

RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

## SAW Components

### SAW Filter

PCS / WCDMA band II

|                |                 |
|----------------|-----------------|
| Series/type:   | B9477           |
| Ordering code: | B39202B9477P810 |
| Date:          | August 16, 2012 |
| Version:       | 2.2             |

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| <b>Ordering code:</b> | <b>B39202B9477P810</b> |
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| <b>Version:</b>       | <b>2.2</b>             |

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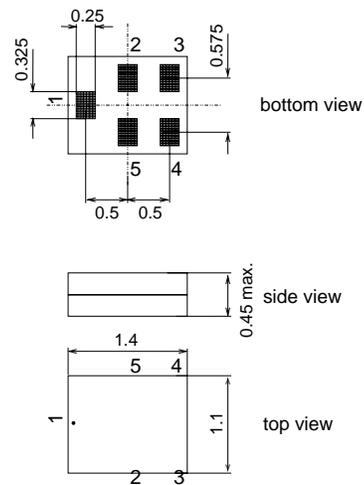
EPCOS AG is a TDK Group Company.


**Application**

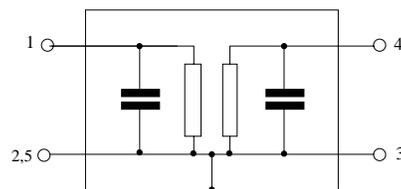
- Low-loss RF filter for mobile telephone PCS systems, receive path (RX)
- Useable passband 60 MHz
- Useable for antenna diversity systems
- Suitable for GPRS class 1 to 12


**Features**

- Package size 1.4 x 1.1 mm<sup>2</sup>
- max. Package height 0.45 mm
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


**Pin configuration**

- 1 Input unbalanced
- 4 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:  $Z_S = 50\ \Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 50\ \Omega$  (unbalanced)

|                                      |                 | <b>B9477</b>     |                        |                   |     |
|--------------------------------------|-----------------|------------------|------------------------|-------------------|-----|
|                                      |                 | <b>min.</b>      | <b>typ.<br/>@ 25°C</b> | <b>max.</b>       |     |
| <b>Center frequency</b>              | $f_C$           | -                | 1960.0                 | -                 | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$ | -                | 2.6                    | 4.2 <sup>1)</sup> | dB  |
| 1930.6 ... 1989.4 MHz                |                 |                  |                        |                   |     |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$  | -                | 1.1                    | 2.6               | dB  |
| 1930.6 ... 1989.4 MHz                |                 |                  |                        |                   |     |
| <b>Input return loss</b>             |                 | -                | 1.8                    | 2.3               |     |
| 1930.6 ... 1989.4 MHz                |                 |                  |                        |                   |     |
| <b>Output return loss</b>            |                 | -                | 2.0                    | 2.4               |     |
| 1930.6 ... 1989.4 MHz                |                 |                  |                        |                   |     |
| <b>Attenuation</b>                   | $\alpha$        |                  |                        |                   |     |
| DC ... 1500.0 MHz                    |                 | 43               | 51                     | -                 | dB  |
| 1500.0 ... 1907.0 MHz                |                 | 43               | 48                     | -                 |     |
| 1907.0 ... 1909.4 MHz                |                 | 43 <sup>2)</sup> | 51 <sup>3)</sup>       | -                 | dB  |
| 2040.0 ... 2070.0 MHz                |                 | 35               | 55                     | -                 |     |
| 2070.0 ... 2500.0 MHz                |                 | 35               | 46                     | -                 | dB  |
| 2500.0 ... 4500.0 MHz                |                 | 31               | 37                     | -                 |     |
| 4500.0 ... 5200.0 MHz                |                 | 31               | 36                     | -                 | dB  |
| 5200.0 ... 6000.0 MHz                |                 | 22               | 30                     | -                 |     |

