# Qualcom

RF360 Europe GmbH

## **SAW Components**

SAW GPS + COMPASS + GLONASS filter

Series/type: B8819 Ordering code: B39162B8819P810

Date: Version: April 19, 2016 2.5

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B8819 B39162B8819P810

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**B8819** 

1582.47 MHz

#### **SAW Components**

#### SAW GPS + COMPASS + GLONASS filter

**Data Sheet** 

#### Application

■ Low-loss RF GPS + COMPASS + GLONASS filter

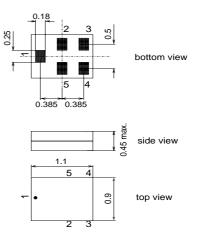
SMD

- Simultaneous usage of GPS, COMPASS and GLO-NASS 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
- Impedance transformation from 50 Ω to 100 Ω
- Unbalanced to balanced operation
- No matching network required for operation at 50 Ω



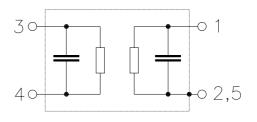
#### Features

- 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
- 3,4 Output balanced
- 2,5 To be grounded



Please read *cautions and warnings and important notes* at the end of this docume Downloaded From Oneyac.com 2016

## SAW Components

Data Sheet

## **Characteristics of Filter**

Temperature range for specification:	Т	=	–30 °C to	+85°C
Terminating source impedance:	$Z_S$	=	50 Ω	
Terminating load impedance:	$Z_L$	=	100 Ω	

SMD

min.

typ.

max.

			@ 25 °C		
Center frequency	f <sub>C</sub>	—	1582.47		MHz
Maximum insertion attenuation	$\alpha_{max}$				
1559.052 1563.144 MHz			1.4	1.9	dB
1574.42 1576.42 MHz			0.9	1.3	dB
1597.55 1605.89 MHz			1.5	2.0	dB
VSWR Input					
1559.052 1563.144 MHz			1.7	2.3	
1574.42 1576.42 MHz		—	1.2	1.8	
1597.55 1605.89 MHz			1.7	2.1	
VSWR Output					
1559.052 1563.144 MHz			1.7	2.2	
1574.42 1576.42 MHz			1.3	1.9	
1597.55 1605.89 MHz			1.7	2.3	
Group delay ripple <sup>1)</sup> (p-p)	$\Delta \tau$				
1597.55 1605.89 MHz			3	12	ns
Output amplitude balance ( S <sub>31</sub> /S <sub>21</sub>  )					
1559.052 1563.144 MHz		-1.2	-0.6	1.2	dB
1574.42 1576.42 MHz		-1	-0.4	1	dB
1597.55 1605.89 MHz		-1.5	0.9	1.5	dB
Output phase balance $(\phi(S_{31})-\phi(S_{21})+180^{\circ})$					
1559.052 1563.144 MHz		-10	1.5	10	•
1574.42 1576.42 MHz		-10	-1.5	10	•
1597.55 1605.89 MHz		-10	1.5	10	0
Attenuation	α				
10.0 960.0 MHz		50	60		dB
1427.0 1463.0 MHz		40	48		dB
1648.0 1698.0 MHz		25	32		dB
1710.0 1785.0 MHz		35	40		dB
1785.0 1990.0 MHz		40	44	—	dB
1990.0 2280.0 MHz		35	41	—	dB
2280.0 2400.0 MHz		40	51	—	dB
2400.0 2500.0 MHz		45	55	—	dB

