



## **SAW Components**

### **SAW Rx Filter**

Low Loss Filter for Mobile Telephone PCS system

<b>Series/type:</b>	<b>B4150</b>
<b>Ordering code:</b>	<b>B39202B4150U410</b>
<b>Date:</b>	<b>November 24, 2009</b>
<b>Version:</b>	<b>2.0</b>



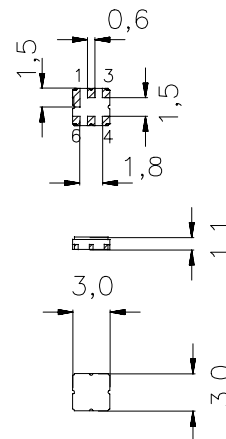
**Application**

- Low-loss RF filter for mobile telephone, receive path  
PCS systems, receive path
- Usable passband of 60MHz
- No matching required for operation at 50 Ω



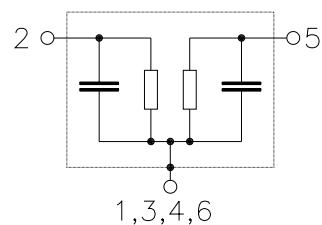
**Features**

- Package size 3.0x 3.0 x 1.1 mm<sup>3</sup>
- Package code DCC6C
- Approx. weight 0.037 g
- Ceramic package for **Surface Mount Technology (SMT)**
- RoHS compliant
- Ni, gold-plated



**Pin configuration**

- 2 Input
- 1,3 To be ground
- 5 Output
- 4,6 To be ground





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**1960.0 MHz**

Data sheet



**Characteristics**

Temperature range for specification:  $T = 25 \pm 2^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1960.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	2.8	3.5	dB
1930.0 ... 1990.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	0.9	1.6	dB
1930.0 ... 1990.0 MHz					
<b>Input return loss</b>		9.5	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Output return loss</b>		9.5	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Attenuation</b>	$\alpha$	20	21	—	dB
10.0 ... 1850.0 MHz		21	30	—	
1850.0 ... 1910.0 MHz		25	27	—	
2040.0 ... 2100.0 MHz		20	25	—	
2100.0 ... 5000.0 MHz		8	18	—	
5000.0 ... 6000.0 MHz					



Data sheet



Characteristics

Temperature range for specification:  $T = -30$  to  $+80$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1960.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3.2	5.3	dB
1930.0 ... 1990.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.2	3.2	dB
1930.0 ... 1990.0 MHz					
<b>Input return loss</b>		9.5	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Output return loss</b>		9.5	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Attenuation</b>	$\alpha$	20	21	—	dB
10.0 ... 1850.0 MHz		15	30	—	
1850.0 ... 1910.0 MHz		25	27	—	
2040.0 ... 2100.0 MHz		20	25	—	
2100.0 ... 5000.0 MHz		8	18	—	
5000.0 ... 6000.0 MHz					



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**Characteristics**

Temperature range for specification:  $T = -30$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1960.0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3.2	5.3	dB
1930.0 ... 1990.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.2	3.2	dB
1930.0 ... 1990.0 MHz					
<b>Input return loss</b>		9.0	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Output return loss</b>		9.0	10.5	—	dB
1930.0 ... 1990.0 MHz					
<b>Attenuation</b>	$\alpha$	20	21	—	dB
10.0 ... 1850.0 MHz		14	30	—	
1850.0 ... 1910.0 MHz		25	27	—	
2040.0 ... 2100.0 MHz		20	25	—	
2100.0 ... 5000.0 MHz		8	18	—	



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**Maximum ratings**

Operable temperature range	T	-30 / +85	°C	source and load impedance 50 Ω peak power of TDMA signal, duty cycle 1 : 3 continuous wave
Storage temperature range	T <sub>stg</sub>	-40 / +85	°C	
DC voltage	V <sub>DC</sub>	0	V	
Input power max 1930.0...1990.0 MHz	P <sub>IN</sub>	13 10	dBm dBm	



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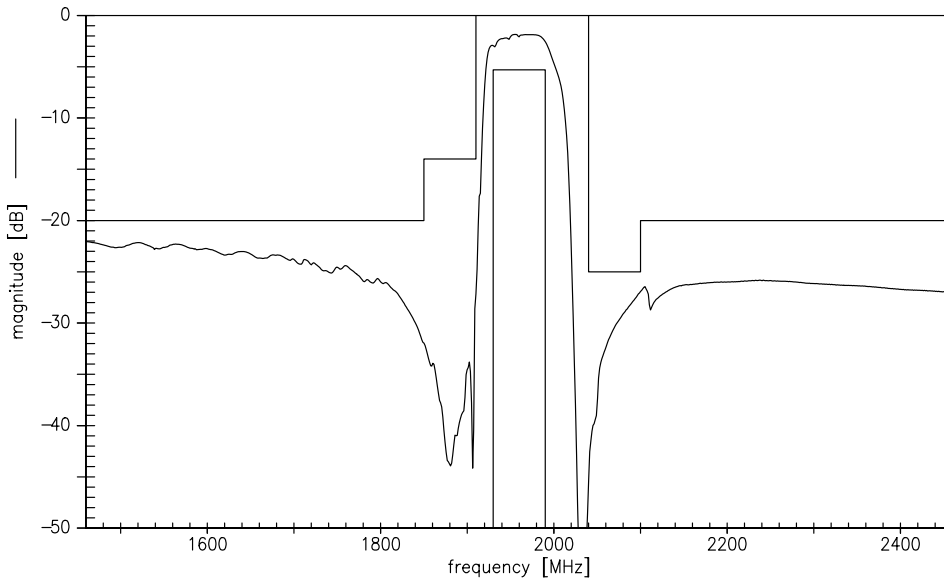
SAW Rx Filter

