



SAW Components

SAW GPS + GLONASS Filter

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

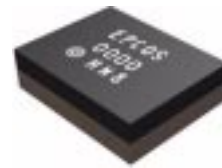
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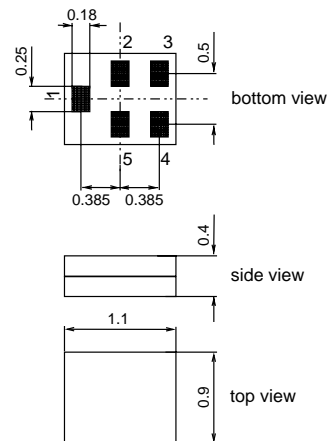
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Application

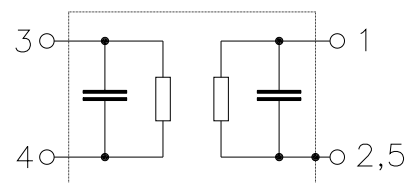
- Low-loss RF GPS + GLONASS filter
- Simultaneous usage of GPS band and GLONASS band
- Usable passbands: 2.0 MHz for GPS and 8.34 MHz for GLONASS
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- High out of band selectivity
- Low amplitude ripple
- Filter impedance 50 Ω
- No matching 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 mm³
- 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



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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.	
Center frequency	f_C	—	1585.66	—	MHz
Maximum insertion attenuation	α_{\max}				
1574.42 ... 1576.42 MHz		—	0.9	1.3	dB
1597.55 ... 1605.89 MHz		—	1.5	2.0	dB
VSWR (Input)					
1574.42 ... 1576.42 MHz		—	1.2	2.0	
1597.55 ... 1605.89 MHz		—	1.5	2.0	
VSWR (Output)					
1574.42 ... 1576.42 MHz		—	1.2	2.0	
1597.55 ... 1605.89 MHz		—	1.5	2.0	
Group delay ripple¹⁾					
1597.55 ... 1605.89 MHz		—	4	10	ns
Attenuation	α				
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

¹⁾ Measured with aperture 2 MHz.

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Maximum ratings of Filter

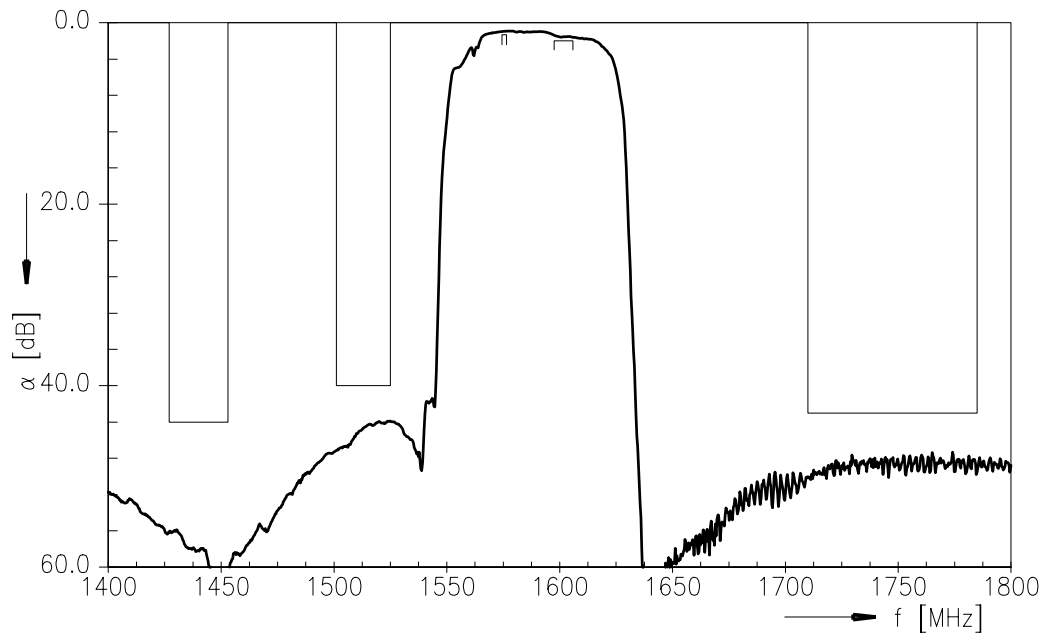
Operable temperature range	T	-30/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model
Input power at				source/load impedance 50Ω/50Ω
915 MHz	P _{IN}	23 ²⁾	dBm	1/8 duty cycle
1453 MHz	P _{IN}	15	dBm	cw
1710 MHz	P _{IN}	15	dBm	cw

