



# SAW Components

## SAW RF filter for base stations

LTE Band VII splitband RF Rx

|                       |                        |
|-----------------------|------------------------|
| <b>Series/type:</b>   | <b>B5164</b>           |
| <b>Ordering code:</b> | <b>B39262B5164U410</b> |
| <b>Date:</b>          | <b>Dec 09, 2014</b>    |
| <b>Version:</b>       | <b>2.1</b>             |

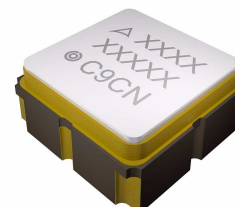
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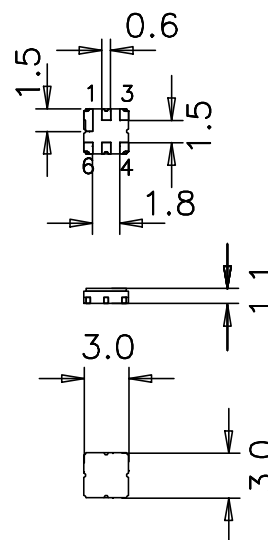
Data sheet

**Application**

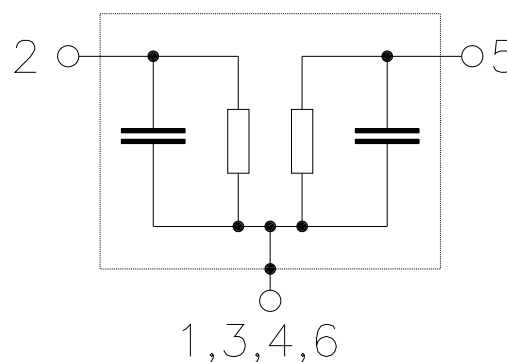
- Low-loss base-station LTE Band VII splitband Rx
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 30 MHz
- No matching required for operation at 50 Ω


**Features**

- Package size 3.0 x 3.0 x 1.1 mm<sup>3</sup>
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 1**
- Filter surface passivated


**Pin configuration**

- 2            Input
- 5            Output
- 1, 3, 4, 6    To be grounded



Data sheet


**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.<br>@ 25 °C | max.  |     |
|--------------------------------------|-----------------------|------|-----------------|-------|-----|
| <b>Center frequency</b>              | $f_C$                 | —    | 2560.0          | —     | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$       | —    | 2.4             | 3.0   | dB  |
| 2545.0 ... 2575.0 MHz                |                       |      |                 |       |     |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$        | —    | 0.5             | 0.8   | dB  |
| 2545.0 ... 2575.0 MHz                |                       |      |                 |       |     |
| <b>Input VSWR</b>                    |                       | —    | 1.5             | 2.0:1 |     |
| 2545.0 ... 2575.0 MHz                |                       |      |                 |       |     |
| <b>Output VSWR</b>                   |                       | —    | 1.4             | 2.0:1 |     |
| 2545.0 ... 2575.0 MHz                |                       |      |                 |       |     |
| <b>Group delay ripple (p-p)</b>      | $\Delta\tau$          | —    | 6               | 15    | ns  |
| 2545.0 ... 2575.0 MHz                |                       |      |                 |       |     |
| <b>Absolute attenuation</b>          | $\alpha_{\text{abs}}$ | 25   | 33              | —     | dB  |
| 10.0 ... 2400.0 MHz                  |                       |      |                 |       |     |
| 2845.0 ... 2890.0 MHz                |                       | 28   | 33              | —     | dB  |
| 2890.0 ... 6000.0 MHz                |                       | 20   | 23              | —     | dB  |

