



# SAW Components

## SAW GPS + GLONASS Filter

<b>Series/type:</b>	<b>B9877</b>
<b>Ordering code:</b>	<b>B39162B9877P810</b>
Date:	June 17, 2013
Version:	2.0

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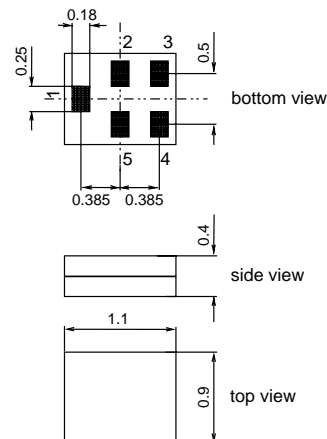
**Data Sheet**

**Application**

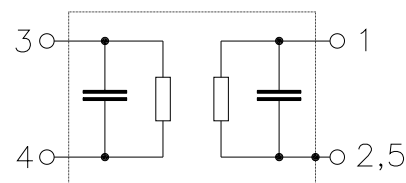
- Low-loss RF GPS + GLONASS filter
- Simultaneous usage of GPS band and GLONASS band
- Usable passbands: 2.0 MHz for GPS and 8.34 MHz for GLONASS
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- High out of band selectivity
- Low amplitude ripple
- Filter impedance 50 Ω
- No matching network required for operation at 50 Ω
- Input & Output can be exchanged, B9877 is bidirectional type.


**Features**

- Package size 1.1 x 0.9 x 0.4 mm<sup>3</sup>
- RoHS compatible
- Approximate weight 0.0012 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3 (MSL3)**


**Pin configuration**

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



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

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**SAW GPS + GLONASS Filter**
**1585.155 MHz**
**Data Sheet**

**Characteristics of Filter**

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

		B9877			
		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1585.66	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$				
1574.42 ... 1576.42 MHz		—	0.9	1.3	dB
1597.55 ... 1605.89 MHz		—	1.5	2.0	dB
<b>VSWR (Input)</b>					
1574.42 ... 1576.42 MHz		—	1.2	2.0	
1597.55 ... 1605.89 MHz		—	1.5	2.0	
<b>VSWR ( Output)</b>					
1574.42 ... 1576.42 MHz		—	1.2	2.0	
1597.55 ... 1605.89 MHz		—	1.5	2.0	
<b>Group delay ripple<sup>1)</sup></b>					
1597.55 ... 1605.89 MHz		—	4	10	ns
<b>Attenuation</b>	$\alpha$				
1.0 ... 960.0 MHz		40	43	—	dB
1427.0 ... 1453.0 MHz		44	55	—	dB
1501.0 ... 1525.0 MHz		40	44	—	dB
1710.0 ... 1785.0 MHz		43	46	—	dB
1850.0 ... 1910.0 MHz		44	49	—	dB
1920.0 ... 1980.0 MHz		46	50	—	dB
2110.0 ... 2170.0 MHz		46	49	—	dB
2401.0 ... 2483.0 MHz		42	50	—	dB
2500.0 ... 2570.0 MHz		40	48	—	dB
4900.0 ... 5850.0 MHz		20	30	—	dB

<sup>1)</sup> Measured with aperture 2 MHz.

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**Maximum ratings of Filter**

