



**THE DATASHEET OF
B39242B9413K610**





SAW Components

SAW filter

Bluetooth

| | |
|-----------------------|--------------------------|
| Series/type: | B9413 |
| Ordering code: | B39242B9413K610 |
| Date: | February 27, 2006 |
| Version: | 2.2 |



Data Sheet



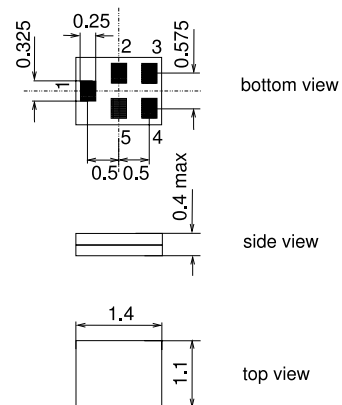
Application

- Low-loss RF filter for mobile telephone bluetooth systems
- Impedance transformation from 50 Ω to 50 Ω
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 83.5 MHz



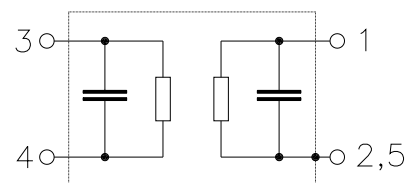
Features

- 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

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





Data Sheet



Characteristics

Operating temperature range: $T = -20\text{ °C to }+75\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega + 1.5\text{ nH (series)}$
 Terminating load impedance: $Z_L = 50\ \Omega + 2.5\text{ nH (series)}$

| | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|----------------|------|-----------------|------|-----|
| Center frequency | f_C | — | 2441.75 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2.0 2.2*) | 2.8 | dB |
| 2400.0 ... 2483.5 MHz | | | | | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0.6 | 1.5 | dB |
| 2400.0 ... 2483.5 MHz | | | | | |
| Input VSWR | | — | 1.4 1.9*) | 2.1 | |
| 2400.0 ... 2483.5 MHz | | | | | |
| Output VSWR | | — | 1.4 1.9*) | 2.1 | |
| 2400.0 ... 2483.5 MHz | | | | | |
| Attenuation | α | | | | |
| 0.0 ... 960.0 MHz | | 40 | 42 | — | dB |
| 960.0 ... 1710.0 MHz | | 35 | 39 | — | dB |
| 1710.0 ... 2170.0 MHz | | 36 | 38 | — | dB |
| 2170.0 ... 2250.0 MHz | | 30 | 41 | — | dB |
| 2250.0 ... 2300.0 MHz | | 25 | 38 | — | dB |
| 2550.0 ... 2650.0 MHz | | 18 | 26 | — | dB |
| 2650.0 ... 2800.0 MHz | | 20 | 30 | — | dB |
| 2800.0 ... 4000.0 MHz | | 25 | 35 | — | dB |
| 4000.0 ... 6000.0 MHz | | 30 | 40 | — | dB |

*) without input matching ($Z_S=50\Omega$) no serial coil'



