



SAW Components

SAW Filter for smallcells

Band I Uplink

| | |
|-----------------------|------------------------|
| Series/type: | B9610 |
| Ordering code: | B39202B9610P810 |
| Date: | April 14, 2014 |
| Version: | 2.0 |

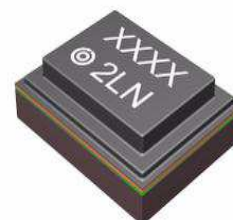
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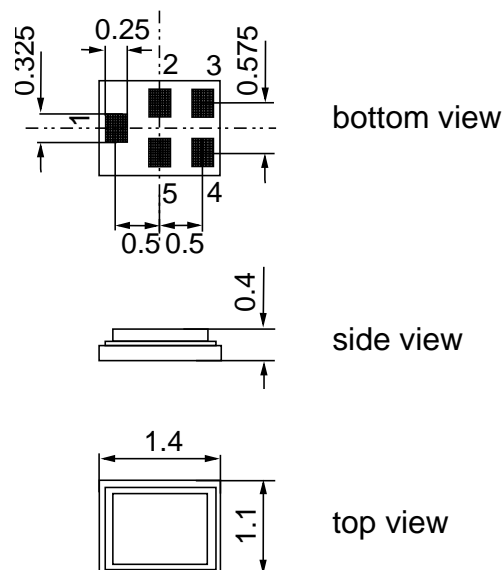
Data sheet

Application

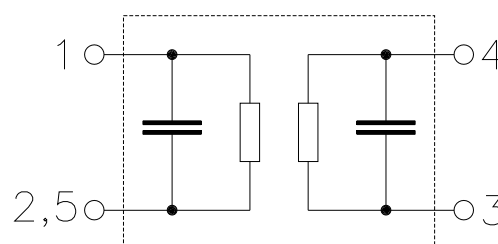
- Low-loss RF filter for smallcells
- Usable passband 60 MHz
- No matching network required for operation at 50 Ω
- Unbalanced to unbalanced operation


Features

- Package size 1.4 x 1.1 mm²
- Max Package height 0.4 mm
- Package code QCS5P
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


Pin configuration

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



Data sheet


Characteristics

Temperature range for specification: $T = -10\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

| | | | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|-------------------|-------|-------------------|------|-----------------|------|-----|
| Center frequency | | f_C | | — | 1950.00 | — | MHz |
| Maximum insertion attenuation | | | | | | | |
| | 1920.0 ... 1980.0 | MHz | α_{\max} | — | 2.0 | 3.0 | dB |
| Amplitude ripple (p-p) | | | | | | | |
| | 1920.0 ... 1980.0 | MHz | $\Delta\alpha$ | — | 1.0 | 1.8 | dB |
| VSWR | | | | | | | |
| | 1920.0 ... 1980.0 | MHz | | — | 1.8 | 2.2 | |
| Error Vector Magnitude | | | | | | | |
| @ f_{Carrier} | 1922.4 ... 1977.6 | MHz | EVM ¹⁾ | — | 2.3 | 3.0 | % |
| Attenuation | | | α | | | | |
| | 50.0 ... 960.0 | MHz | | 27 | 35 | — | dB |
| | 960.0 ... 1575.0 | MHz | | 25 | 34 | — | dB |
| | 1575.0 ... 1576.0 | MHz | | 32 | 36 | — | dB |
| | 1576.0 ... 1730.0 | MHz | | 30 | 36 | — | dB |
| | 1730.0 ... 1880.0 | MHz | | 30 | 38 | — | dB |
| | 2025.0 ... 2050.0 | MHz | | 35 | 55 | — | dB |
| | 2110.0 ... 2170.0 | MHz | | 35 | 40 | — | dB |
| | 2200.0 ... 3100.0 | MHz | | 33 | 39 | — | dB |
| | 3100.0 ... 3960.0 | MHz | | 30 | 45 | — | dB |
| | 3960.0 ... 6000.0 | MHz | | 20 | 30 | — | dB |

1) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Data sheet


Maximum ratings

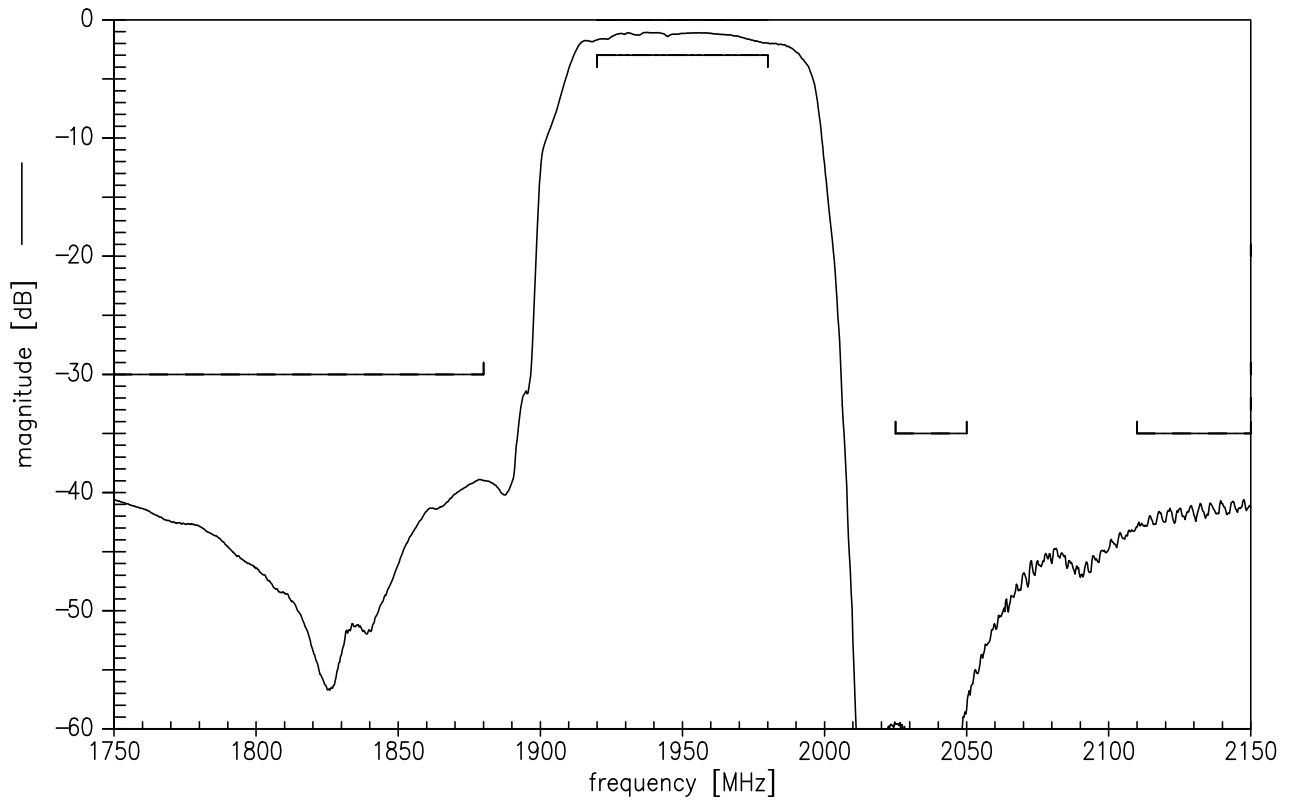
| | | | | |
|---|------------------|------------------|-----|--------------------------|
| Operable temperature range | T | -40/+85 | °C | |
| Storage temperature range | T _{stg} | -40/+85 | °C | |
| DC voltage | V _{DC} | 0 | V | |
| ESD voltage | V _{ESD} | 50 ¹⁾ | V | machine model, 10 pulses |
| Input power at 1920.0 ... 1980.0 MHz | P _{IN} | 10 | dBm | CW, 100000 hrs @ 85deg |

1) acc. to JESD22-A115B (machine model), +/- 10 pulses.

