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

Series/type:	**B8813**
Ordering code:	**B39162B8813P810**
Date:	June 07, 2016
Version:	2.2

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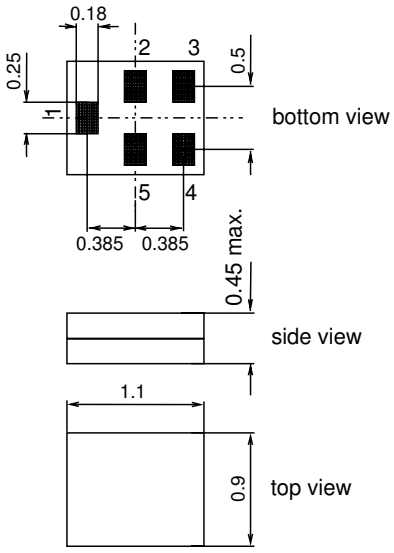
Application

- 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 Ω
- Unbalanced to unbalanced operation
- No matching network required for operation at 50 Ω



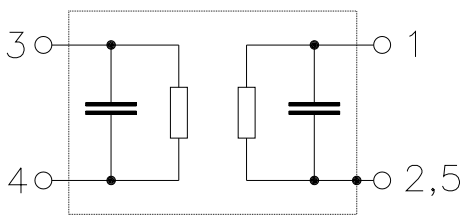
Features

- Package size 1.1 x 0.9 mm²
  package height 0.45 mm max.
- RoHS compatible
- Approximate weight 0.0012 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 3 (**MSL3**)



Pin configuration

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



Data Sheet SMD

Characteristics of Filter

Temperature range for specification: T = –30 ˚C to +85˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		B8813			
		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1582.47	—	MHz
Maximum insertion attenuation	α_{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
VSWR Input					
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	
VSWR Output					
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	
Group delay ripple[1)] (p-p)	Δτ				
1597.55 ... 1605.89 MHz		—	3	12	ns
Attenuation	α				
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

