



## **SAW Components**

### **SAW Tx filter**

W-CDMA IF

|                       |                        |
|-----------------------|------------------------|
| <b>Series/type:</b>   | <b>B3669</b>           |
| <b>Ordering code:</b> | <b>B39212B3669U410</b> |
| <b>Date:</b>          | <b>March 12, 2010</b>  |
| <b>Version:</b>       | <b>2.0</b>             |



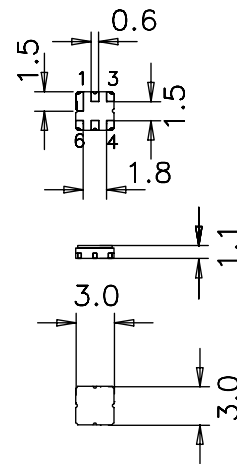
**Application**

- Low-loss RF filter for UMTS system
- Usable passband 60 MHz
- No matching network required for operation at 50Ω



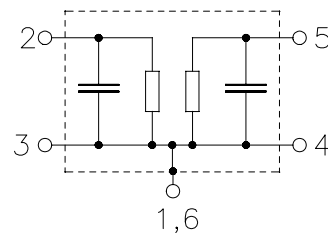
**Features**

- Package size 3.0x3.0x 1.1 mm<sup>3</sup>
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Package code DCC6C



**Pin configuration**

- 2 Input
- 1,3 Input ground
- 5 Output
- 4,6 Output grounded





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2140.00 MHz

Data sheet



**Characteristics**

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

|   |                | min. | typ.   | max. |       |
|---|----------------|------|--------|------|-------|
| <b>Nominal frequency</b>                    | $f_N$          | —    | 2140,0 | —    | MHz   |
| <b>Maximum insertion attenuation</b>        | $\alpha_{max}$ | —    | 3,0    | 3,5  | dB    |
| 2110,0 ... 2170,0 MHz                       |                |      |        |      |       |
| <b>Amplitude ripple (p-p)</b>               | $\Delta\alpha$ | —    | 1,0    | 1,5  | dB    |
| 2110,0 ... 2170,0 MHz                       |                |      |        |      |       |
| <b>Return loss</b>                          |                | 9,0  | 11,0   | —    | dB    |
| 2110,0 ... 2170,0 MHz                       |                |      |        |      |       |
| <b>Attenuation</b>                          | $\alpha$       |      |        |      | dB    |
| 50,0 ... 1400,0 MHz                         |                | 22,0 | 27,0   | —    |       |
| 1400,0 ... 1910,0 MHz                       |                | 25,0 | 28,0   | —    |       |
| 1910,0 ... 1980,0 MHz                       |                | 30,0 | 38,0   | —    |       |
| 2300,0 ... 3700,0 MHz                       |                | 25,0 | 30,0   | —    |       |
| 3700,0 ... 5300,0 MHz                       |                | 20,0 | 25,0   | —    |       |
| 5300,0 ... 5700,0 MHz                       |                | 15,0 | 18,0   | —    |       |
| <b>Temperature coefficient of frequency</b> | $TC_f$         | —    | -35    | —    | ppm/K |



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**Characteristics**

Temperature range for specification:  $T = -40\text{ °C to }+85\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

|   |                       | min. | typ.   | max. |       |
|---|-----------------------|------|--------|------|-------|
| <b>Nominal frequency</b>                    | $f_N$                 | —    | 2140,0 | —    | MHz   |
| <b>Maximum insertion attenuation</b>        | $\alpha_{max}$        | —    | 3,0    | 3,5  | dB    |
|   | 2110,0 ... 2170,0 MHz |      |        |      |       |
| <b>Amplitude ripple (p-p)</b>               | $\Delta\alpha$        | —    | 1,2    | 1,8  | dB    |
|   | 2110,0 ... 2170,0 MHz |      |        |      |       |
| <b>Return loss</b>                          |                       | 8,0  | 10,0   | —    | dB    |
|   | 2110,0 ... 2170,0 MHz |      |        |      |       |
| <b>Attenuation</b>                          | $\alpha$              |      |        |      |       |
|   | 50,0 ... 1400,0 MHz   | 22,0 | 27,0   | —    | dB    |
|   | 1400,0 ... 1910,0 MHz | 25,0 | 28,0   | —    | dB    |
|   | 1910,0 ... 1980,0 MHz | 30,0 | 38,0   | —    | dB    |
|   | 2300,0 ... 3700,0 MHz | 25,0 | 30,0   | —    | dB    |
|   | 3700,0 ... 5300,0 MHz | 20,0 | 25,0   | —    | dB    |
|   | 5300,0 ... 5700,0 MHz | 15,0 | 18,0   | —    | dB    |
| <b>Temperature coefficient of frequency</b> | $TC_f$                | —    | -35    | —    | ppm/K |



