



SAW Components

SAW Tx Filter

WCDMA Band I

| | |
|-----------------------|--------------------------|
| Series/Type: | B9414 |
| Ordering code: | B39202B9414M410 |
| Date: | November 27, 2008 |
| Version: | 2.1 |



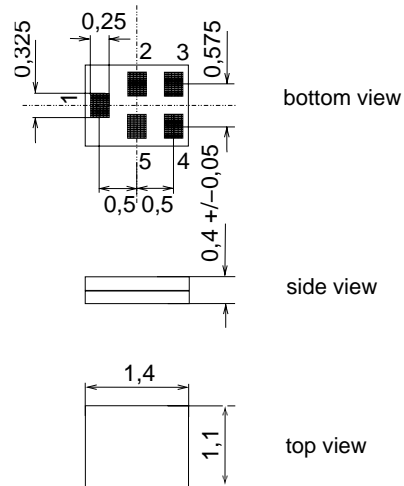
Application

- Low-loss RF filter for mobile telephone WCDMA systems, transmit path (TX)
- Impedance transform from 50 Ω to 50 Ω
- Unbalanced to unbalanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Very low Error Vector Magnitude (EVM)
- High Rx-suppression
- Usable passband 60 MHz



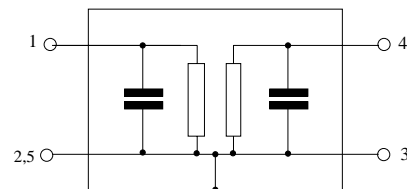
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS51
- RoHS compatible
- Approx. 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: $T = -20\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 50\ \Omega$ (unbalanced)

| | | min. | typ. @ 25 °C | max. | |
|--------------------------------------|----------------|------|-----------------|-------------------|-----|
| Center frequency | f_C | — | 1950.0 | — | MHz |
| Maximum insertion attenuation | α_{max} | | | | |
| 1920.0 ... 1980.0 | MHz | — | 2.5 | 3.2 ¹⁾ | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 1920.0 ... 1980.0 | MHz | — | 1.1 | 1.8 ²⁾ | dB |
| Input VSWR | | | | | |
| 1920.0 ... 1980.0 | MHz | — | 1.8 | 2.2 | |
| Output VSWR | | | | | |
| 1920.0 ... 1980.0 | MHz | — | 1.8 | 2.2 | |
| Attenuation | α | | | | |
| 0.0 ... 960.0 | MHz | 27 | 34 | — | dB |
| 960.0 ... 1575.0 | MHz | 25 | 35 | — | dB |
| 1575.0 ... 1576.0 | MHz | 32 | 35 | — | dB |
| 1576.0 ... 1730.0 | MHz | 30 | 35 | — | dB |
| 1730.0 ... 1880.0 | MHz | 30 | 38 | — | dB |
| 2025.0 ... 2050.0 | MHz | 35 | 54 | — | dB |
| 2110.0 ... 2170.0 | MHz | 35 | 38 | — | dB |
| 2200.0 ... 3100.0 | MHz | 33 | 37 | — | dB |
| 3100.0 ... 3960.0 | MHz | 30 | 42 | — | dB |
| 3960.0 ... 6000.0 | MHz | 20 | 34 | — | dB |

