



SAW Components

SAW filter

GPS

| | |
|-----------------------|------------------------|
| Series/type: | B9416 |
| Ordering code: | B39162B9416K610 |
| Date: | March 22, 2006 |
| Version: | 2.0 |



Data sheet



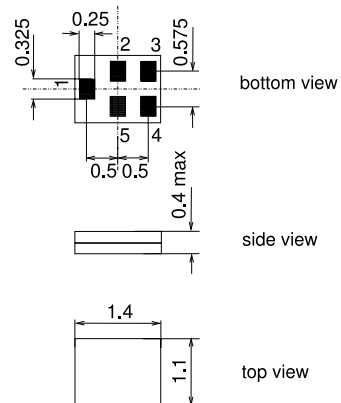
Application

- Low-loss RF filter for mobile telephone
GPS systems
- Filter impedance 50 Ω
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 2.0 MHz



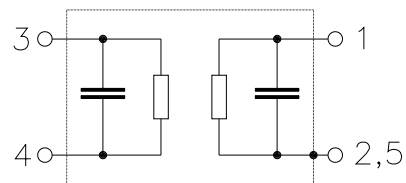
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5F
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



Pin configuration

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





Data sheet



Characteristics

Operating temperature range: $T = -30\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

| | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|----------------|------|-----------------|------|-----|
| Center frequency | f_C | — | 1575.42 | — | MHz |
| Maximum insertion attenuation | α_{max} | | | | |
| 1574.42 ... 1576.42 MHz | | — | 0.9 | 1.2 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 1574.42 ... 1576.42 MHz | | — | 0.05 | 0.3 | dB |
| Input VSWR | | | | | |
| 1574.42 ... 1576.42 MHz | | — | 1.1 | 1.8 | |
| Output VSWR | | | | | |
| 1574.42 ... 1576.42 MHz | | — | 1.1 | 1.8 | |
| Attenuation | α | | | | |
| 0.1 ... 960.0 MHz | | 38 | 40 | — | dB |
| 960.0 ... 1460.0 MHz | | 35 | 39 | — | dB |
| 1460.0 ... 1513.0 MHz | | 22 | 28 | — | dB |
| 1648.0 ... 1710.0 MHz | | 22 | 26 | — | dB |
| 1710.0 ... 1990.0 MHz | | 25 | 33 | — | dB |
| 1990.0 ... 2300.0 MHz | | 25 | 30 | — | dB |
| 2300.0 ... 4000.0 MHz | | 30 | 38 | — | dB |
| 4000.0 ... 6000.0 MHz | | 20 | 35 | — | dB |



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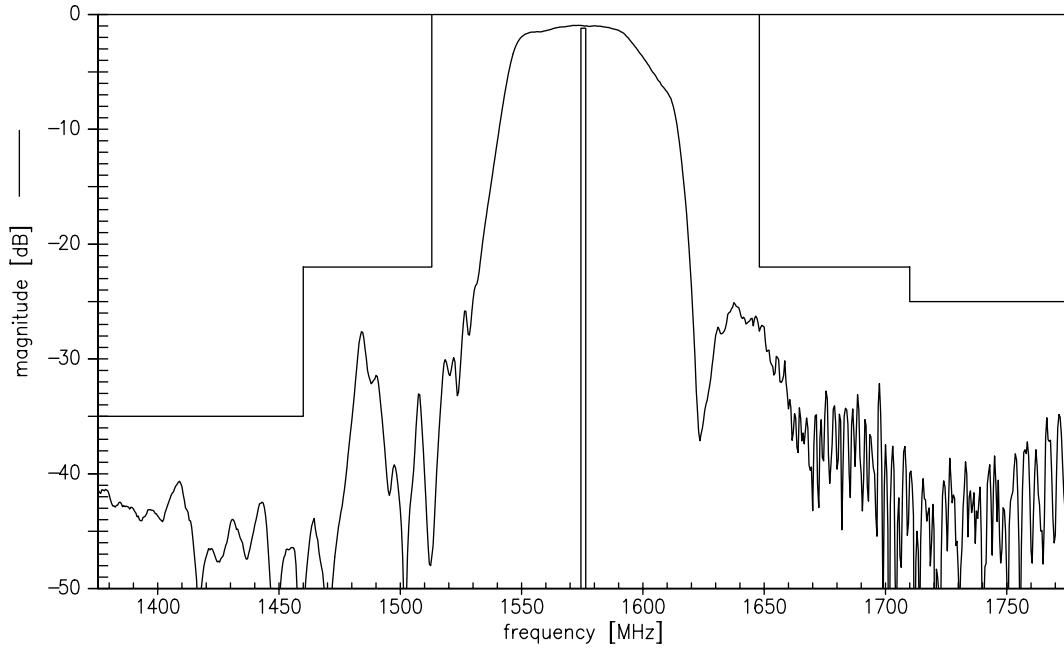
Maximum ratings

