



## **SAW Components**

### **SAW Rx Filter**

K-PCS

<b>Series/type:</b>	<b>B7901</b>
<b>Ordering code:</b>	<b>B39182B7901K410</b>
<b>Date:</b>	<b>May 10, 2006</b>
<b>Version:</b>	<b>2.0</b>



SAW Components

B7901

SAW Rx Filter

1855.0 MHz

Data Sheet

SMD

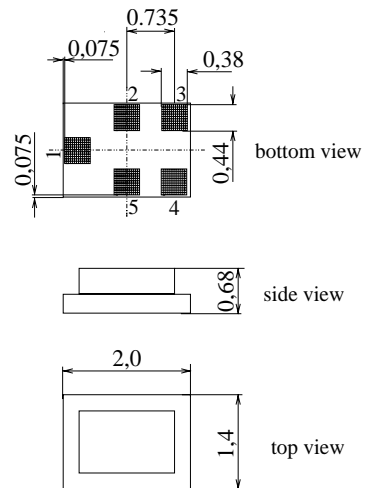
### Application

- Low loss RF filter for mobile telephone K-PCS systems, receive path (Rx)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 30.0 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50  $\Omega$  to 100  $\Omega$



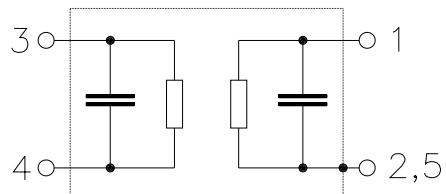
### Features

- Package size 2.0 x 1.4 x 0.68 mm<sup>3</sup>
- Package code QCS5E
- RoHS compatible
- Approx. weight 0.007g
- 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 Case-ground



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



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**Characteristics**

Temperature range for specification:  $T = -30\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 100\ \Omega$  (balanced)

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1855.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	1.6	2.4 <sup>1)</sup>	dB
1840.0 ... 1870.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.3	0.8	dB
1840.0 ... 1870.0 MHz					
<b>Input VSWR</b>		—	1.4	1.8	
1840.0 ... 1870.0 MHz					
<b>Output VSWR</b>		—	1.5	1.9	
1840.0 ... 1870.0 MHz					
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>		-1.0	-0.3/0.3	1.0	dB
1840.0 ... 1870.0 MHz					
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^\circ</math>)</b>		-10	-5/+5	10	°
1840.0 ... 1870.0 MHz					
<b>Attenuation</b>	$\alpha$				
10.0 ... 1750.0 MHz		42	49	—	dB
1750.0 ... 1780.0 MHz		37	40	—	
1930.0 ... 1975.0 MHz		28	32	—	dB
1975.0 ... 2020.0 MHz		36	42	—	
2020.0 ... 2100.0 MHz		40	46	—	dB
2100.0 ... 2500.0 MHz		45	49	—	
2500.0 ... 2650.0 MHz		42	45	—	dB
2650.0 ... 4000.0 MHz		45	60	—	

<sup>1)</sup> 2.2 dB max. at 25 °C



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### Maximum ratings

Operable temperature range	T	-40/+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 1750...1780 MHz Tx band	P <sub>IN</sub>	5	dBm	continuous wave

