



## **SAW Components**

### **SAW GPS + COMPASS + GLONASS filter**

<b>Series/type:</b>	<b>B8813</b>
<b>Ordering code:</b>	<b>B39162B8813P810</b>
Date:	June 20, 2013
Version:	2.0



SAW Components

B8813

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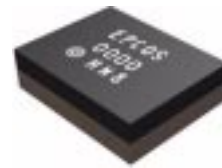
1582.47 MHz

Data Sheet



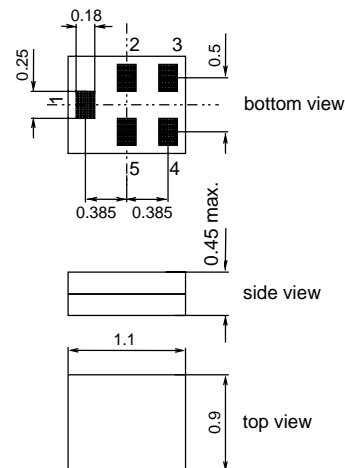
### Application

- Low-loss RF GPS + COMPASS + GLONASS filter
- Simultaneous usage of GPS, COMPASS and GLONASS bands
- Usable passbands: 2.0 MHz for GPS, 4.092 MHz for COMPASS and 8.34 MHz for GLONASS
- Very low insertion attenuation
- High out of band selectivity
- Filter impedance 50  $\Omega$
- Unbalanced to unbalanced operation
- No matching network required for operation at 50  $\Omega$



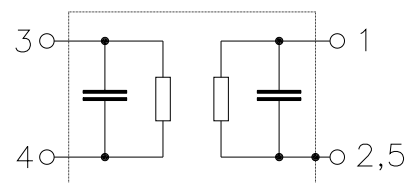
### Features

- Package size 1.1 x 0.9 mm<sup>2</sup>  
package height 0.45 mm max.
- 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 unbalanced
- 4 Output 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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**Characteristics of Filter**

Temperature range for specification: T = -30 °C to +85 °C  
 Terminating source impedance: Z<sub>S</sub> = 50 Ω  
 Terminating load impedance: Z<sub>L</sub> = 50 Ω

		<b>B8813</b>			
		<b>min.</b>	<b>typ. @ 25 °C</b>	<b>max.</b>	
<b>Center frequency</b>	f <sub>C</sub>	—	1582.47	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>				
1559.052... 1563.144 MHz		—	1.0	1.9	dB
1574.42 ... 1576.42 MHz		—	0.85	1.4	dB
1597.55 ... 1605.89 MHz		—	1.2	1.9	dB
<b>VSWR Input</b>					
1559.052... 1563.144 MHz		—	1.50	1.9	
1574.42 ... 1576.42 MHz		—	1.25	1.8	
1597.55 ... 1605.89 MHz		—	1.55	1.9	
<b>VSWR Output</b>					
1559.052... 1563.144 MHz		—	1.50	1.9	
1574.42 ... 1576.42 MHz		—	1.25	1.8	
1597.55 ... 1605.89 MHz		—	1.55	1.9	
<b>Group delay ripple<sup>1)</sup> (p-p)</b>	Δτ				
1597.55 ... 1605.89 MHz		—	3	12	ns
<b>Attenuation</b>	α				
10.0 ... 960.0 MHz		47	50	—	dB
960.0 ... 1463.0 MHz		36	40	—	dB
1710.0 ... 1785.0 MHz		35	39	—	dB
1785.0 ... 1990.0 MHz		35	39	—	dB
1990.0 ... 2280.0 MHz		35	39	—	dB
2280.0 ... 2400.0 MHz		35	39	—	dB
2400.0 ... 2500.0 MHz		33	38	—	dB
2500.0 ... 2700.0 MHz		32	36	—	dB
2700.0 ... 3000.0 MHz		28	33	—	dB
3000.0 ... 6000.0 MHz		15	22	—	dB

<sup>1)</sup> Measured with an aperture of 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>	5 <sup>1)</sup>	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>2)</sup>	V	machine model
Input power (10000 h, 55°C)				
777 to 915 MHz	P <sub>IN</sub>	28	dBm	1/8 duty cycle, effective power in the on-state
1710 to 2200 MHz	P <sub>IN</sub>	28	dBm	1/8 duty cycle, effective power in the on-state

