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

1582.47 MHz

SAW Components

SAW GPS + COMPASS + GLONASS filter

Data Sheet

Application

■ Low-loss RF GPS + COMPASS + GLONASS filter

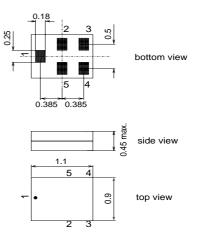
SMD

- 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



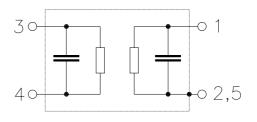
Features

- Package size 1.1 x 0.9 mm²
- 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

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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 _C | — | 1582.47 | | MHz |
| Maximum insertion attenuation | α_{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 ¹⁾ (p-p) | $\Delta \tau$ | | | | |
| 1597.55 1605.89 MHz | | | 3 | 12 | ns |
| Output amplitude balance (S ₃₁ /S ₂₁) | | | | | |
| 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

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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 _{cs21} | | | | |
| 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 ression 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 _{cs21} 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 _{cs21} 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



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1582.47 MHz

SAW Components

SAW GPS + COMPASS + GLONASS filter

Data Sheet

Maximum ratings of Filter

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

SMD

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

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

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

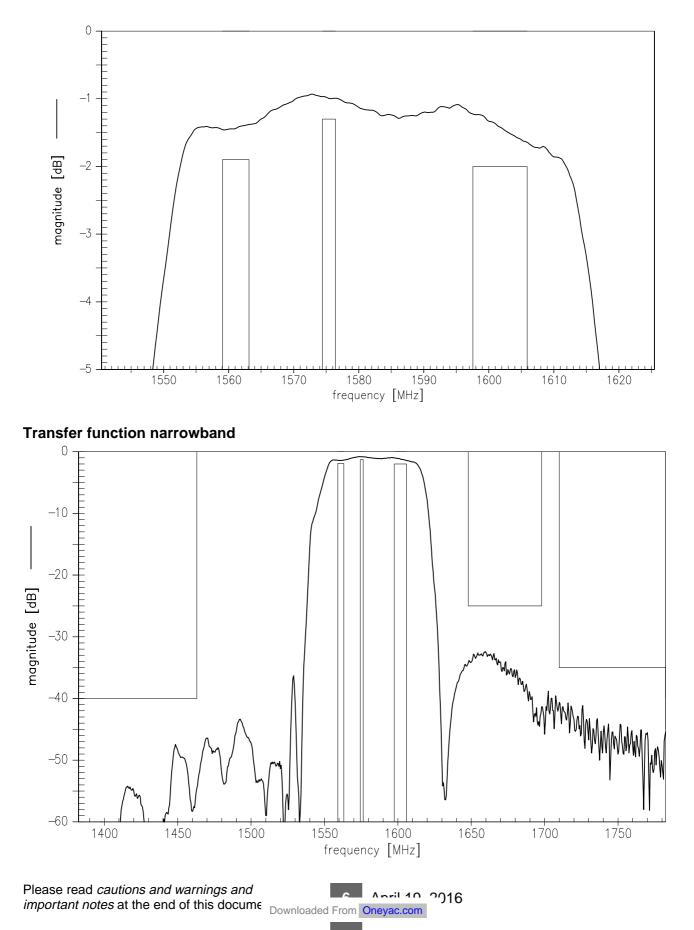
⁴⁾ acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

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

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| Data Sheet | SMD | |

Data Sheet

Transfer function passband

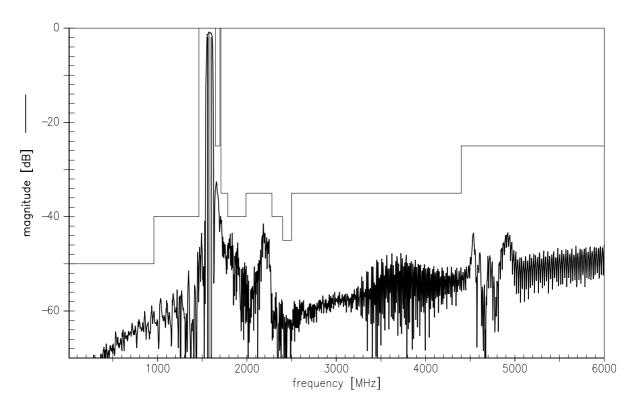


| SAW Components | B8819 |
|------------------------------------|-------------|
| SAW GPS + COMPASS + GLONASS filter | 1582.47 MHz |

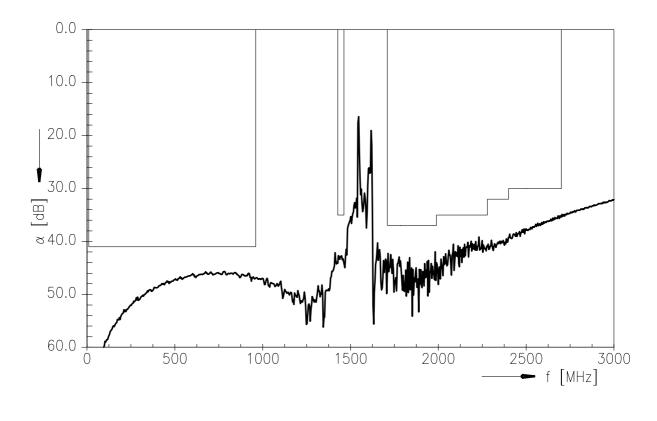
Data Sheet

SMD

Transfer function wideband



Transfer function (common mode, S_{cs21})

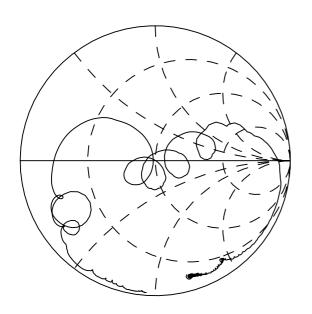


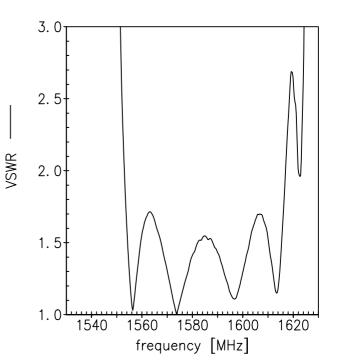


Data Sheet

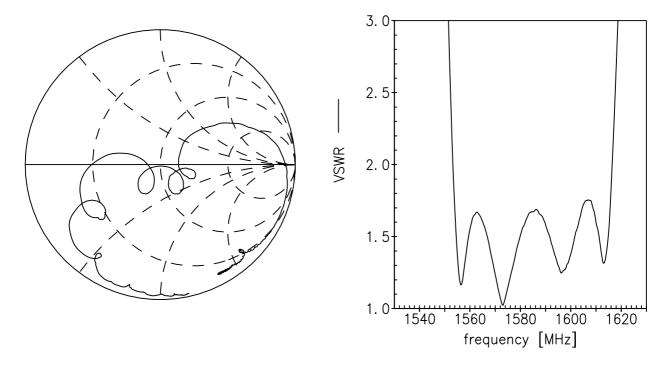
Smith chart / VSWR

S₁₁ function





S₂₂ function



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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 th , 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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