



SAW Components

SAW Rx Filter

GSM 900

| | |
|-----------------------|--------------------------|
| Series/Type: | B9401 |
| Ordering code: | B39941-B9401-K610 |
| Date: | Oct 21, 2005 |
| Version: | 1 |



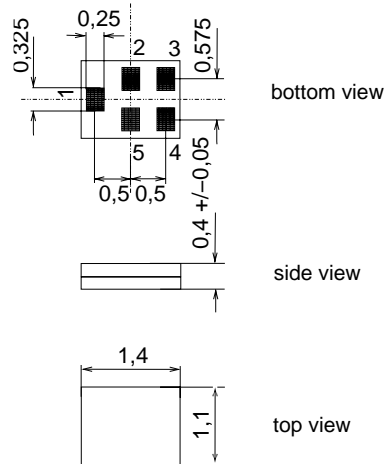
Application

- Low-loss RF filter for mobile telephone GSM systems, receive path (RX)
- Impedance transform from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 35 MHz
- Suitable for GPRS class 1 to 12



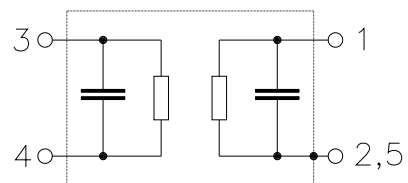
Features

- Package size 1.4 x 1.1 x 0.4 mm³
- RoHS compliant
- Approx. weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals



Pin configuration

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





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B9401

Low-Loss Filter for Mobile Communication

942.50 MHz

Data Sheet



Characteristics

Operating temperature range: $T = -20$ to $+75$ °C
 Terminating source impedance: $Z_S = 50\Omega$
 Terminating load impedance: $Z_L = 150\Omega \parallel 82$ nH (balanced)

| | | | | B9401 | | | |
|--|----------------|-------------------|-----|--------------|------------------------|-------------|-----|
| | | | | min. | typ. @ 25°C | max. | |
| Center frequency | f_C | | | — | 942.5 | — | MHz |
| Maximum insertion attenuation | α_{max} | | | — | 1.5 | 2.1 | |
| | | 925.0 ... 960.0 | MHz | | | | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | — | 0.6 | 1.1 | |
| | | 925.0 ... 960.0 | MHz | | | | dB |
| Input VSWR | | | | — | 1.7 | 2.0 | |
| | | 925.0 ... 960.0 | MHz | | | | |
| Output VSWR | | | | — | 1.7 | 2.0 | |
| | | 925.0 ... 960.0 | MHz | | | | |
| Output amplitude balance (S_{31}/S_{21}) | | | | | | | |
| | | 925.0 ... 960.0 | MHz | -1.0 | -0.7/0.5 | 1.0 | dB |
| Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$) | | | | | | | |
| | | 925.0 ... 960.0 | MHz | -5 | -2/+3 | 5 | ° |
| Attenuation | α | | | | | | |
| | | 0.0 ... 480.0 | MHz | 45 | 53 | — | dB |
| | | 480.0 ... 900.0 | MHz | 30 | 34 | — | dB |
| | | 900.0 ... 905.0 | MHz | 25 | 28 | — | dB |
| | | 905.0 ... 915.0 | MHz | 20 | 24 | — | dB |
| | | 980.0 ... 1000.0 | MHz | 25 | 29 | — | dB |
| | | 1000.0 ... 1850.0 | MHz | 28 | 32 | — | dB |
| | | 1850.0 ... 1920.0 | MHz | 40 | 46 | — | dB |
| | | 1920.0 ... 3700.0 | MHz | 35 | 43 | — | dB |
| | | 3700.0 ... 6000.0 | MHz | 40 | 48 | — | dB |