<sup>1)</sup> 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy

<sup>2)</sup> acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses



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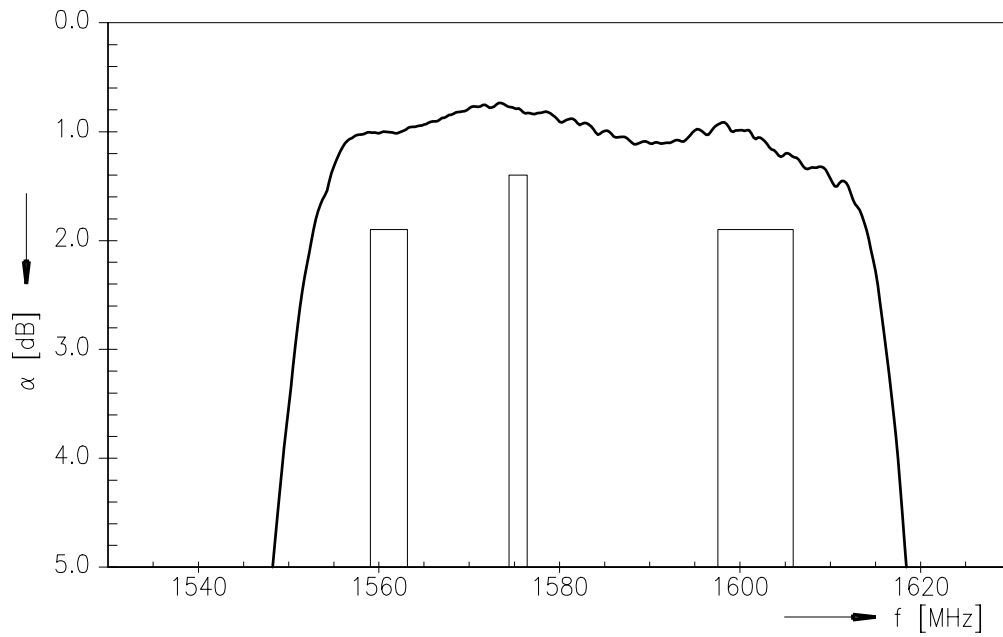
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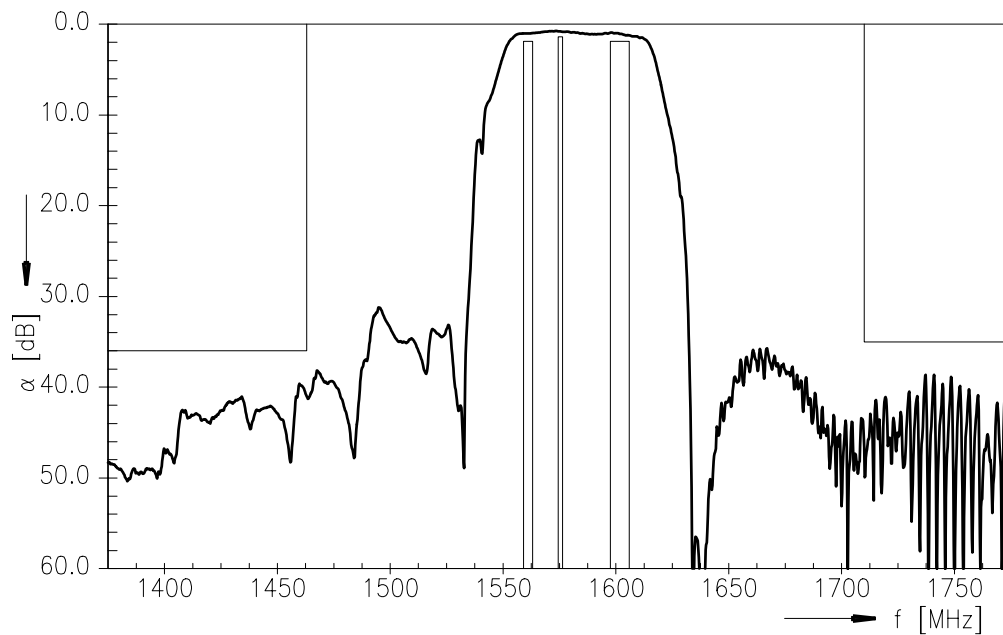
Data Sheet



### Transfer function passband



### Transfer function narrowband



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



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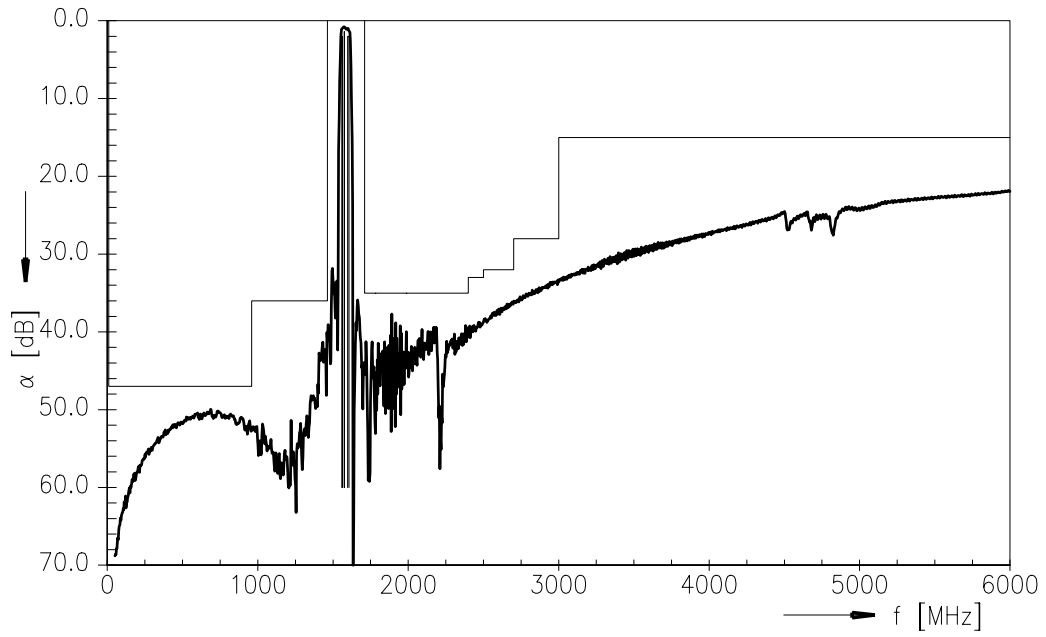
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Transfer function wideband