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



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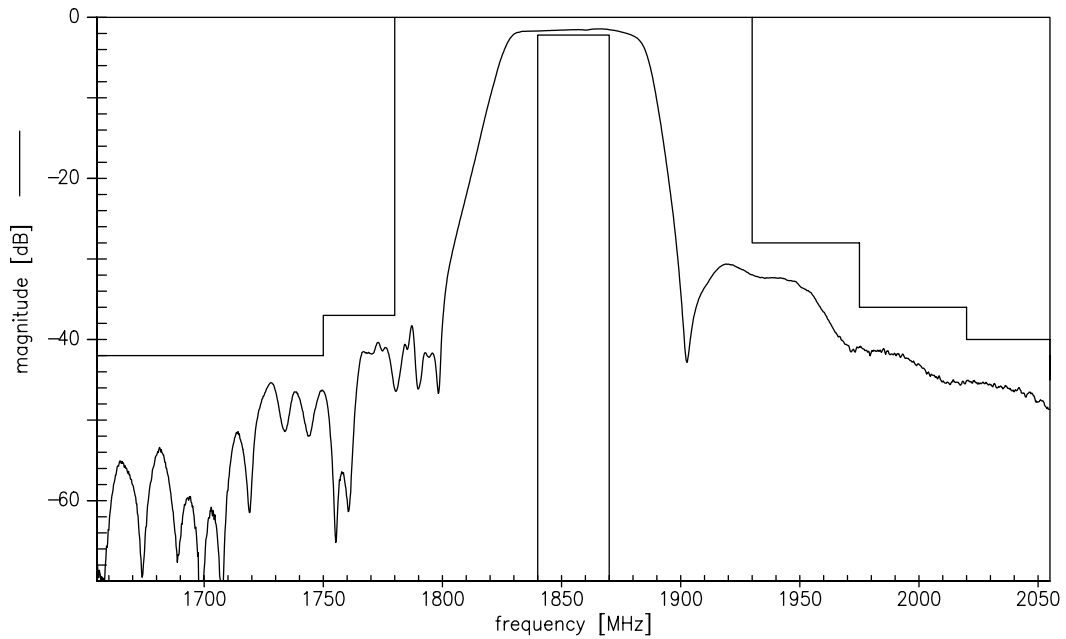
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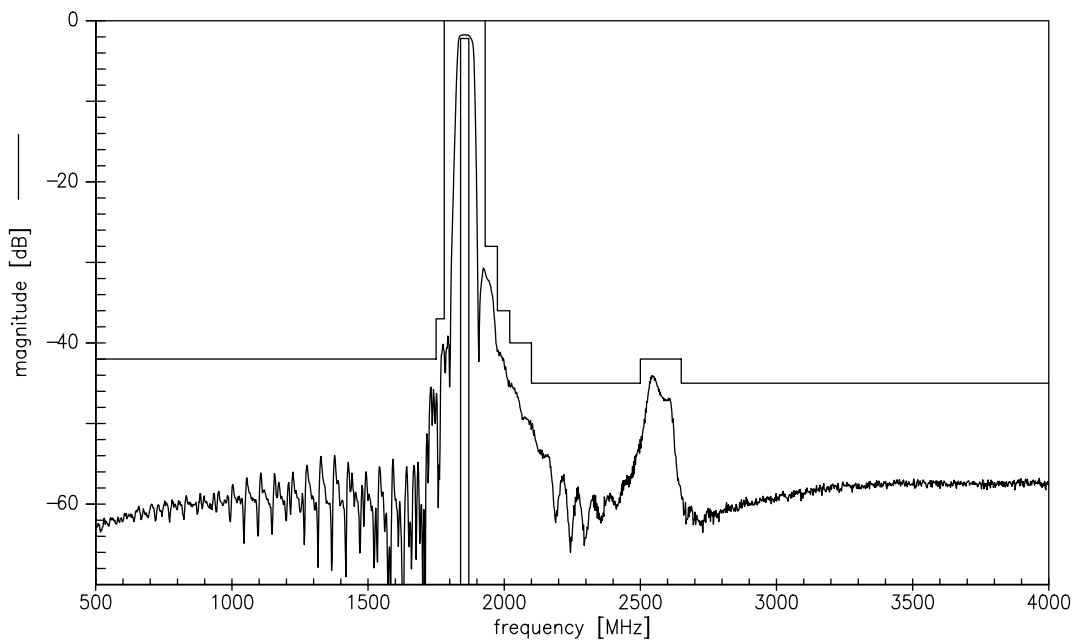
Data Sheet



Transfer function (narrowband)



Transfer function (wideband)