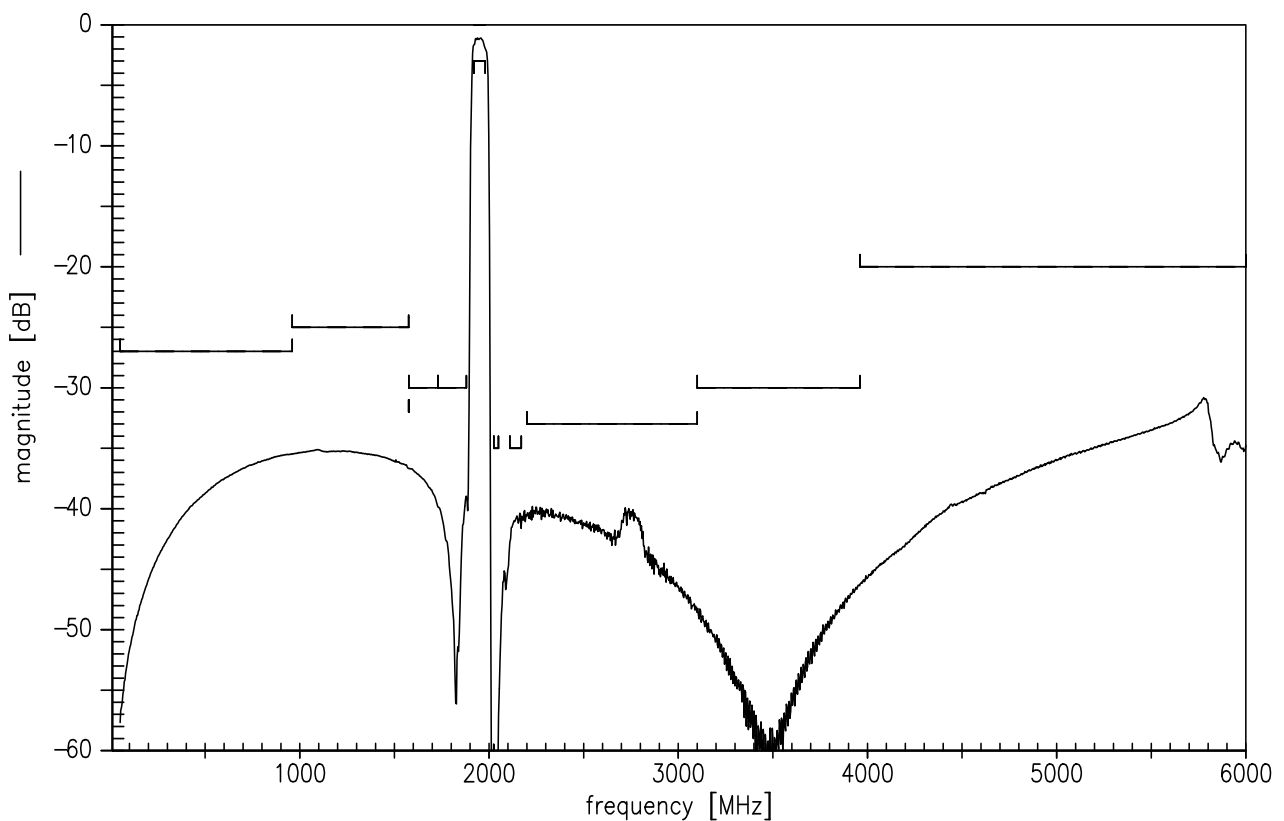
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SMD

Transfer function (Narrowband)



Transfer function (wideband)

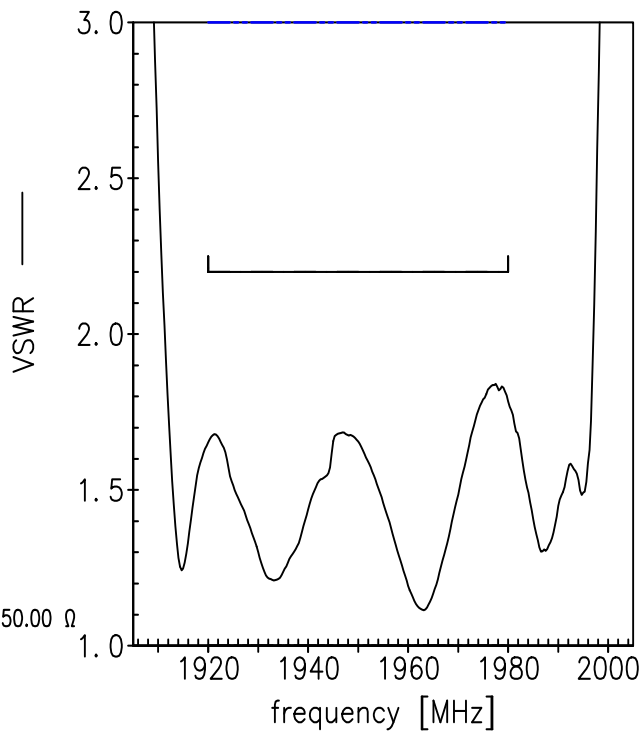
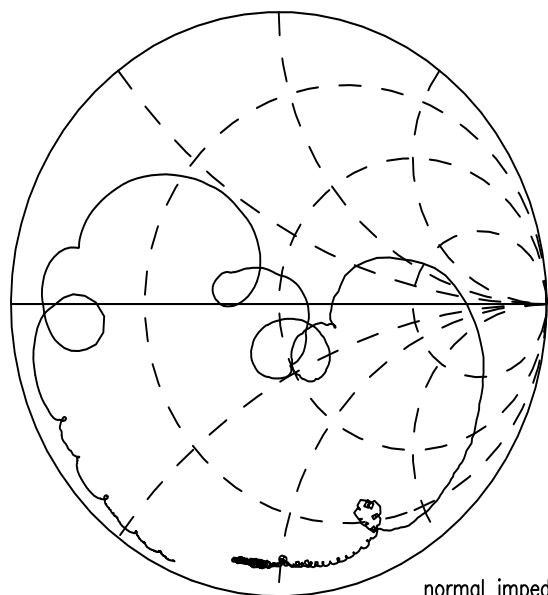


