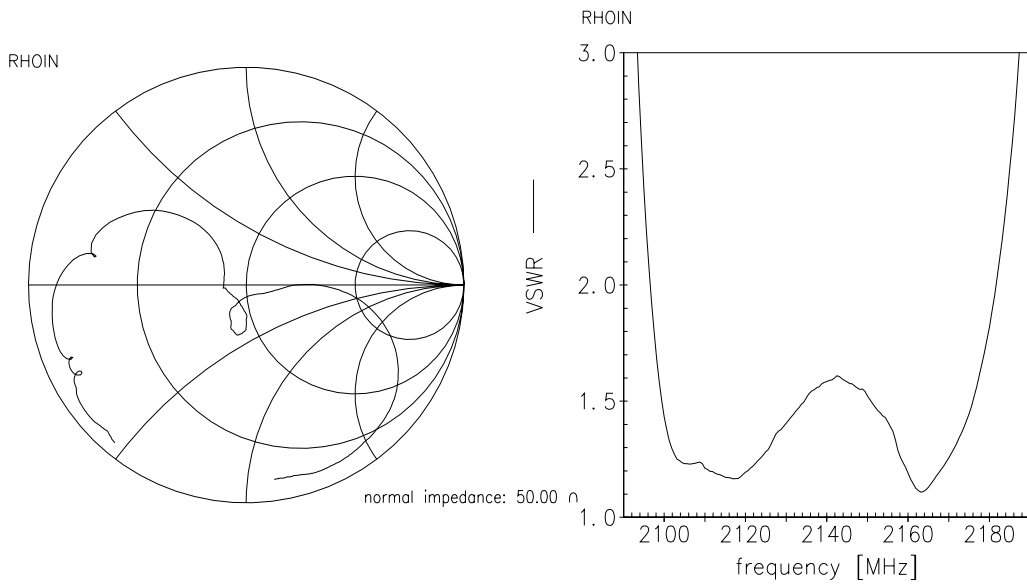


Data Sheet

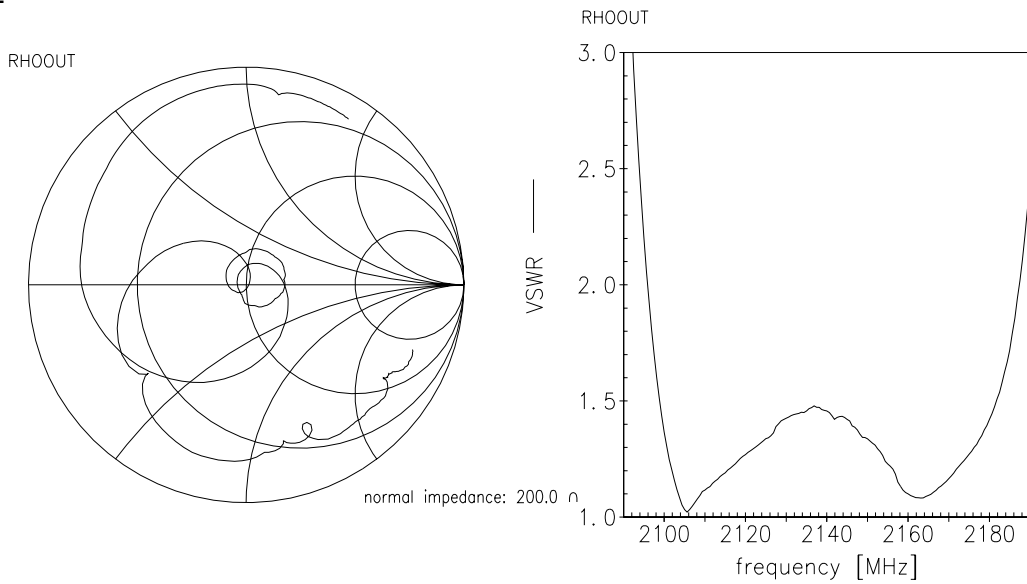


Smith chart

S<sub>11</sub> function



S<sub>22</sub> function





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<b>Type</b>	B7849
<b>Ordering code</b>	B39212B7849K410
<b>Marking and Package</b>	C61157-A7-A131
<b>Packaging</b>	F61074-V8151-Z000
<b>Date Codes</b>	L_1126
<b>S-Parameters</b>	B7849_NB.s3p B7849_WB.s3p
<b>Soldering profile</b>	S_6001
<b>RoHS compliant</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."

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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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