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

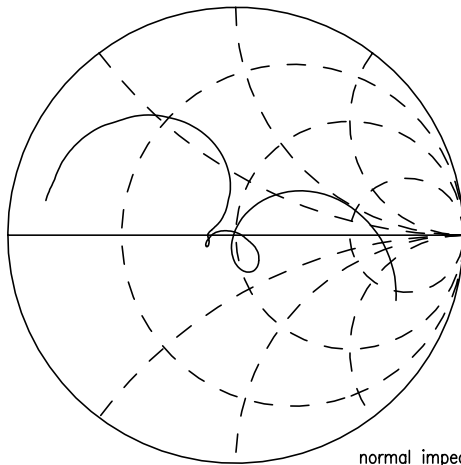


Data Sheet

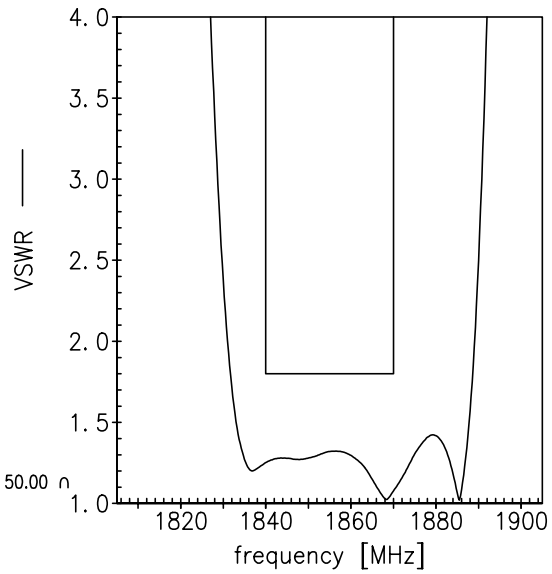


Smith chart

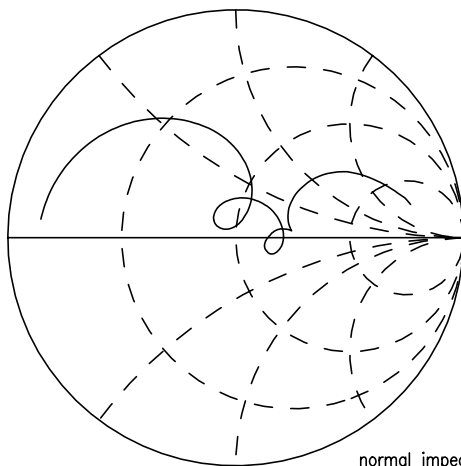
S<sub>11</sub> function



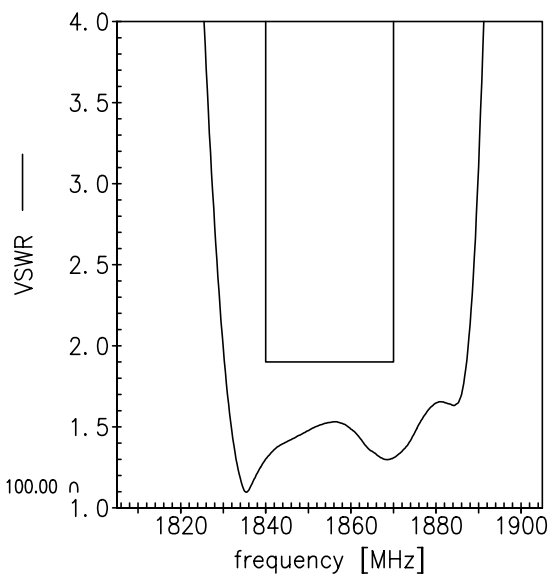
normal impedance: 50.00  $\Omega$



S<sub>22</sub> function

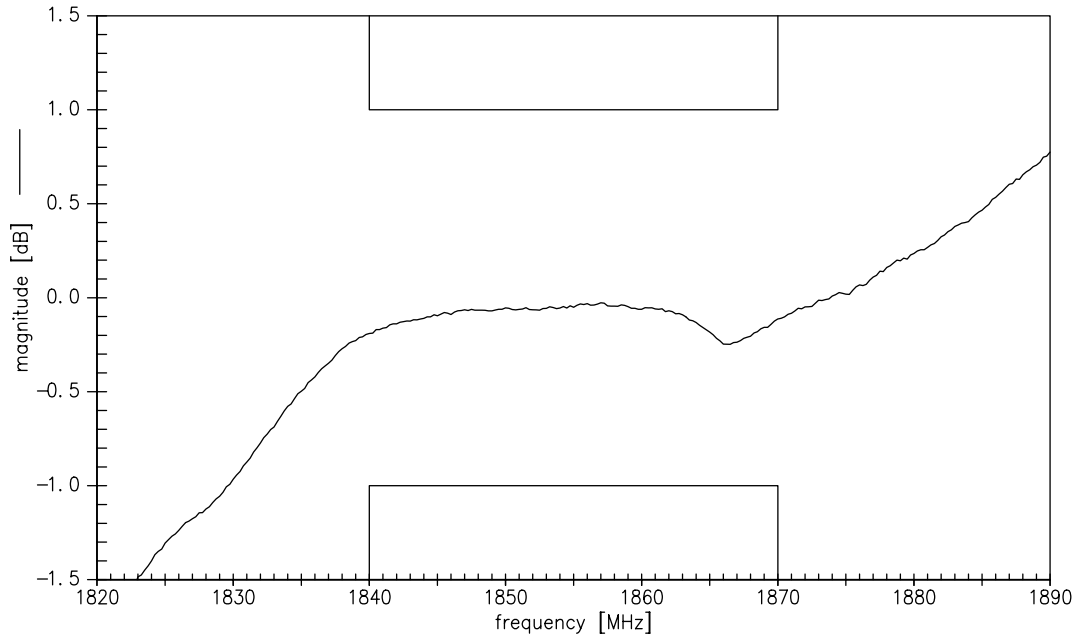


normal impedance: 100.00  $\Omega$

