

RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

## SAW Components

### SAW GPS + COMPASS + GLONASS filter

Series/type:	B8813
Ordering code:	B39162B8813P810
DCN:	80-PA243-26 Rev. A
Date:	February 3, 2017
Version:	2.2

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# SAW Components

## SAW GPS + COMPASS + GLONASS filter

<b>Series/type:</b>	<b>B8813</b>
<b>Ordering code:</b>	<b>B39162B8813P810</b>
<b>Date:</b>	June 07, 2016
<b>Version:</b>	2.2

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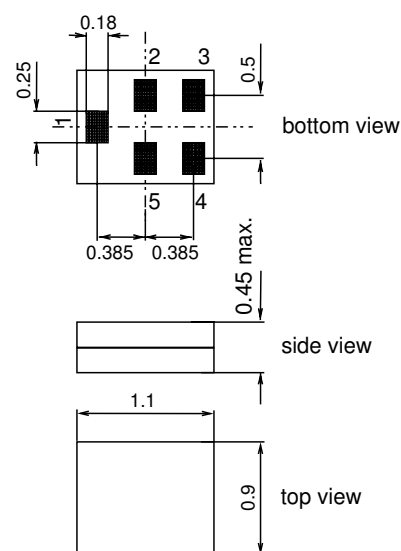
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**Application**

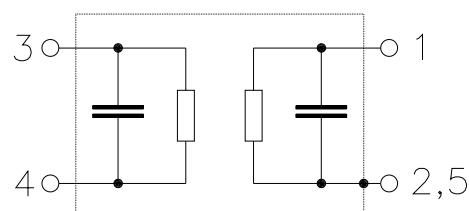
- Low-loss RF GPS + COMPASS + GLONASS filter
- Simultaneous usage of GPS, COMPASS and GLONASS bands
- Usable passbands: 2.0 MHz for GPS, 4.092 MHz for COMPASS and 8.34 MHz for GLONASS
- Very low insertion attenuation
- High out of band selectivity
- Filter impedance 50  $\Omega$
- Unbalanced to unbalanced 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



**SAW Components**
**B8813**
**SAW GPS + COMPASS + GLONASS filter**
**1582.47 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:  $Z_L = 50\ \Omega$

		B8813			
		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1582.47	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$				
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>	$\Delta\tau$				
1597.55 ... 1605.89 MHz		—	3	12	ns
<b>Attenuation</b>	$\alpha$				
10.0 ... 960.0 MHz		47	50	—	dB
960.0 ... 1463.0 MHz		36	40	—	dB
1710.0 ... 1785.0 MHz		37	39	—	dB
1785.0 ... 1990.0 MHz		37	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