1) 4.0dB for T= 0...85°C

2) 18dB for T= 100°C

3) 49dB for T= 100°C


**Maximum ratings**

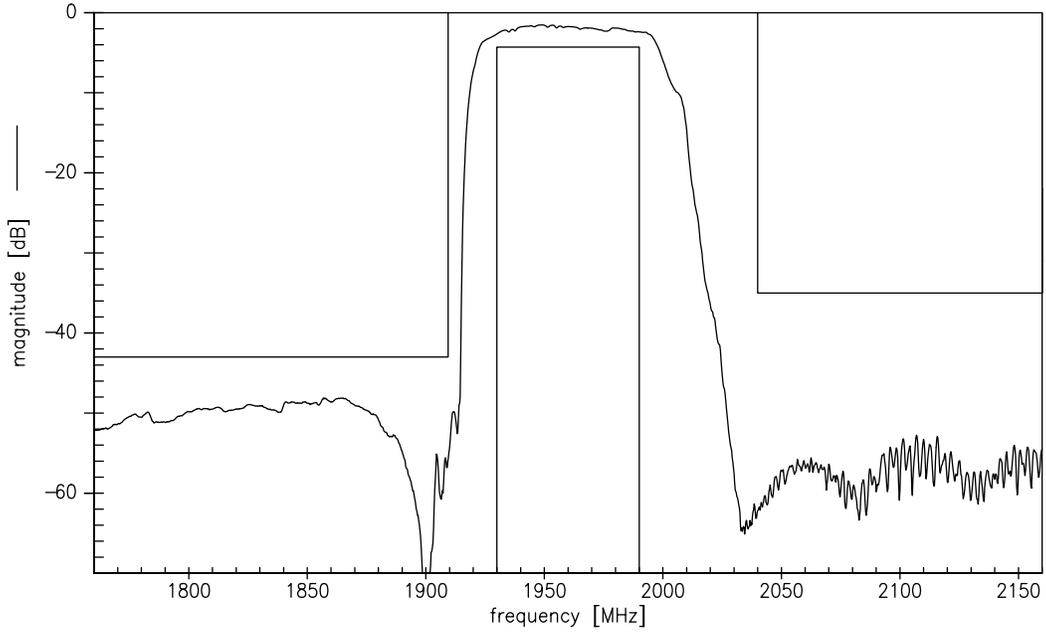
|                            |                  |                  |     |                           |
|----------------------------|------------------|------------------|-----|---------------------------|
| Operable temperature range | T                | -30/+85          | °C  |                           |
| Storage temperature range  | T <sub>stg</sub> | -40/+85          | °C  |                           |
| DC voltage                 | V <sub>DC</sub>  | 5                | V   |                           |
| ESD voltage                | V <sub>ESD</sub> | 50 <sup>1)</sup> | V   | machine model, 10 pulses  |
| Input Power at PCS Tx band | P <sub>IN</sub>  | 16               | dBm | CW signal @ T=55°C, 2000h |

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

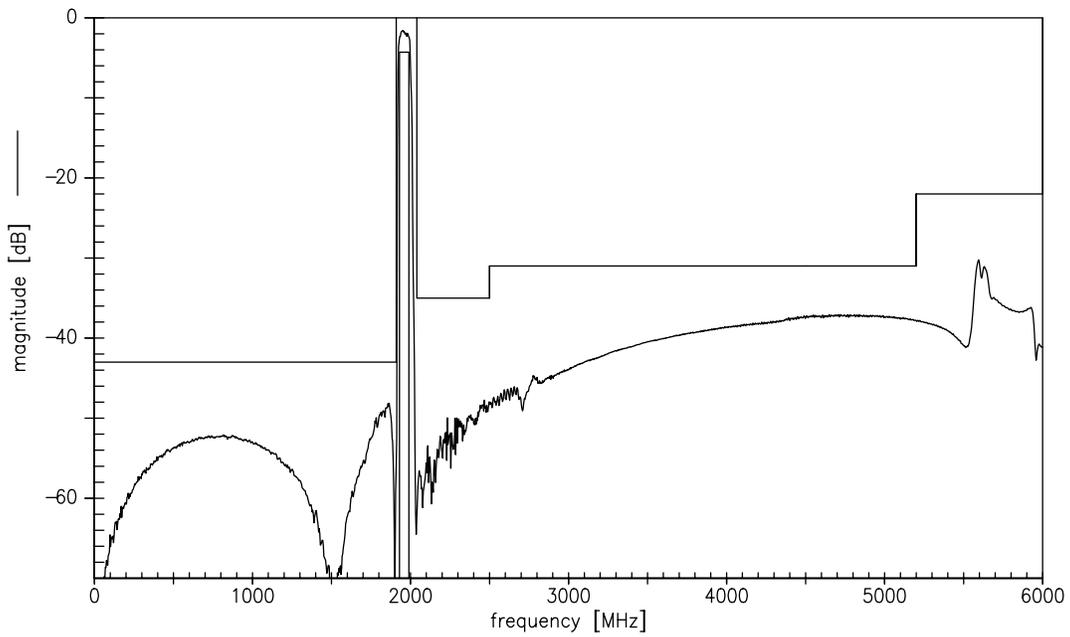
Data sheet



Transfer function (narrowband)