1582.47 MHz

B8819

# **②TDK**

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1582.47 MHz

## SAW Components

#### SAW GPS + COMPASS + GLONASS filter

		SM				
			min.	typ. @ 25 °C	max.	
2700.0	MHz		35	54		dB
4400.0	MHz		35	48		dB
6000.0	MHz		25	40		dB
ression		S <sub>cs21</sub>				
960.0	MHz		41	45		dB
1463.0	MHz		35	42		dB
1785.0	MHz		37	42		dB
1990.0	MHz		37	42		dB
2280.0	MHz		35	39		dB
2400.0	MHz		32	38		dB
2500.0	MHz		30	37	—	dB
2700.0	MHz		30	35		dB
	4400.0 6000.0 <b>ression</b> 960.0 1463.0 1785.0 1990.0 2280.0 2400.0 2500.0	4400.0 MHz MHz mession 960.0 MHz 1463.0 MHz 1785.0 MHz 1990.0 MHz 2280.0 MHz 2400.0 MHz 2500.0 MHz	4400.0 MHz 6000.0 MHz ression S <sub>cs21</sub> 960.0 MHz 1463.0 MHz 1785.0 MHz 1990.0 MHz 2280.0 MHz 2400.0 MHz 2500.0 MHz	2700.0 MHz 35   4400.0 MHz 35   6000.0 MHz 25   ression S <sub>cs21</sub> 960.0 MHz 35   960.0 MHz 35   1463.0 MHz 35   1785.0 MHz 37   1990.0 MHz 37   2280.0 MHz 35   2400.0 MHz 32   2500.0 MHz 30	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Image: Constraint of the constrain

1) Measured with an aperture of 2 MHz



**B8819** 

1582.47 MHz

### **SAW Components**

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**Data Sheet** 

#### Maximum ratings of Filter

Storage temperature range	T <sub>stg</sub>	-40/+851)	°C	
DC voltage	V <sub>DC</sub>	5 <sup>2)</sup>	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>3)</sup>	V	Machine Model
		275 <sup>4)</sup>	V	Human Body Model
		600 <sup>5)</sup>	V	Charged Device Model
Input power (5000 h, 50°C)				
@ 915 MHz	P <sub>IN</sub>	23	dBm	1/8 duty cycle
@ 1710 MHz	P <sub>IN</sub>	15	dBm	CW
@ 1453 MHz	P <sub>IN</sub>	15	dBm	CW

SMD

<sup>1)</sup> extended upperlimit: 168@125°C acc. to IEC 60068-2-2 Bb

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

<sup>3)</sup> acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

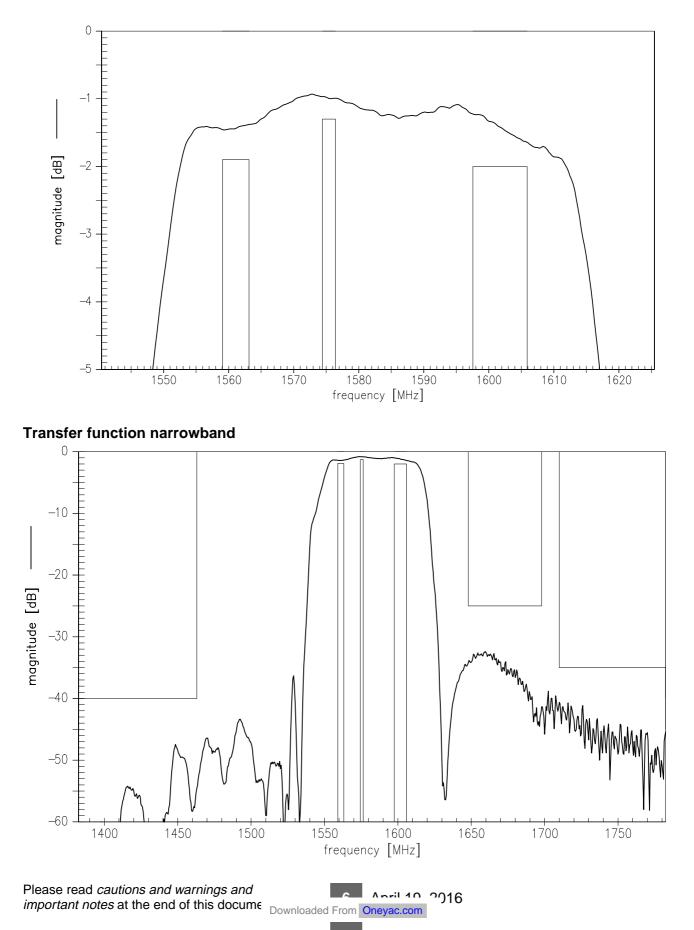
<sup>4)</sup> acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

<sup>5)</sup> acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative & 3 positive pulses