Data sheet

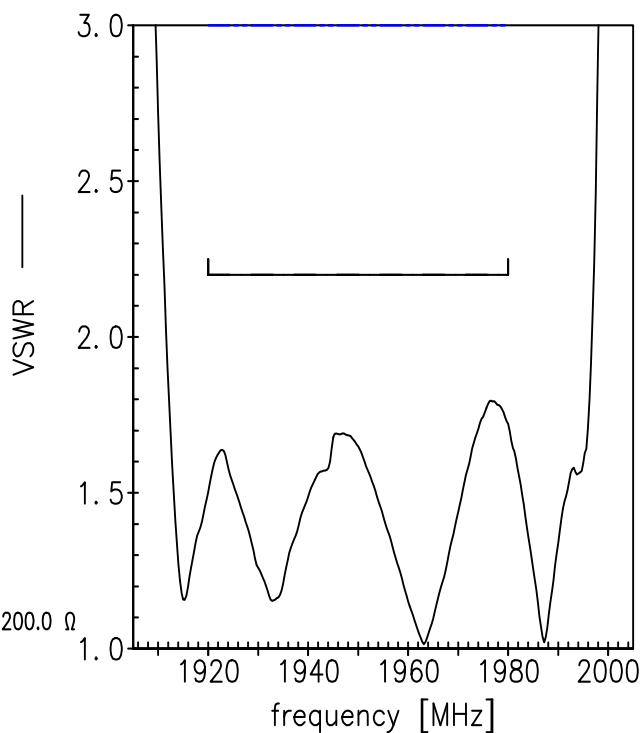
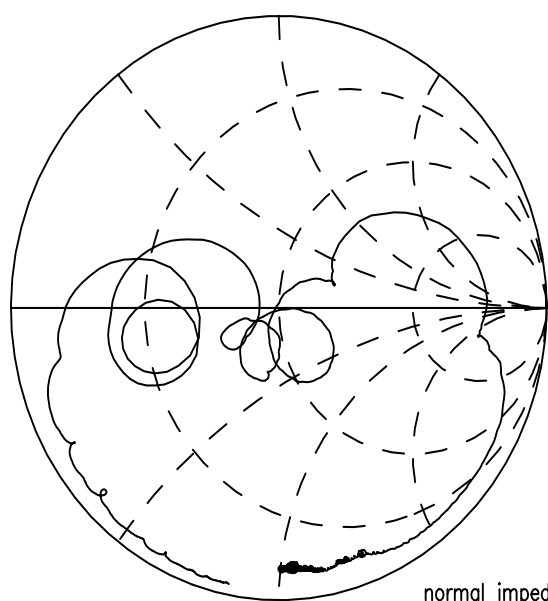
SMD

Smith charts

S₁₁ function



S₂₂ function



Data sheet



References

| | |
|----------------------------|--|
| Type | B9610 |
| Ordering code | B39202B9610P810 |
| Marking and package | C61157-A8-A9 |
| Packaging | F61074-V8237-Z000 |
| Date codes | L_1126 |
| S-parameters | B9610_NB.s2p, B9610_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 a large variety of matching coils. |

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

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