Transfer function (wideband)

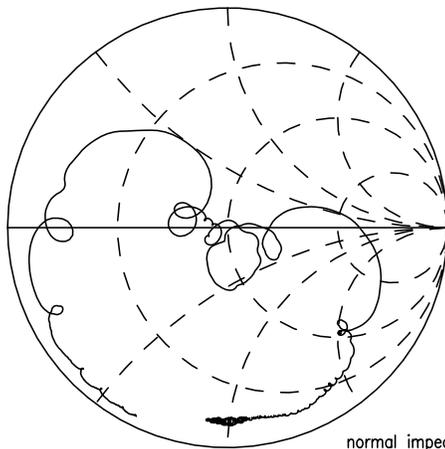


Data sheet

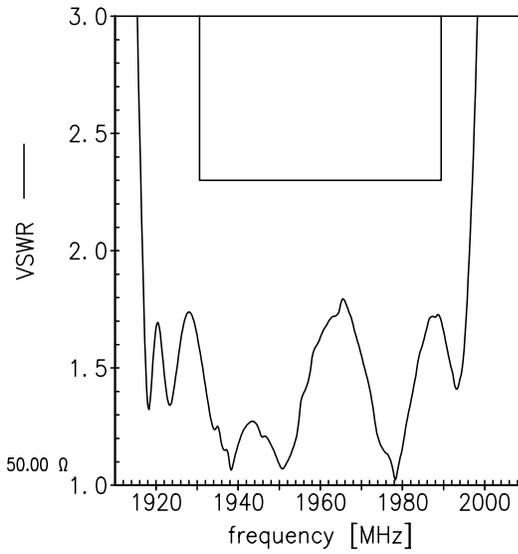


Smith chart

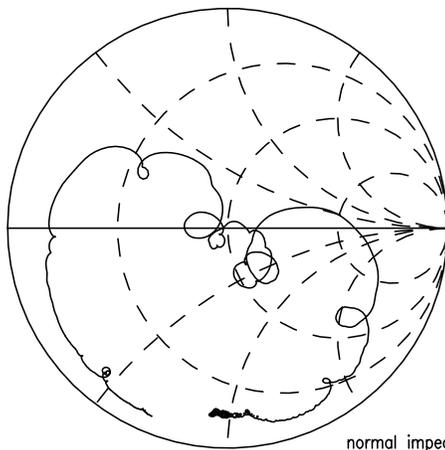
$S_{11}$  function



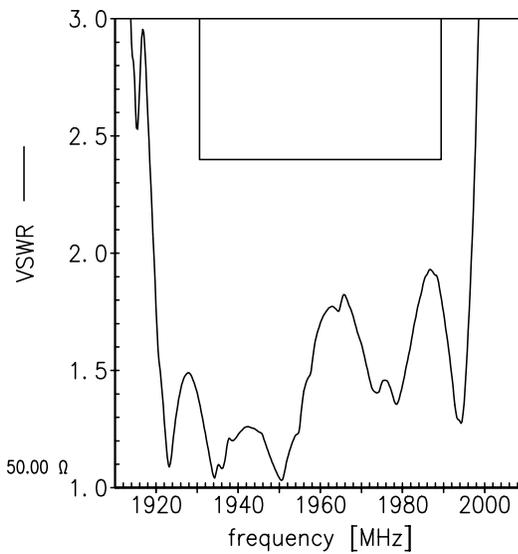
normal impedance: 50.00  $\Omega$



$S_{22}$  function



normal impedance: 50.00  $\Omega$



|                       |                   |
|-----------------------|-------------------|
| <b>SAW Components</b> | <b>B9477</b>      |
| <b>SAW Filter</b>     | <b>1960.0 MHz</b> |

Data sheet



References

|                            |  |
|----------------------------|--|
| <b>Type</b>                | B9477  |
| <b>Ordering code</b>       | B39202B9477P810  |
| <b>Marking and package</b> | C61157-A8-A3   |
| <b>Packaging</b>           | F61074-V8237-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        | B9477_NB.s2p<br>B9477_WB.s2p<br>see file header for port/pin assignment table  |
| <b>Soldering profile</b>   | S_6001   |
| <b>RoHS compatible</b>     | defined as compatible with the following documents:<br>"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." |
| <b>Moldability</b>         | Before using in overmolding environment, please contact your EPCOS sales office.   |
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