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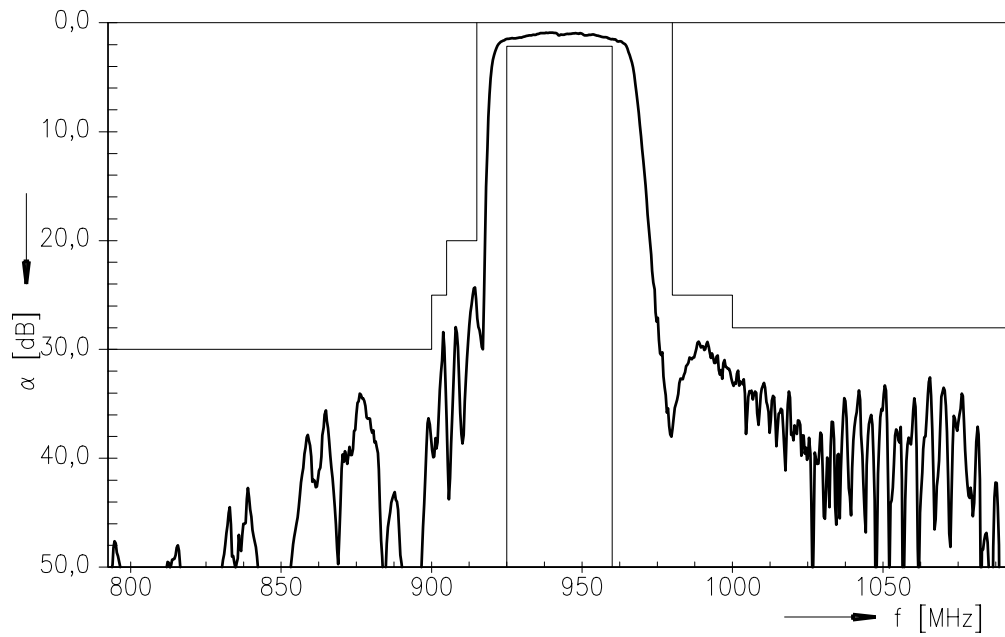
Maximum ratings

| | | | | |
|----------------------------|------------------|-------------------|-----|--|
| 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} | 100 ¹⁾ | V | machine model, 10 pulses |
| Input Power at | | | | |
| GSM850, GSM900 | P _{IN} | 15 | dBm | effective power in the on-state, duty cycle 4:8 |
| GSM1800, GSM1900 | P _{IN} | 15 | dBm | |
| Tx bands | | | | |

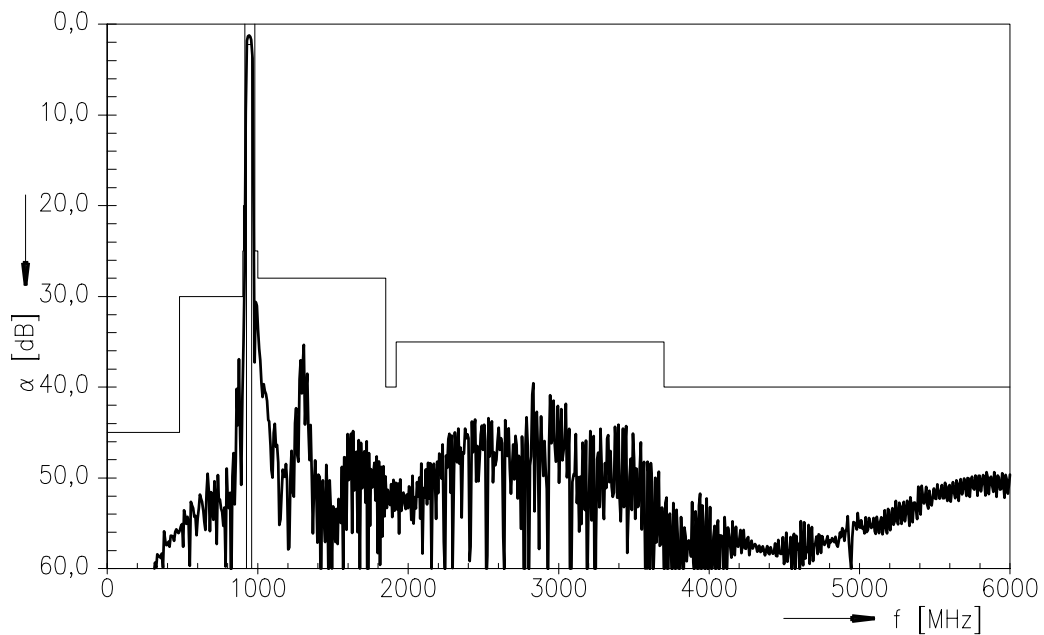
¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