1960.0 MHz

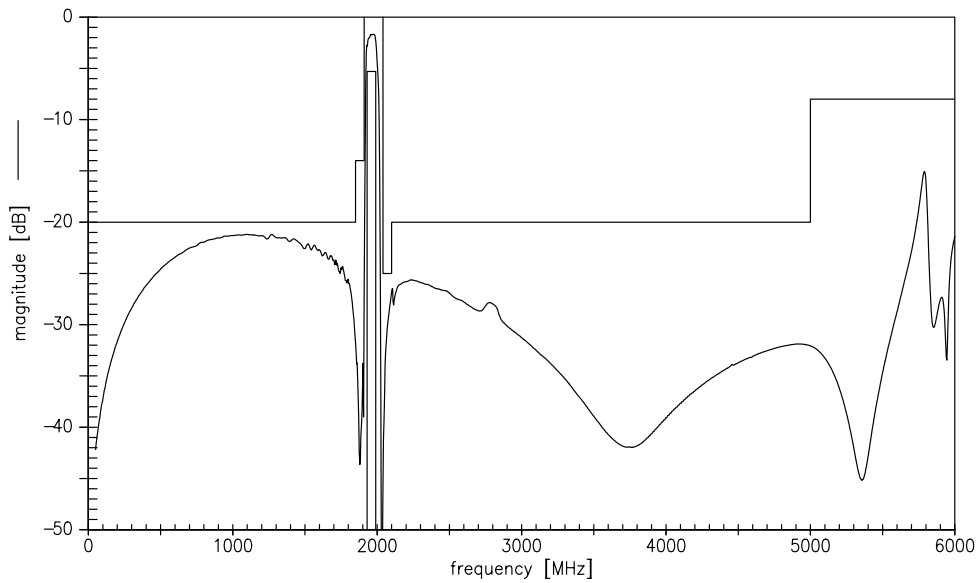
Data sheet



Transfer function (narrowband)



Transfer function (wideband)



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

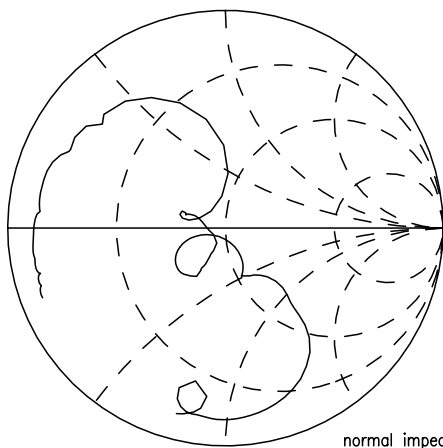


Data sheet

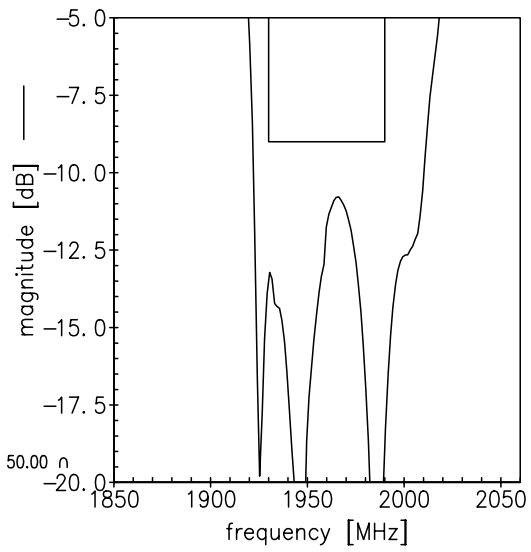


Smith charts

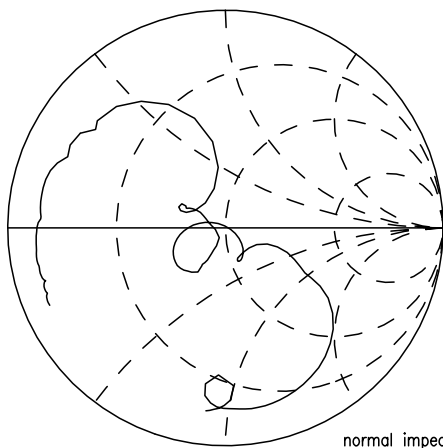
S<sub>11</sub> function



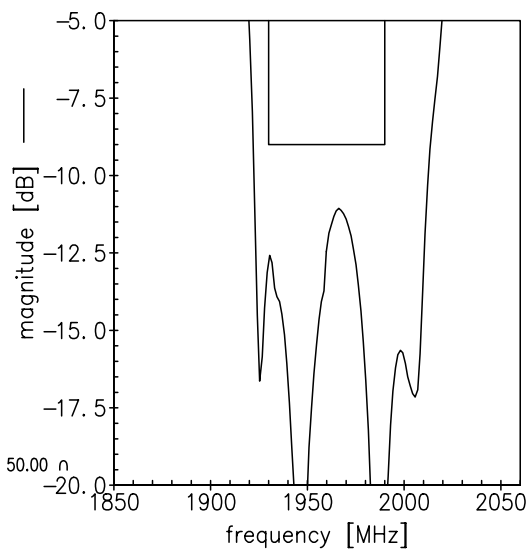
normal impedance: 50.00  $\Omega$



S<sub>22</sub> function



normal impedance: 50.00  $\Omega$







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1960.0 MHz

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## References

Type	B4150
Ordering code	B39202B4150U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8088-Z000
Date codes	L_1126
S-parameters	B4150_NB.s2p B4150_WB.s2p See file header for port/pin assignment table
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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Published by EPCOS AG  
Surface Acoustic Wave Components Division  
P.O. Box 80 17 09, 81617 Munich, GERMANY

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