SAW Components **B9413**

SAW filter **2441.75 MHz**

Data Sheet



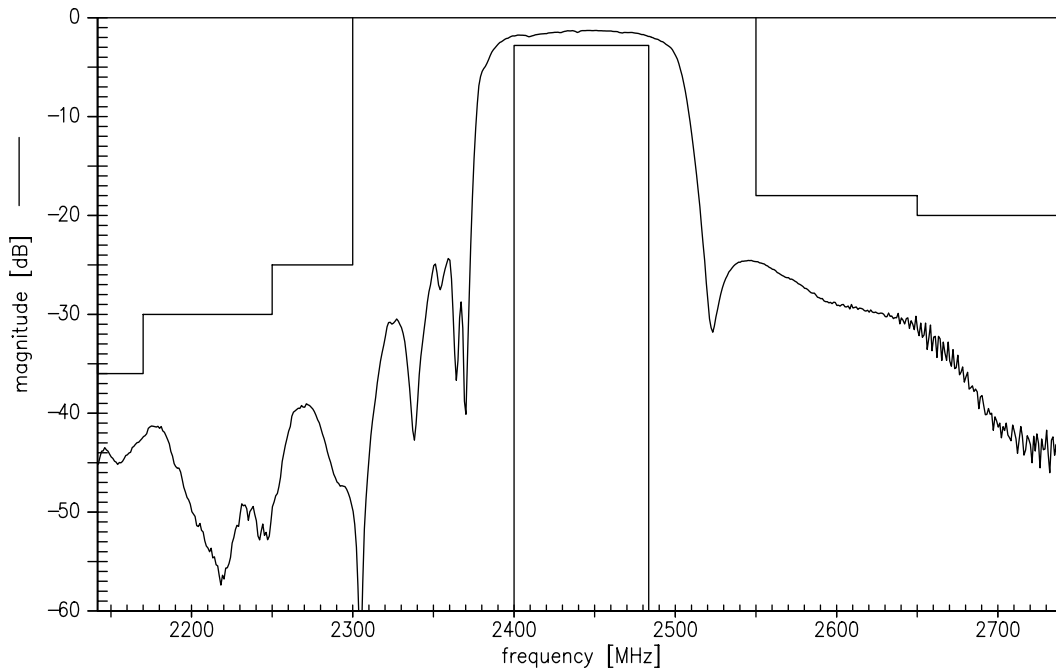
Maximum ratings

| | | | | |
|-------------------------------|------------------|------------------|-----|-------------------------------|
| Operable temperature range | T | -40/+85 | °C | |
| Storage temperature range | T _{stg} | -40/+85 | °C | |
| DC voltage | V _{DC} | 3.5 | V | |
| ESD voltage | V _{ESD} | 50 ¹⁾ | V | machine model, 10 pulses |
| Input power at | | | | source/load impedance 50Ω/50Ω |
| 2400 ... 2483.5 MHz | P _{IN} | 9 | dBm | bluetooth signal |
| 824 ... 849, 880 ... 915 MHz | P _{IN} | 15 | dBm | cw |
| 1710... 785, 1850... 1910 MHz | P _{IN} | 15 | dBm | cw |

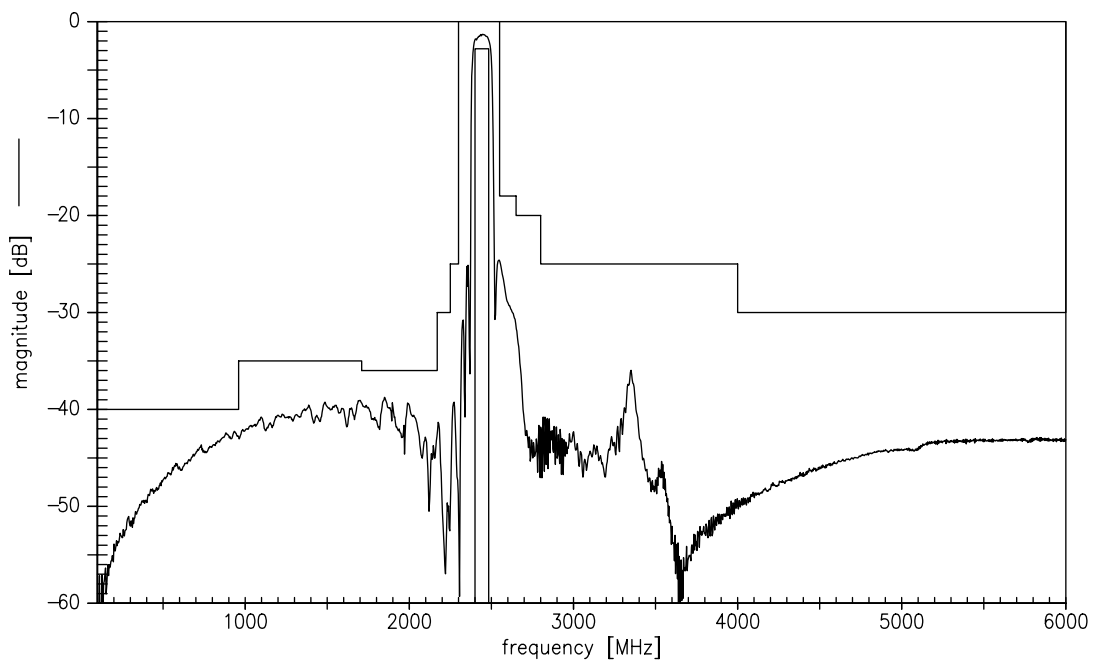
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (narrow band)