| | | | | |
|----------------------------|------------------|------------------|-----|-------------------------------|
| Operable temperature range | T | -40/+85 | °C | |
| Storage temperature range | T _{stg} | -40/+85 | °C | |
| DC voltage | V _{DC} | 3 | V | |
| ESD voltage | V _{ESD} | 50 ¹⁾ | V | machine model, 10 pulses |
| Input power at | | | | source/load impedance 50Ω/50Ω |
| 1574.42 ... 1576.42 MHz | P _{IN} | 3 | dBm | cw |
| 50...1460, 1710...4000 MHz | P _{IN} | 15 | dBm | cw |

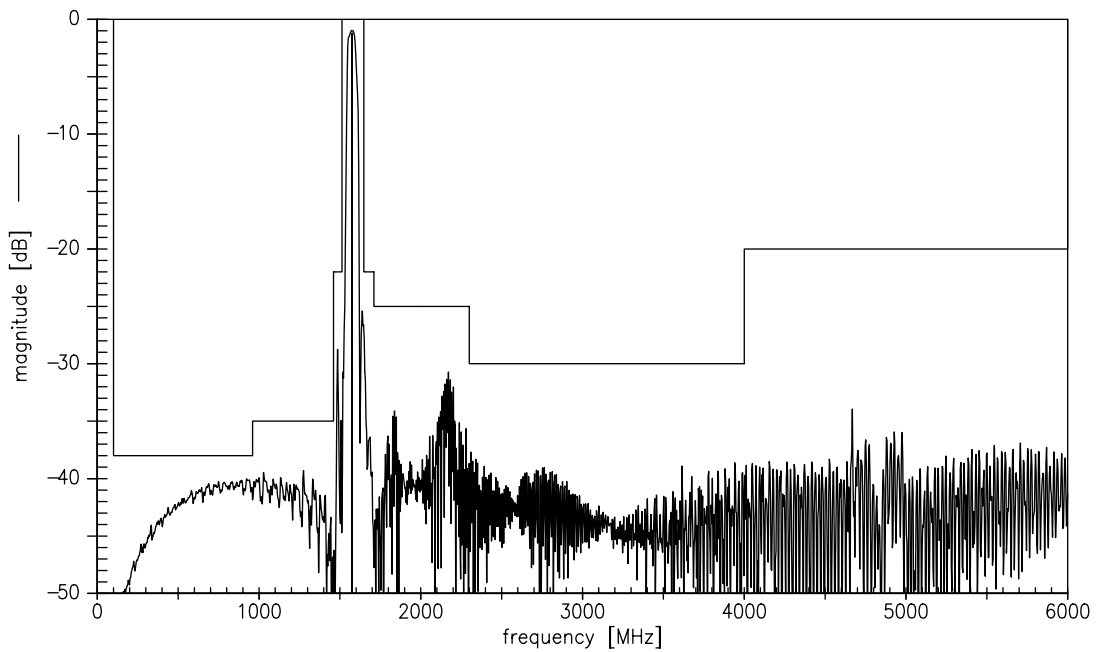
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (narrow band)