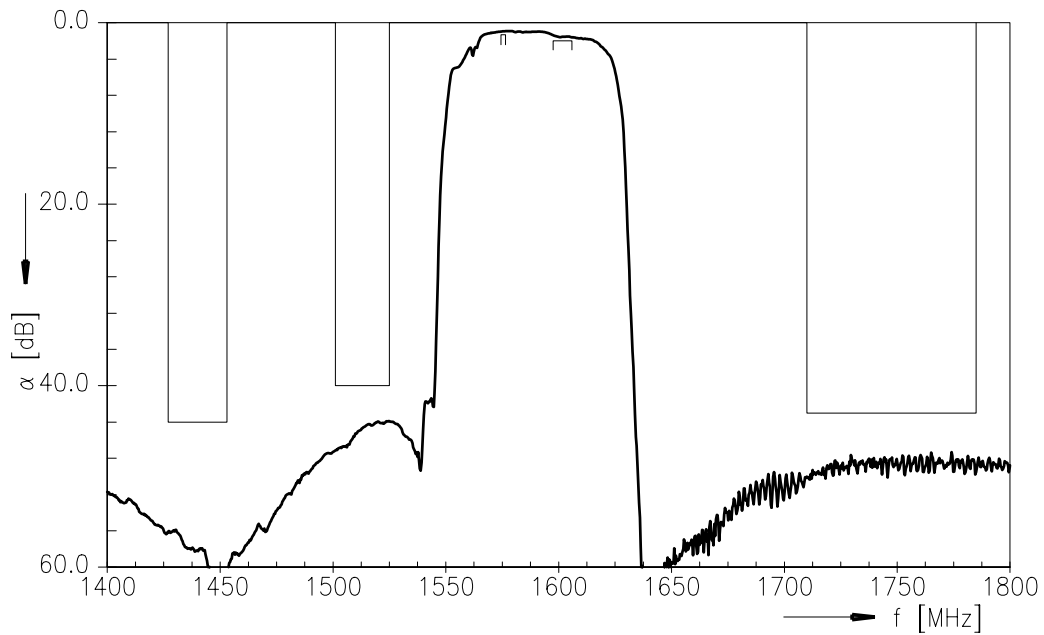
Operable temperature range	T	-30/+85	°C	
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	0	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model
Input power at				source/load impedance 50Ω/50Ω
915 MHz	P <sub>IN</sub>	23 <sup>2)</sup>	dBm	1/8 duty cycle
1453 MHz	P <sub>IN</sub>	15	dBm	cw
1710 MHz	P <sub>IN</sub>	15	dBm	cw

<sup>1)</sup> acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

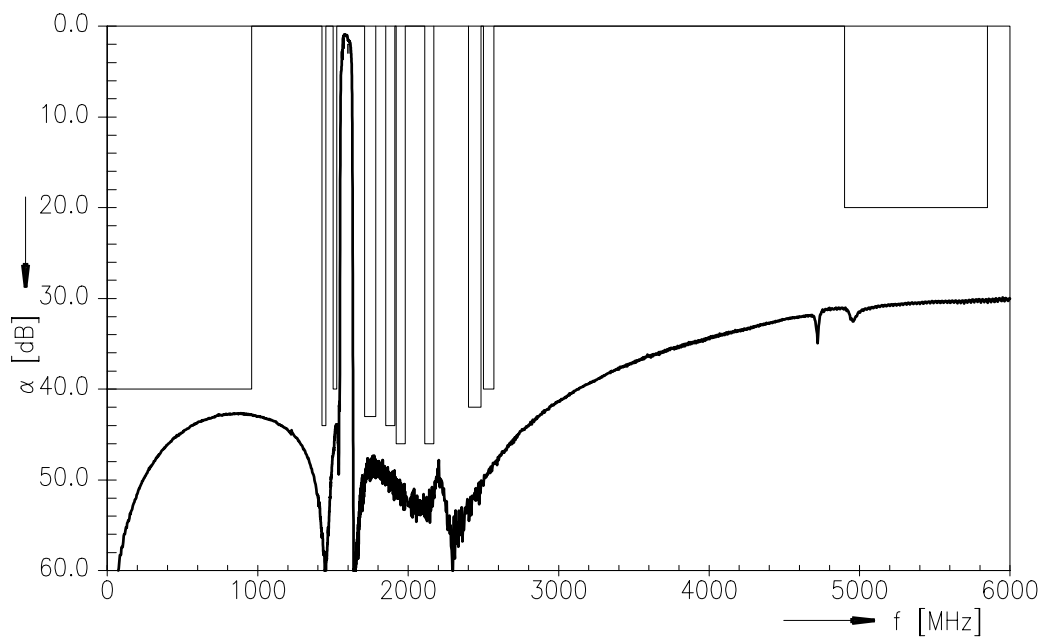
<sup>2)</sup> >5000 h at Ta = 50°C .