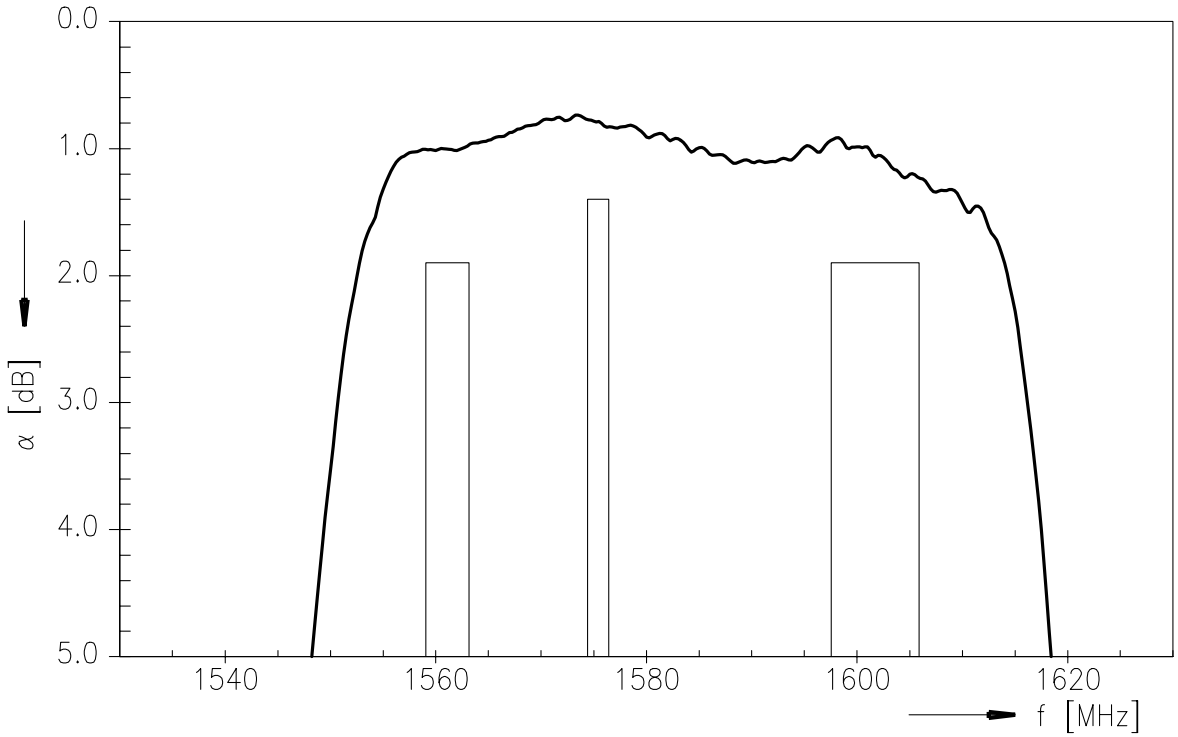
Maximum ratings of Filter

Operable temperature range	T	–30/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5[1)]	V	
ESD voltage	V_{ESD}	50[2)]	V	machine model
Input power (10000 h, 55˚C)				
777 to 915 MHz	P_{IN}	28	dBm	1/8 duty cycle, effective power in the on-state
1710 to 2200 MHz	P_{IN}	28	dBm	1/8 duty cycle, effective power in the on-state

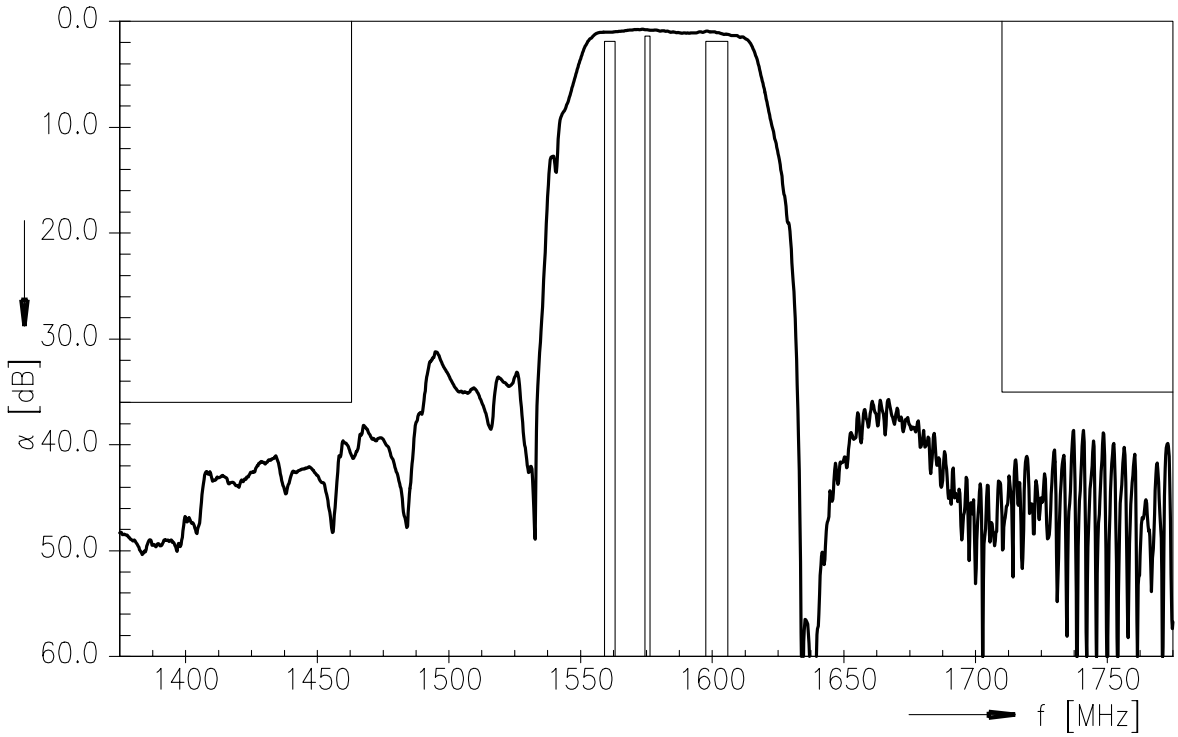
1) 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy

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

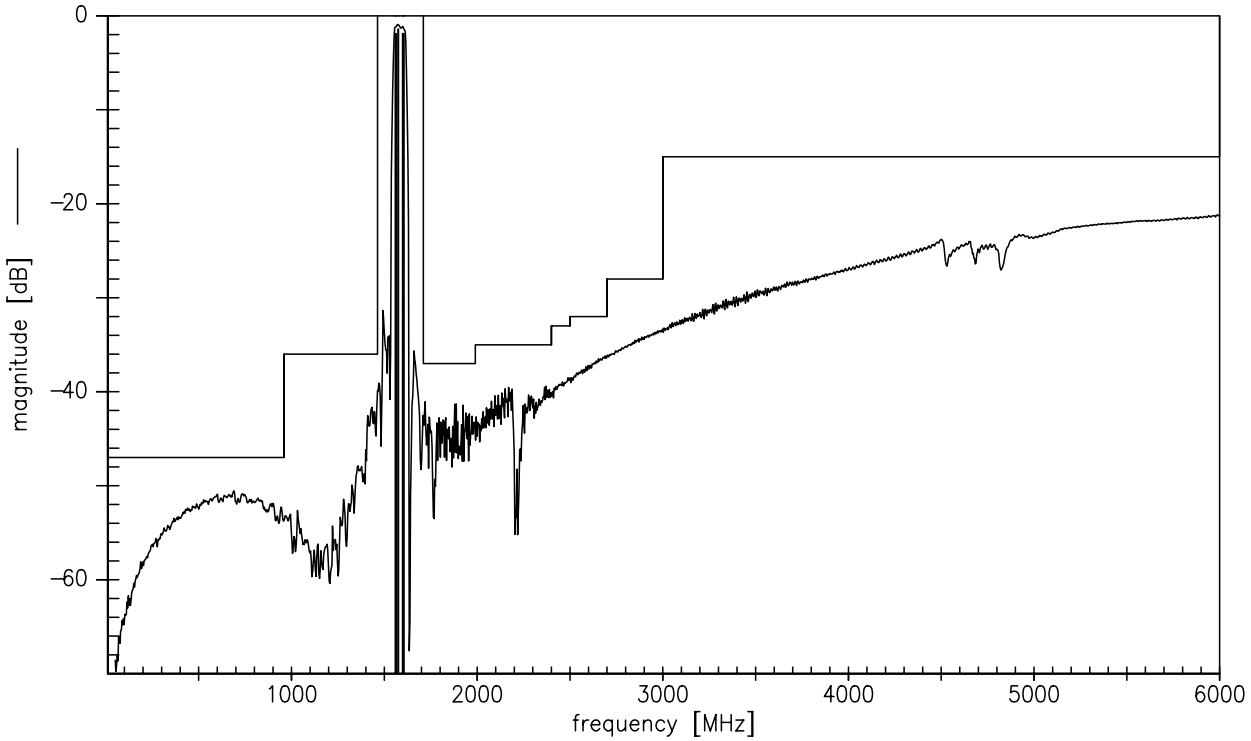
Transfer function passband



Transfer function narrowband

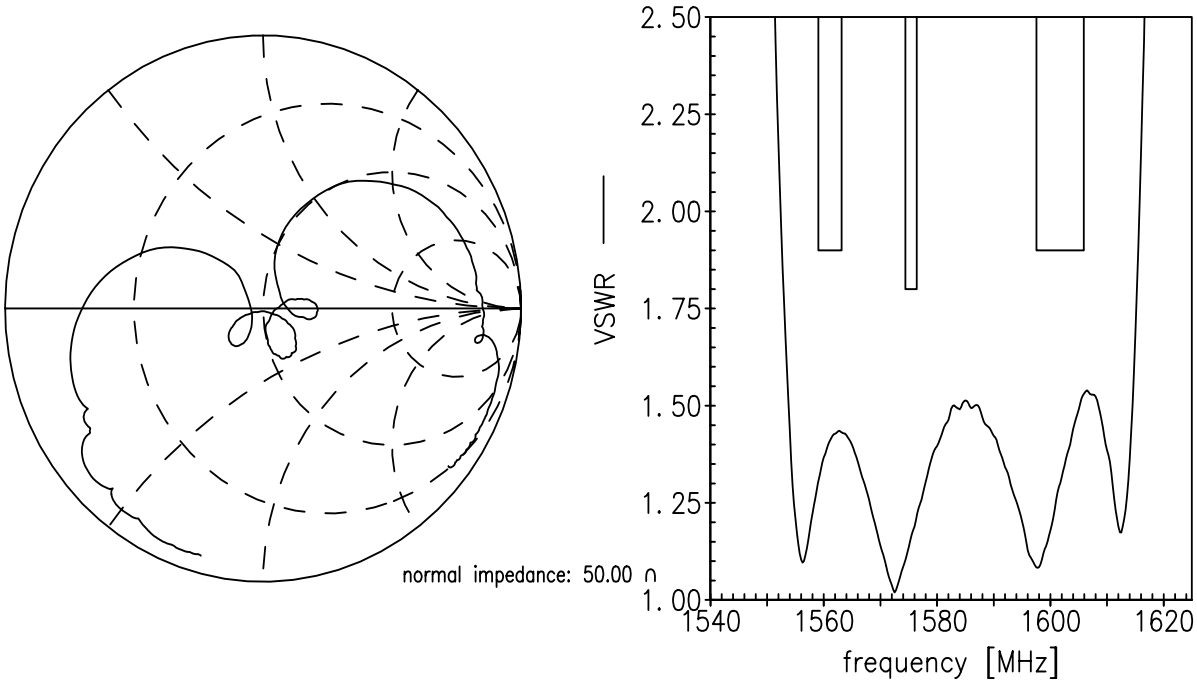


Transfer function wideband

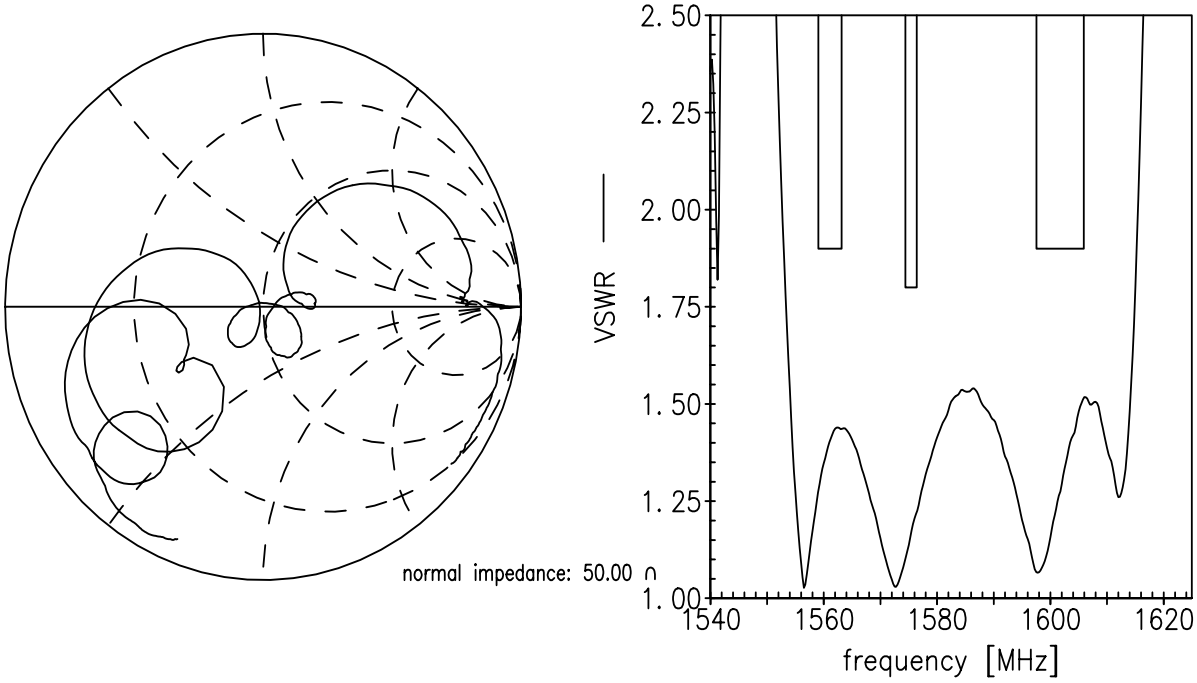


Smith chart / VSWR

S_{11} function



S_{22} function



Type	B8813
Ordering code	B39162B8813P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8813_NB.s2p, B8813_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

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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