Transfer function (wide band)



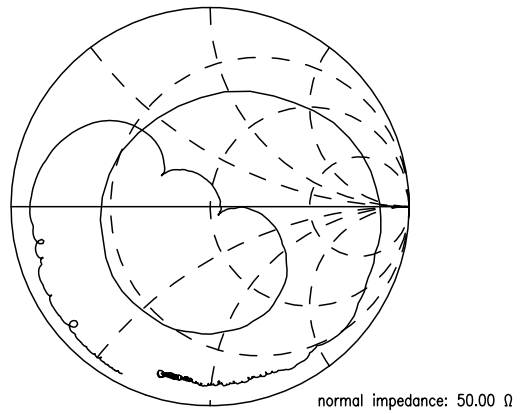
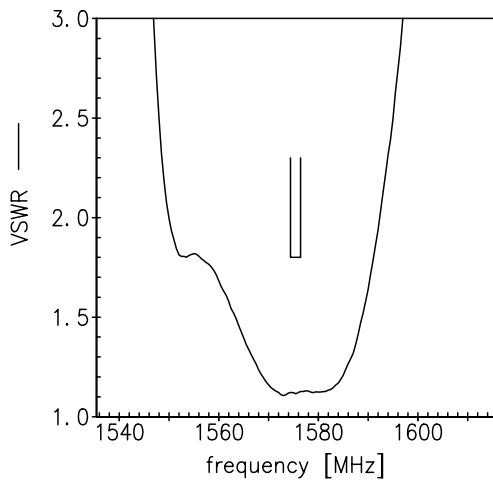


Data sheet

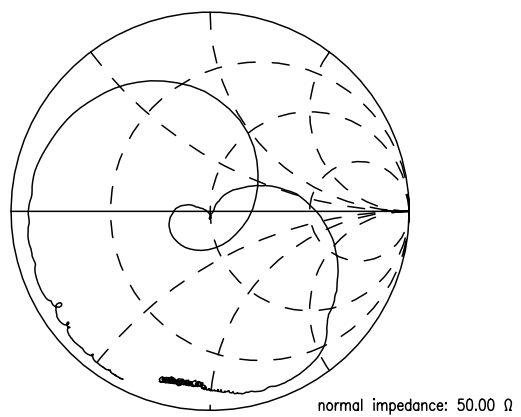
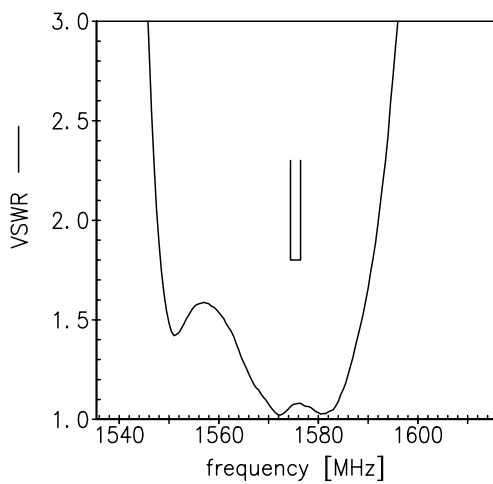


Smith charts

S₁₁ function



S₂₂ function





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B9416

SAW filter

1575.42 MHz

Data sheet



References

| | |
|----------------------------|--|
| Type | B9416 |
| Ordering code | B39162B9416K610 |
| Marking and package | C61157-A8-A1 |
| Packaging | F61074-V8212-Z000 |
| Date codes | L_1126 |
| S-parameters | B9416_NB.s2p B9416_WB.s2p |
| Soldering profile | S_6001 |
| RoHS compatible | defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment." |

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

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