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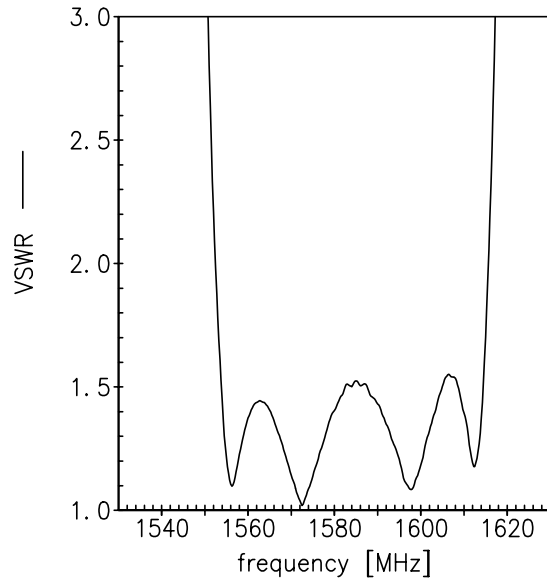
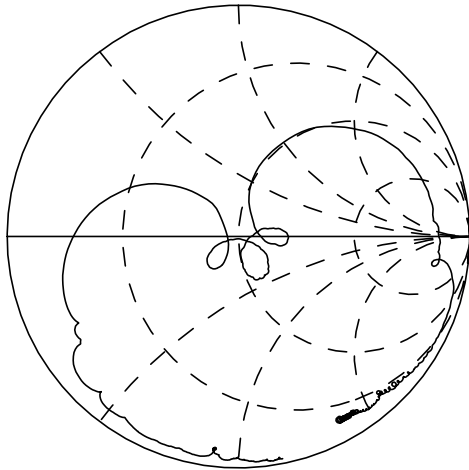
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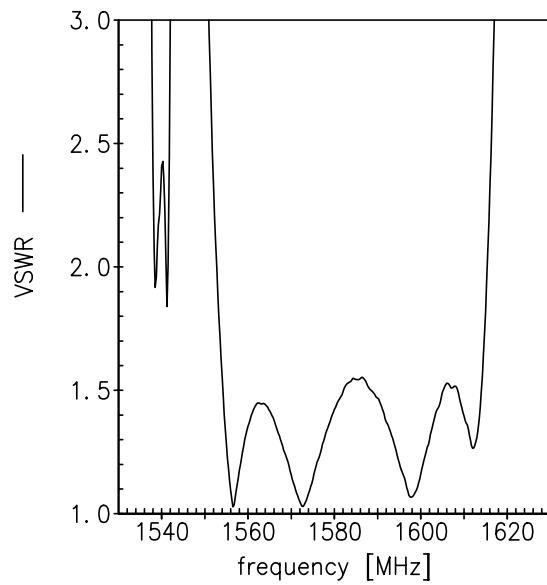
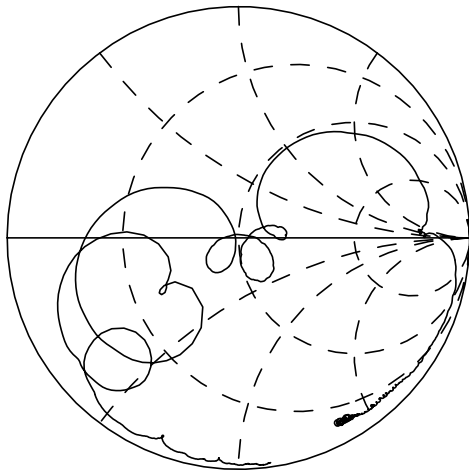


Smith chart / VSWR

$S_{11}$  function



$S_{22}$  function



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<b>Type</b>	B8813
<b>Ordering code</b>	B39162B8813P810
<b>Marking and package</b>	C61157-A8-A30
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B8813_NB_UN.s3p, B8813_WB_UN.s3p 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 8 <sup>th</sup> , 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.
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a>

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