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SAW GPS + COMPAS	S + GLONASS filter	1582.47 MHz
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## **Data Sheet**

## **Transfer function passband**

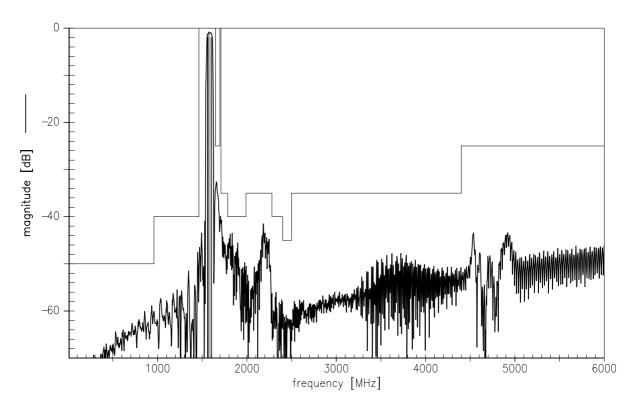


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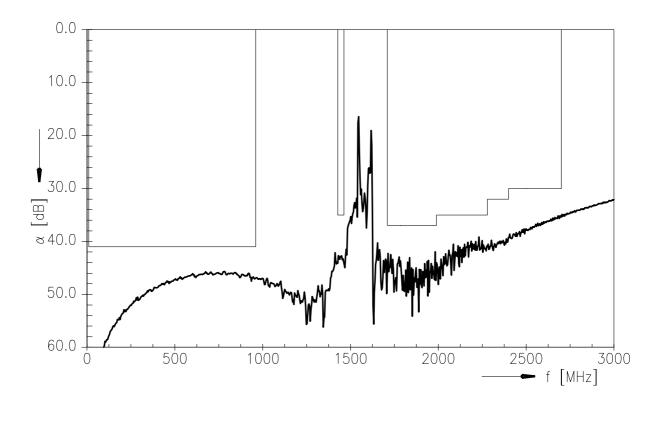
**Data Sheet** 

SMD

## Transfer function wideband



Transfer function (common mode, S<sub>cs21</sub>)

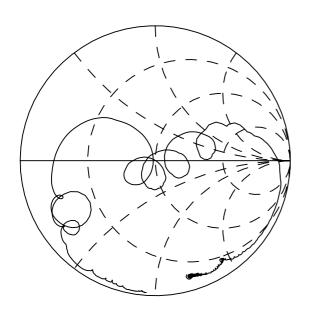


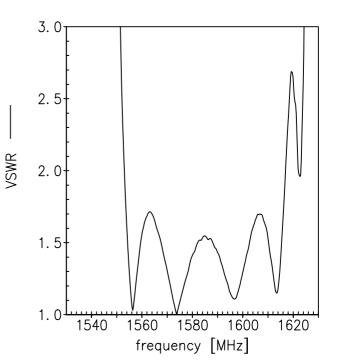


**Data Sheet** 

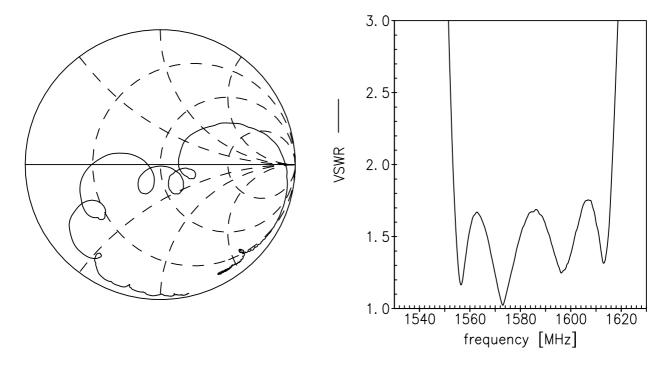
## Smith chart / VSWR

S<sub>11</sub> function





S<sub>22</sub> function



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## SAW GPS + COMPASS + GLONASS filter

1582.47 MHz

Data Sheet

SMD

#### References

Туре	B8819
Ordering code	B39162B8819P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8819_NB.s3p, B8819_WB.s3p 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 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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