1) Measured with an aperture of 2 MHz

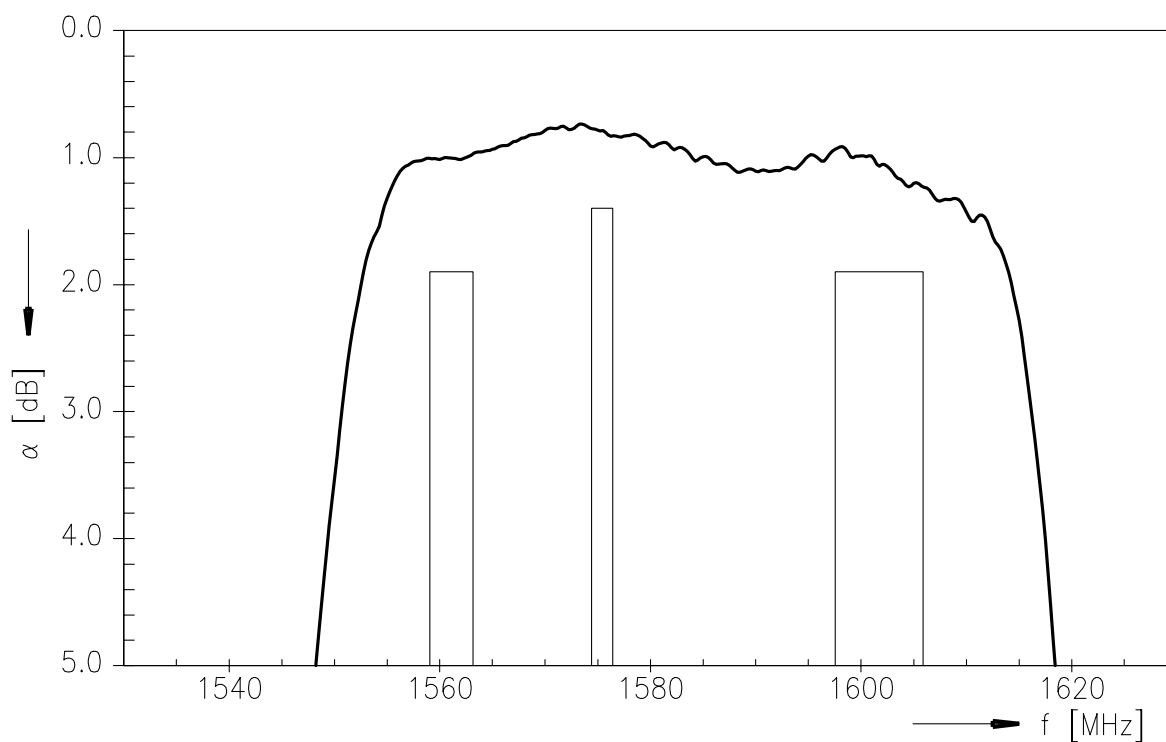
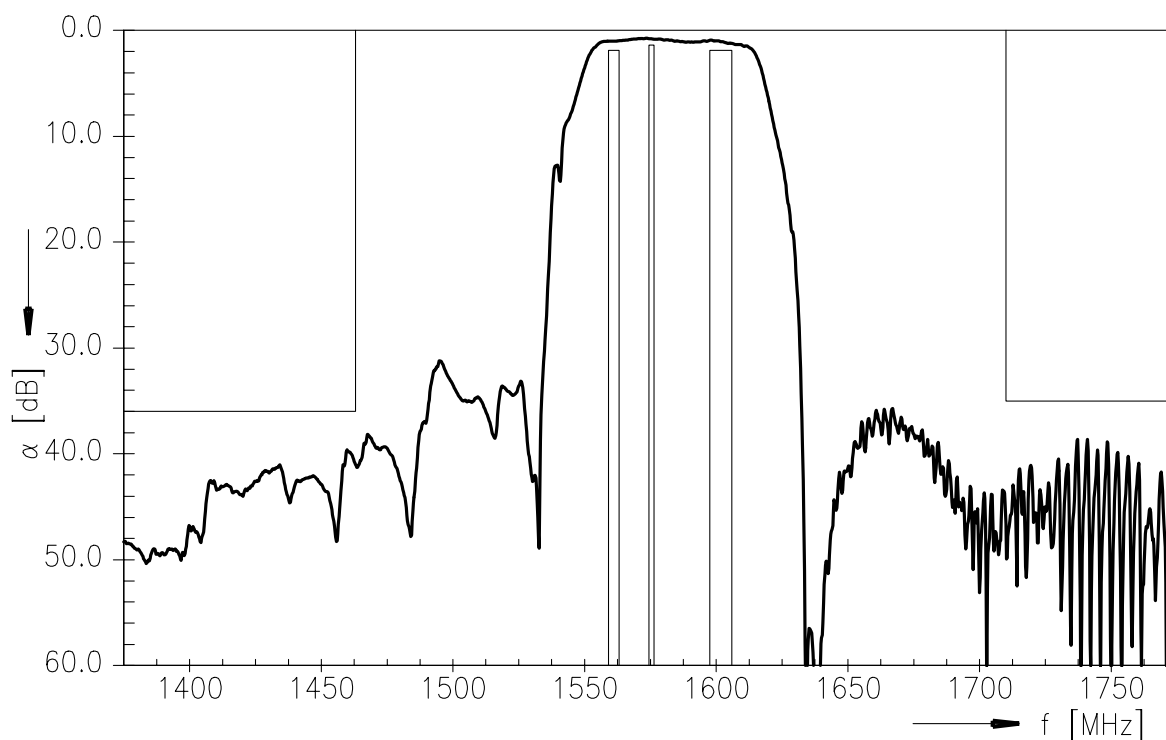
**Data Sheet**