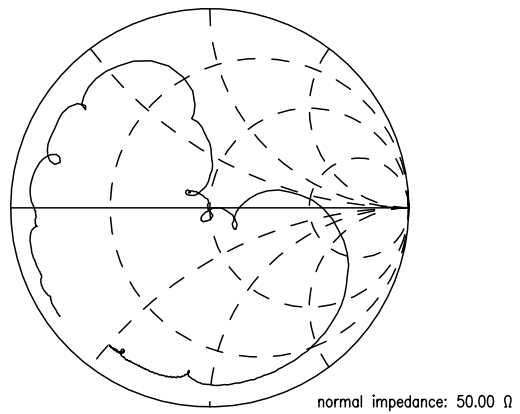
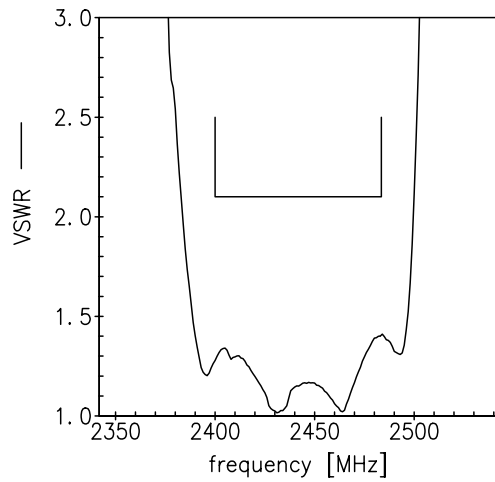
Transfer function (wide band)



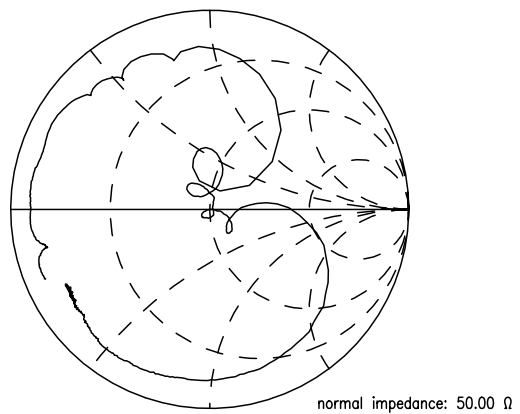
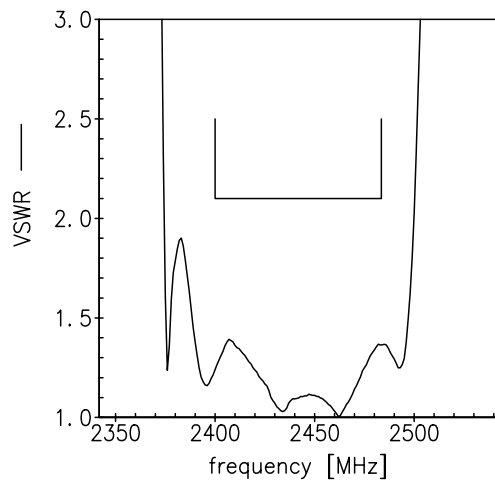


Smith charts

S₁₁ function



S₂₂ function





SAW Components

B9413

SAW filter

2441.75 MHz

Data Sheet



References

| | |
|----------------------------|--|
| Type | B9413 |
| Ordering code | B39242B9413K610 |
| Marking and package | C61157-A8-A1 |
| Packaging | F61074-V8212-Z000 |
| Date codes | L_1126 |
| S-parameters | LN97C_NB.s3p LN97C_WB.s3p |
| 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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