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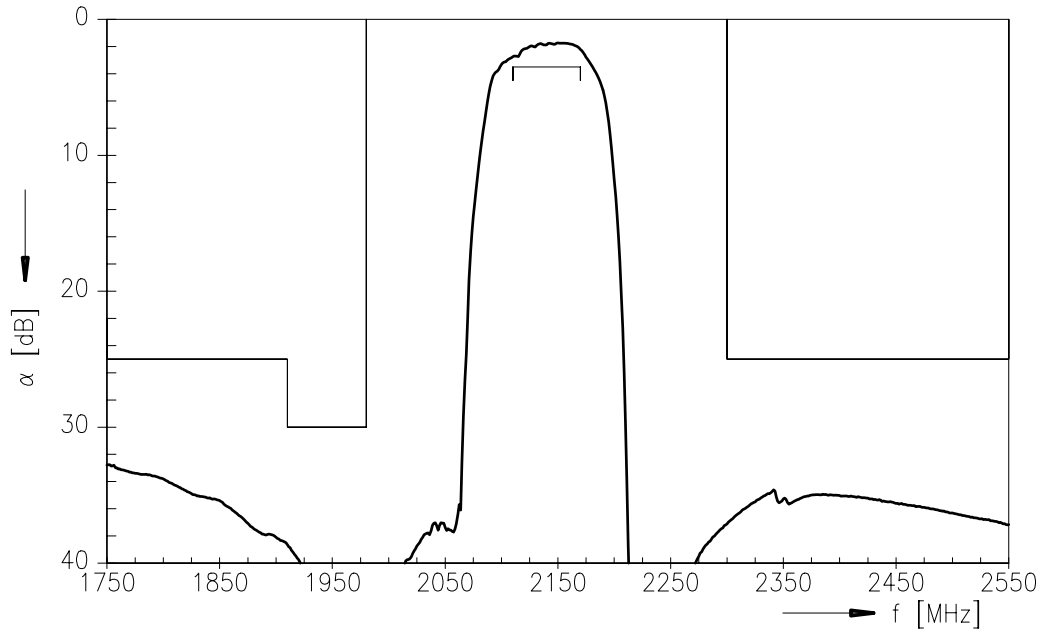
### Maximum ratings

|  |                  |                  |     |                         |
|--|------------------|------------------|-----|-------------------------|
| Operable temperature range               | T                | -40/+85          | °C  | machine model, 1 pulses |
| Storage temperature range                | T <sub>stg</sub> | -40/+85          | °C  |                         |
| DC voltage                               | V <sub>DC</sub>  | 0                | V   |                         |
| ESD voltage                              | V <sub>ESD</sub> | 50 <sup>1)</sup> | V   |                         |
| Input power at<br>2010.00 MHz-2170.00MHz | P <sub>IN</sub>  | 10               | dBm |                         |

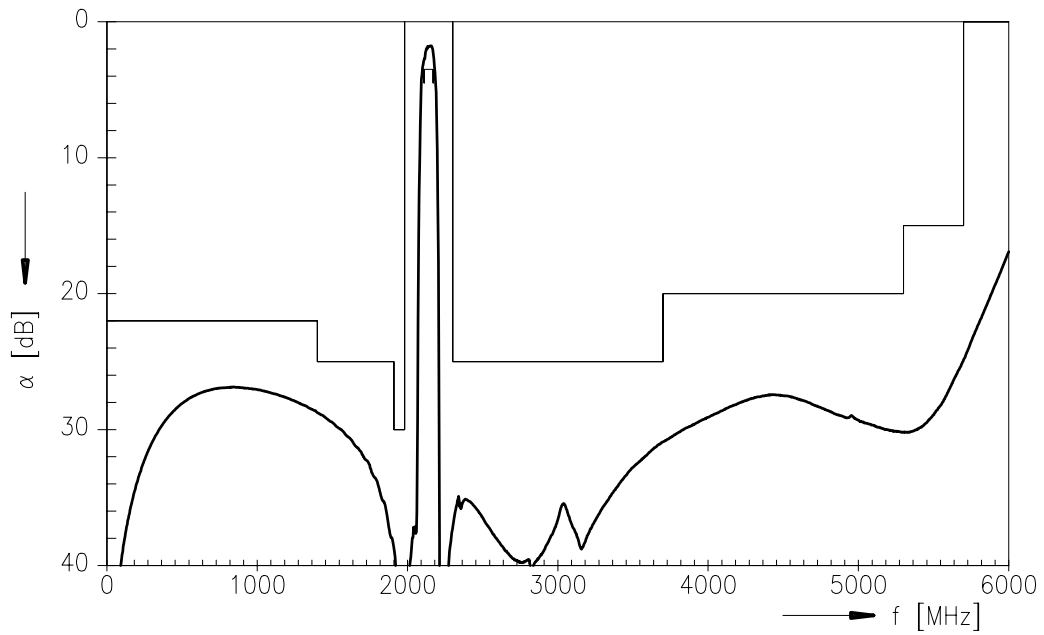
<sup>1)</sup> acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulses.