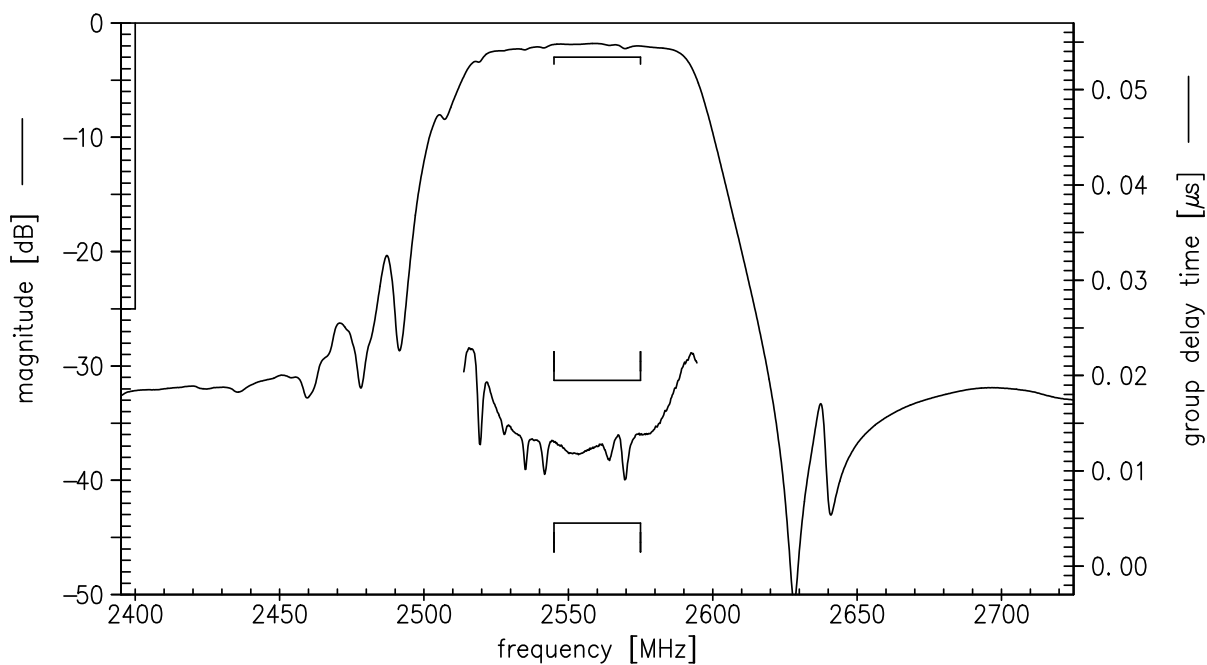
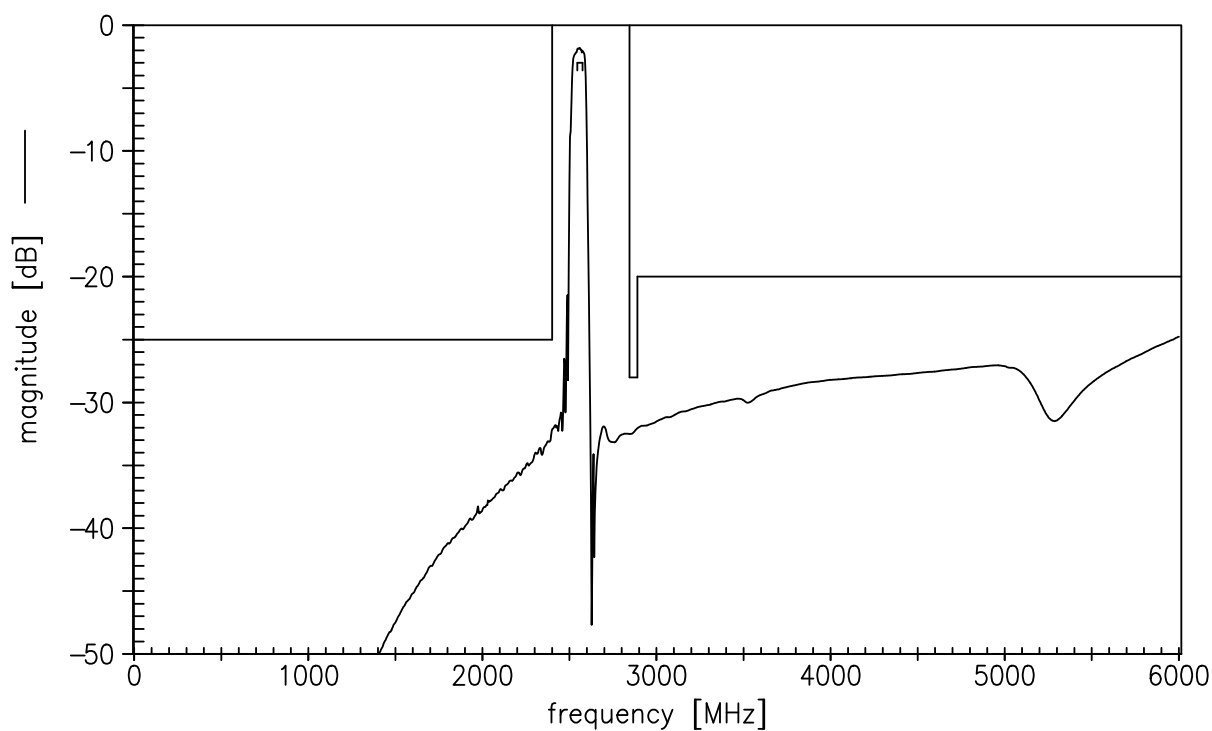
**Maximum ratings**