¹⁾ ILmax max. 3.0dB at 25 °C

²⁾ AR max. 1.6dB at 25 °C
 EVM 1.3% at 25 °C, 2.2% over temperature



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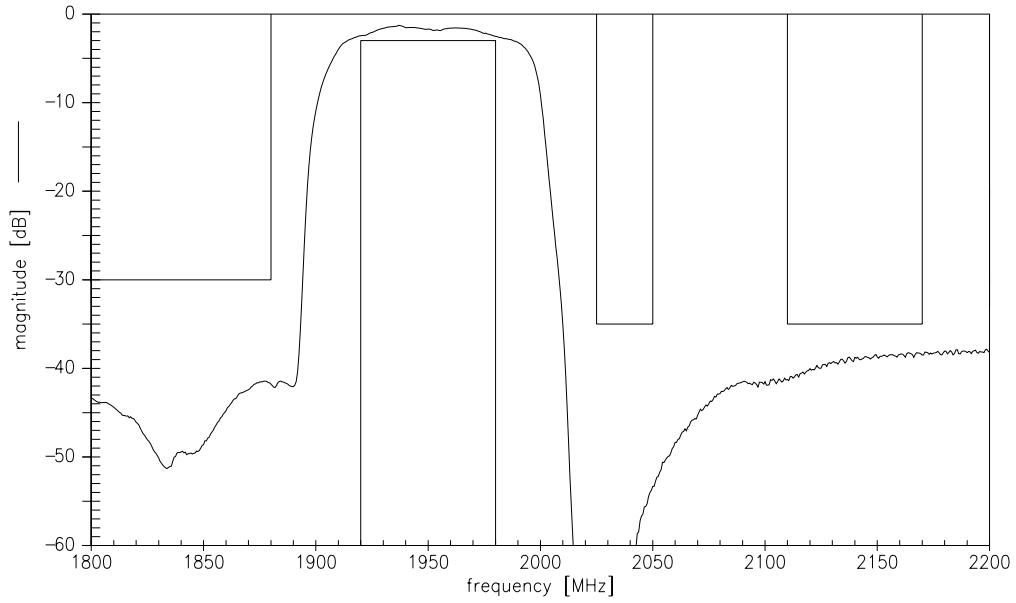
Maximum ratings

| | | | | |
|----------------------------|------------------|------------------|-----|--------------------------|
| Operable temperature range | T | -30/+85 | °C | |
| Storage temperature range | T _{stg} | -40/+85 | °C | |
| DC voltage | V _{DC} | 5 | V | |
| ESD voltage | V _{ESD} | 50 ¹⁾ | V | machine model, 10 pulses |
| Source Power | P _S | 10 | dBm | cw signal |

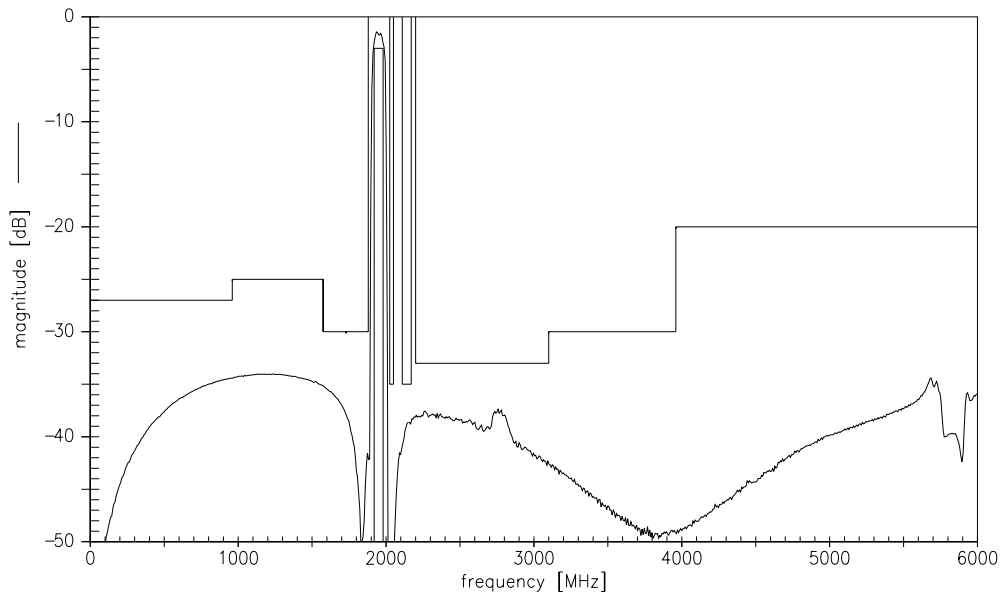
1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function



Transfer function (wideband)