Transfer function



Transfer function (wideband)

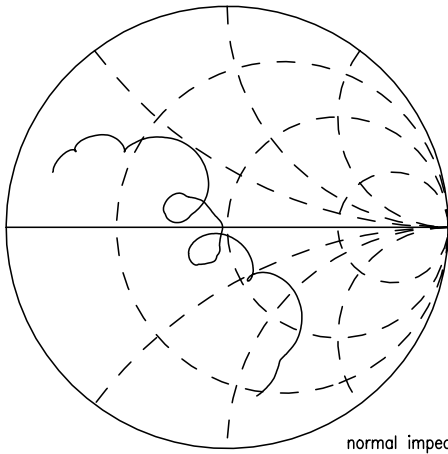


Data sheet

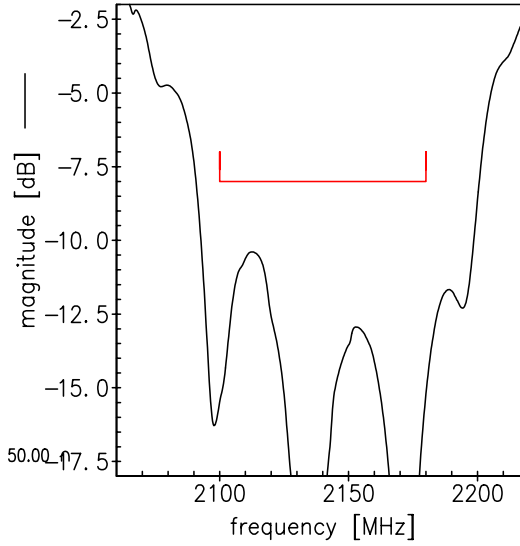


Smith charts

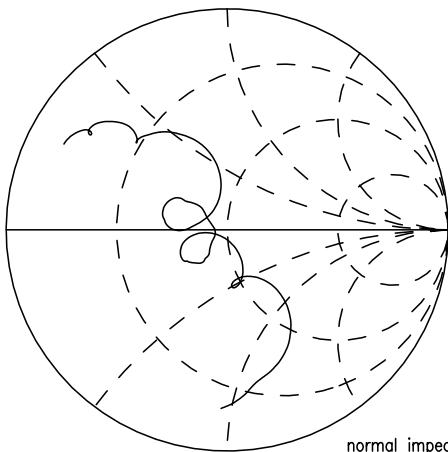
$S_{11}$  function



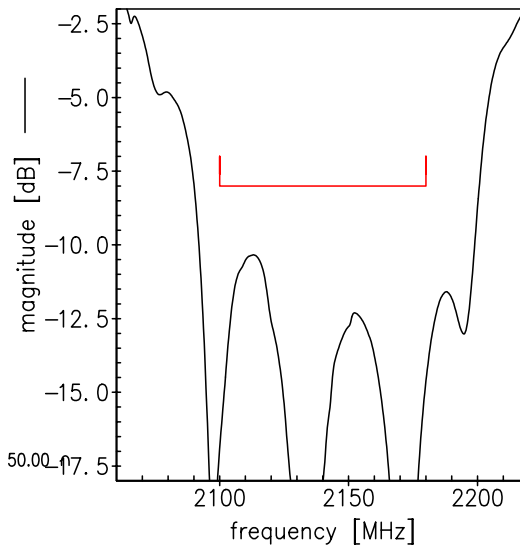
normal impedance: 50.00  $\uparrow$  7.5



$S_{22}$  function



normal impedance: 50.00  $\uparrow$  7.5





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2140.00 MHz

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## References

|                            |  |
|----------------------------|--|
| <b>Type</b>                | B3669  |
| <b>Ordering code</b>       | B39212B3669U410  |
| <b>Marking and package</b> | C61157-A7-A67  |
| <b>Packaging</b>           | F61074-V8168-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        | B3669 NB.s2p,<br>B3669 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." |

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