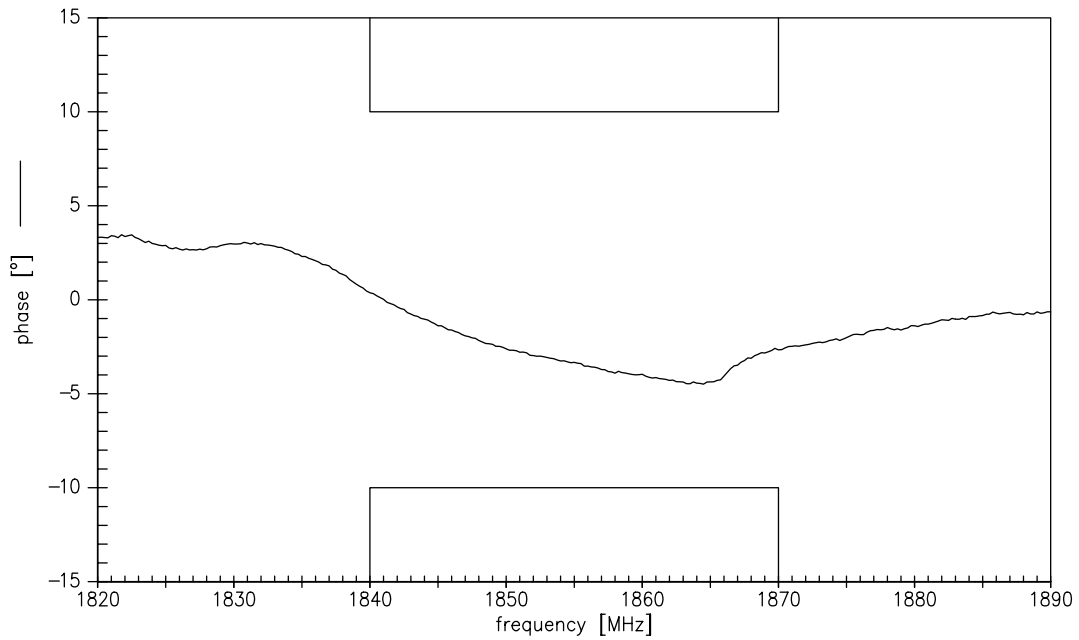




Amplitude balance



Phase balance





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## References

Type	B7901
Ordering code	B39182B7901K410
Marking and package	C61157-A7-A131
Packaging	F61074-V8152-Z000
Date codes	L_1126
S-parameters	B7901_NB.s3p B7901_WB.s3p
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."

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