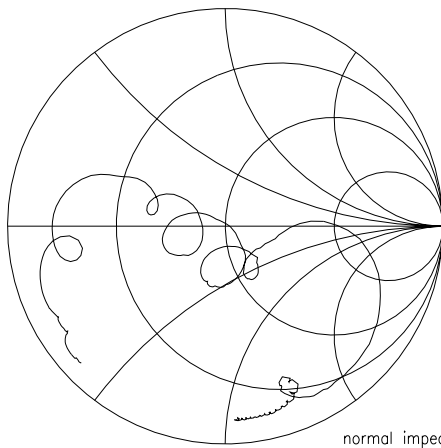


Data Sheet

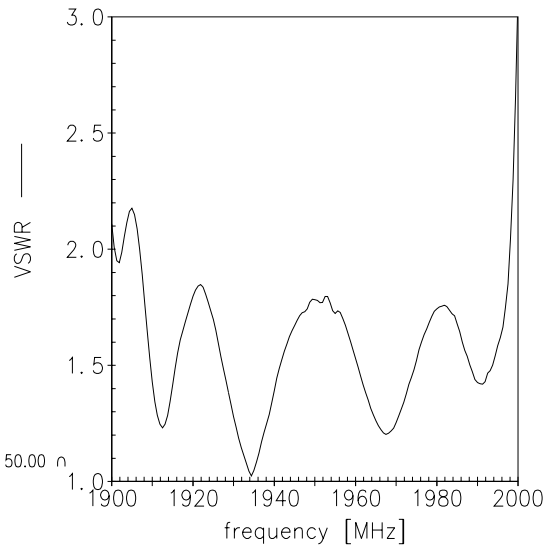


Smith chart

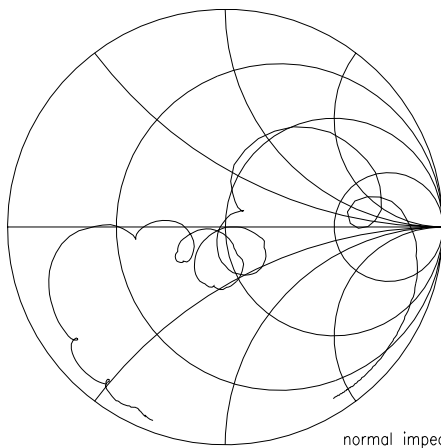
S₁₁ function



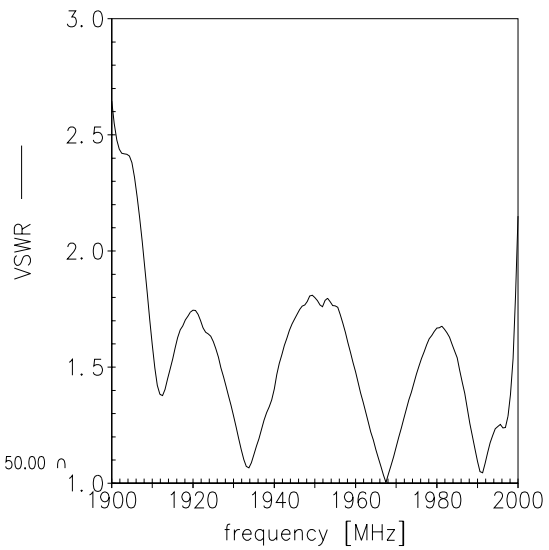
normal impedance: 50.00 Ω



S₂₂ function



normal impedance: 50.00 Ω





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1950.0 MHz

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References

| | |
|----------------------------|--|
| Type | B9414 |
| Ordering Code | B39202B9414M410 |
| Marking and Package | C61157-A8-A3 |
| Packaging | F61074-V8237-Z000 |
| Date Codes | L_1126 |
| Soldering profile | S_6001 |
| S-Parameters | B9414_NB.s2p, B9414_WB.s2p see file header for port/pin assignment table |
| 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." |
| Moldability | Before using in overmolding environment, please contact your EPCOS sales office. |

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

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