Transfer function (passband)



Transfer function (wideband)



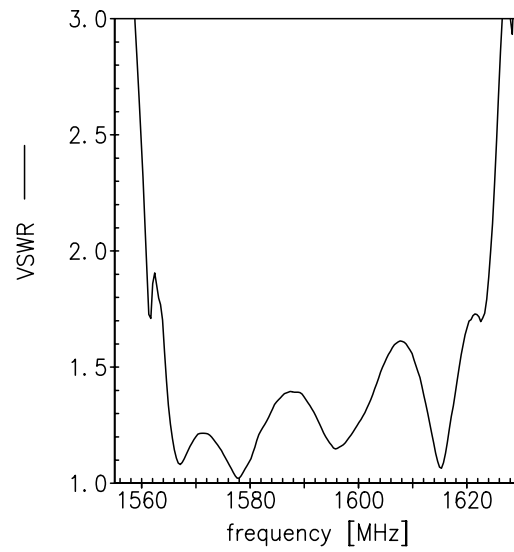
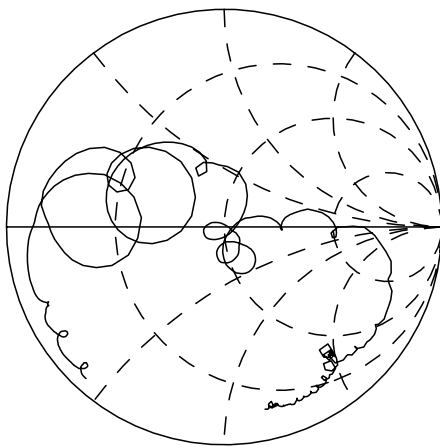
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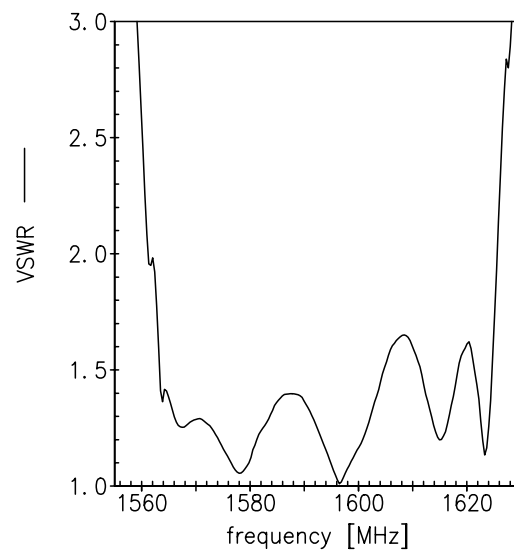
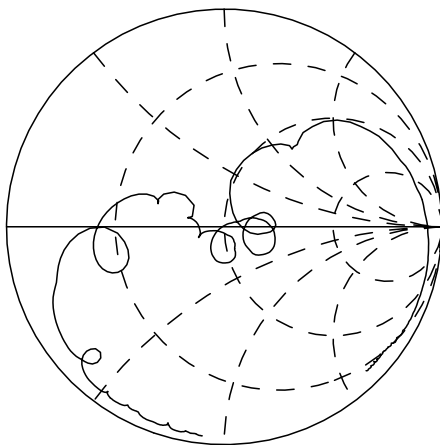


Smith chart / VSWR

Input (pin1)



Output (pin4)



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<b>Type</b>	B9877
<b>Ordering code</b>	B39162B9877P810
<b>Marking and package</b>	C61157-A8-A30
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9877_NB.s2p, B9877_WB.s2p see file header for port/pin assignment table
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
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7 June 17, 2013

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