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

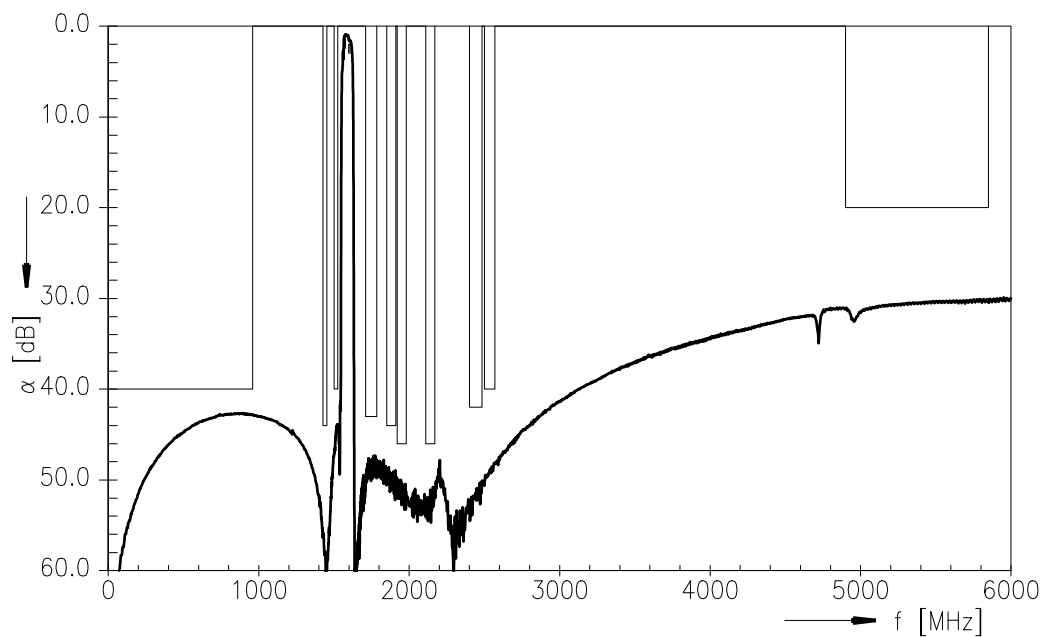
²⁾ >5000 h at Ta = 50°C .



Transfer function (passband)



Transfer function (wideband)

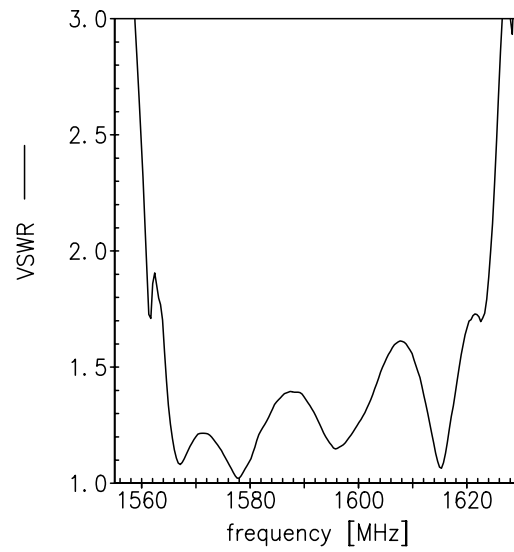
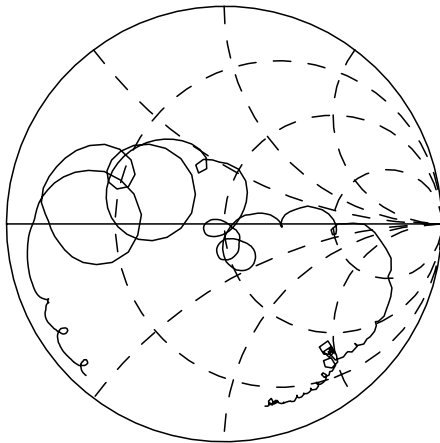


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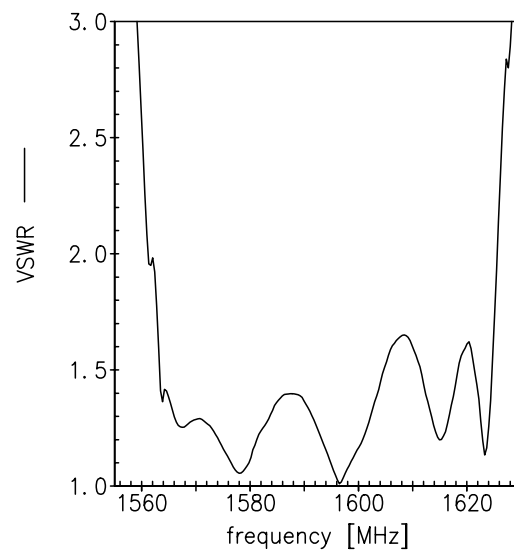
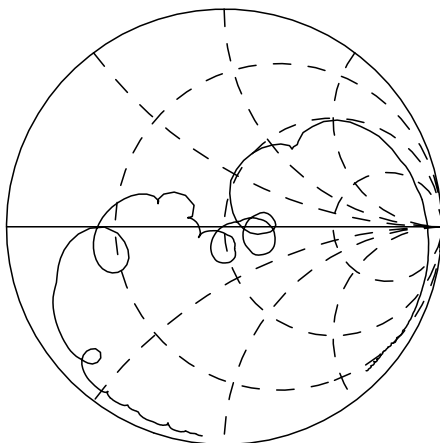


Smith chart / VSWR

Input (pin1)



Output (pin4)



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

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Type	B9877
Ordering code	B39162B9877P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B9877_NB.s2p, B9877_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	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.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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