Transfer function (passband)



Transfer function (wideband)



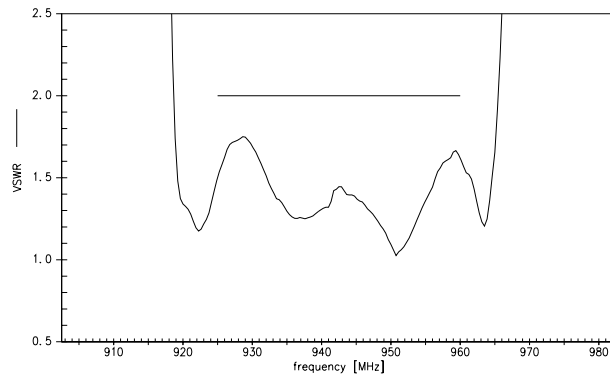
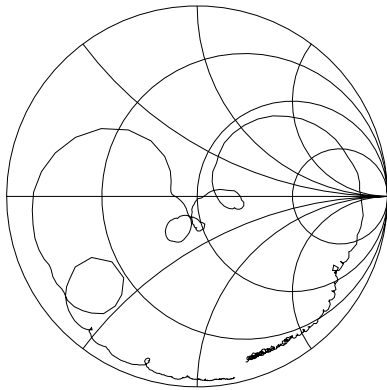


Data Sheet

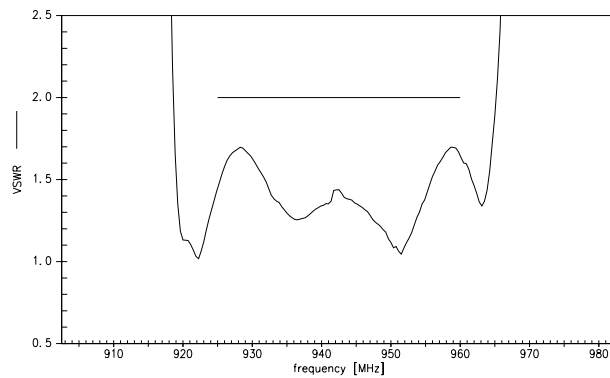
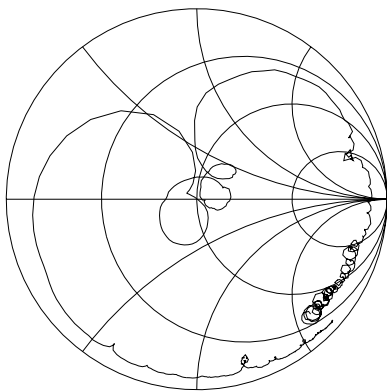


Smith chart / VSWR

S_{11} function



S_{22} function



Please read *cautions and warnings and important notes* at the end of this document.



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| | | |
|----------------------------|------------------------------|--|
| Type | B9401 | |
| Ordering code | B39941-B9401-K610 | |
| Marking and Package | C61157-A8-A1 | |
| Packaging | F61074-V8212-Z000 | |
| Date Codes | L_1126 | |
| S-Parameters | B9401_NB.s3p B9401_WB.s3p | |
| Soldering profile | S_6001 | |

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

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