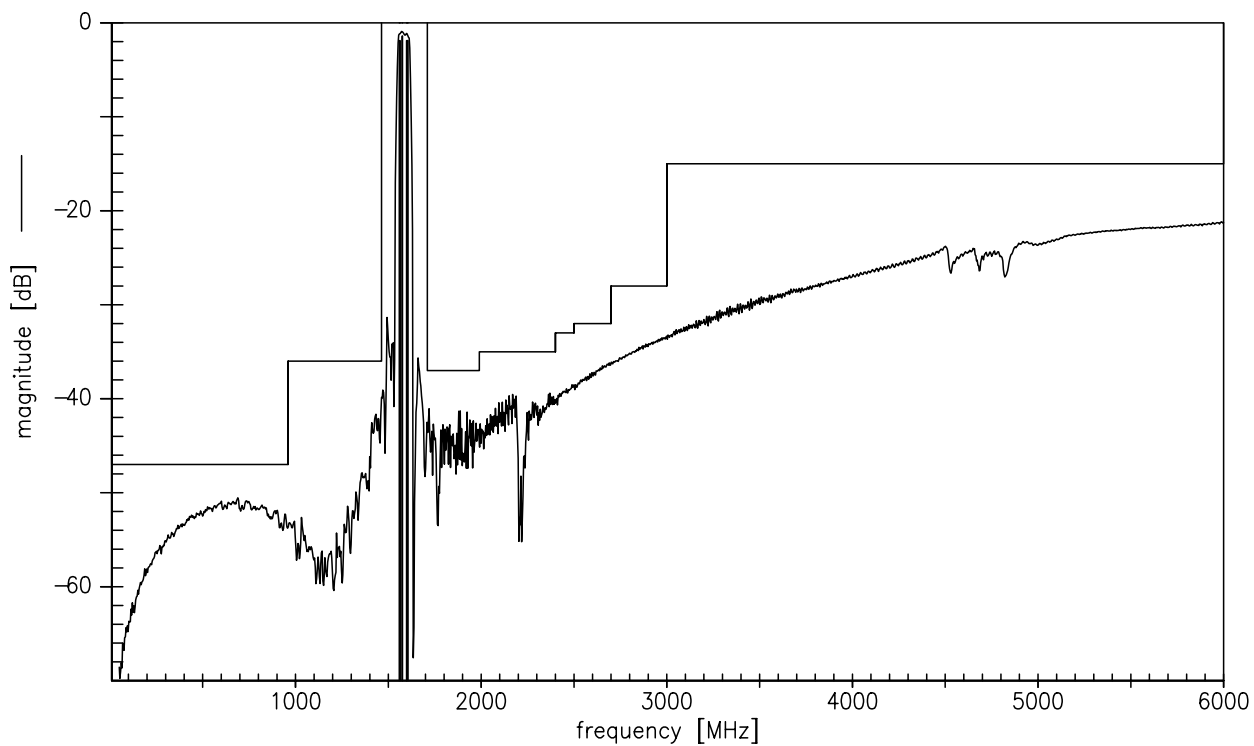
**Maximum ratings of Filter**

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

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

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


**Transfer function passband**

**Transfer function narrowband**



**Transfer function wideband**


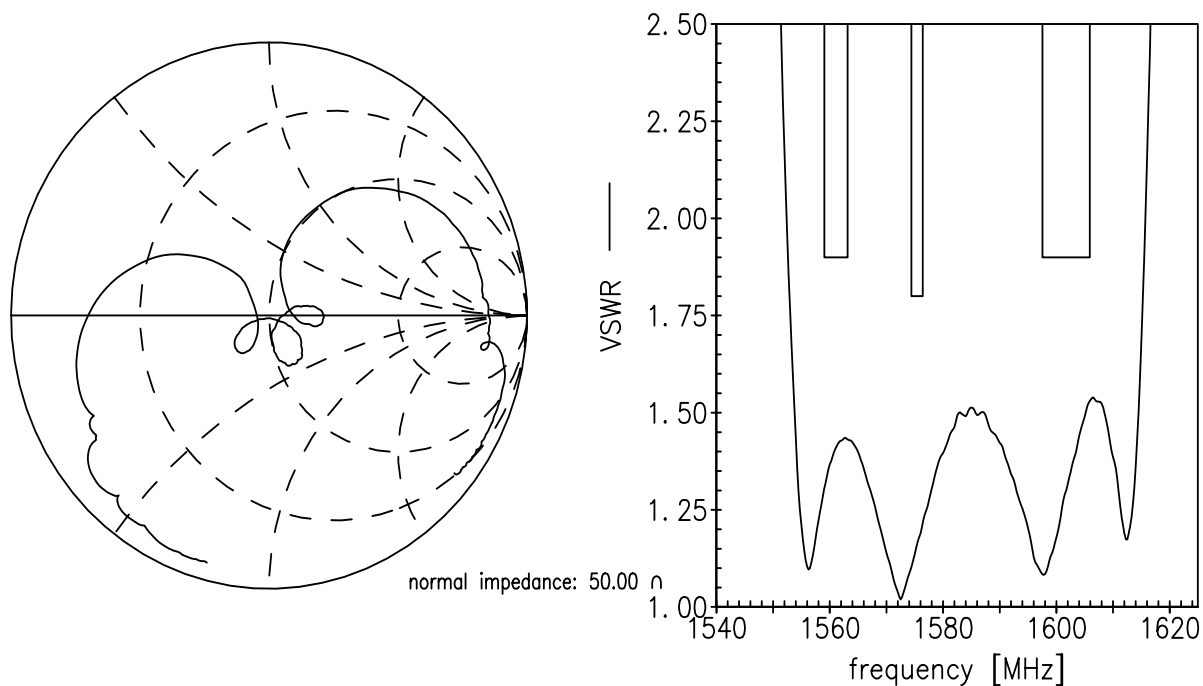


Data Sheet

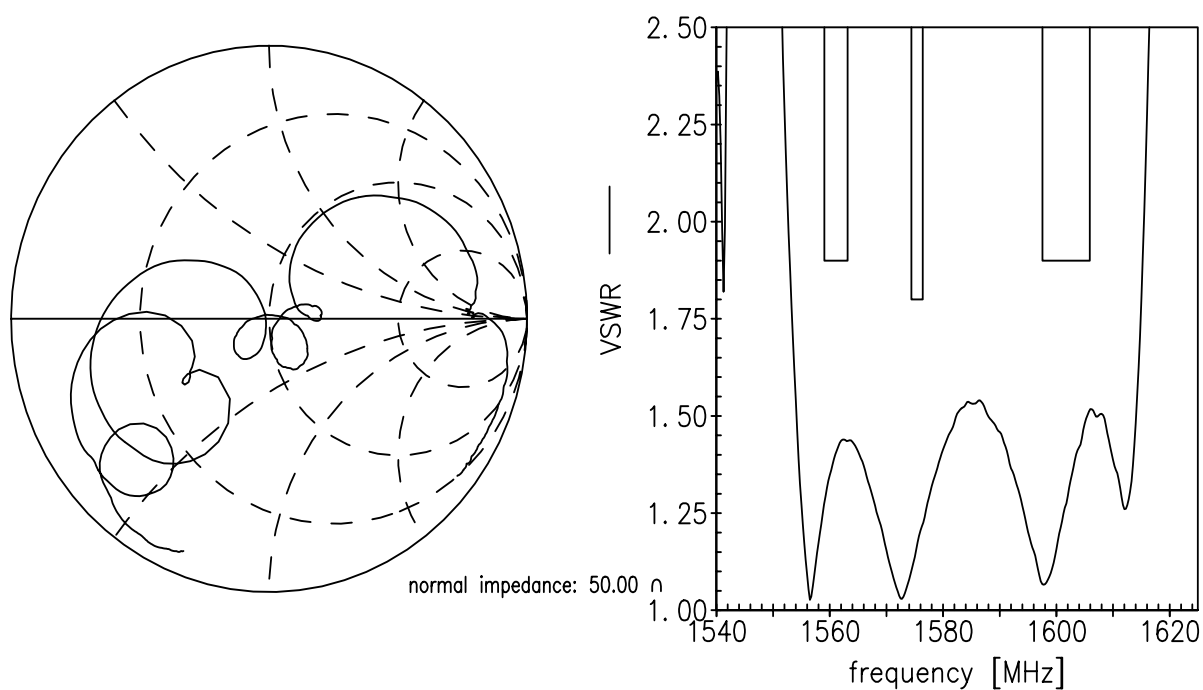


Smith chart / VSWR

**S<sub>11</sub> function**



**S<sub>22</sub> function**





<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.s2p, B8813_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 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.
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<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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