|                                      |                  |                   |     |                     |
|--------------------------------------|------------------|-------------------|-----|---------------------|
| Operable temperature range           | T                | -45/+125          | °C  |                     |
| Storage temperature range            | T <sub>stg</sub> | -45/+125          | °C  |                     |
| DC voltage                           | V <sub>DC</sub>  | 0                 | V   |                     |
| ESD voltage                          | V <sub>ESD</sub> | 50 <sup>1)</sup>  | V   | Machine Model       |
|                                      |                  | 150 <sup>2)</sup> | V   | Human Body Model    |
| Input power<br>2545.0 ... 2575.0 MHz | P <sub>IN</sub>  | 22                | dBm | cw, 1 minute, 85 °C |

1) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

2) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

Data sheet

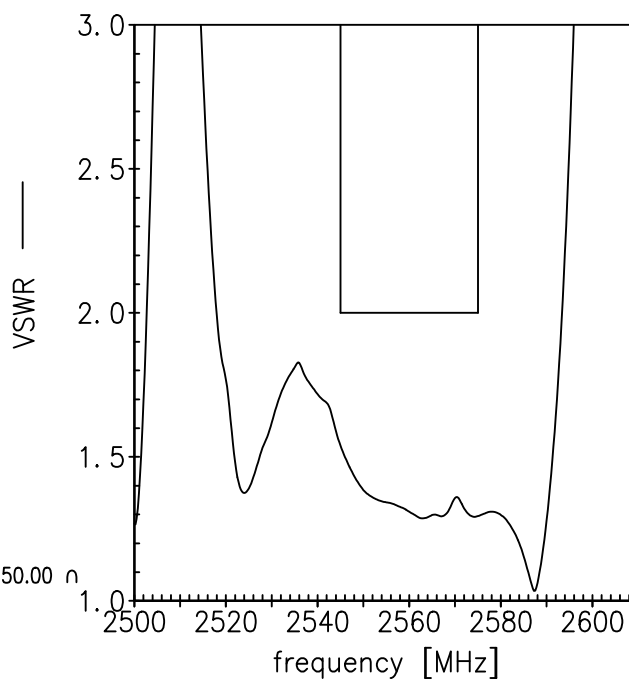
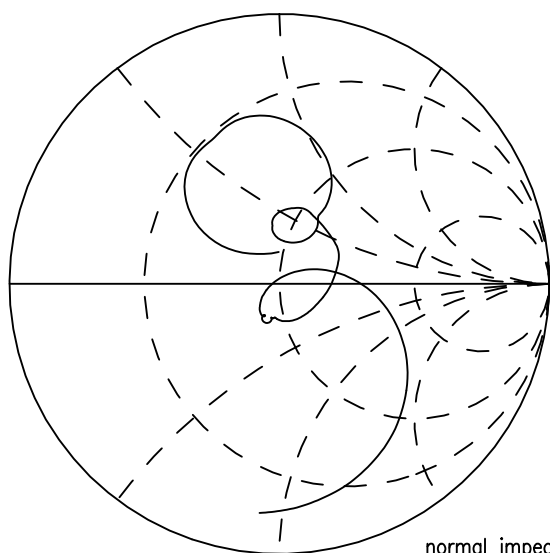
**Transfer function (S21, narrowband)**

**Transfer function (S21, wideband)**


Data sheet

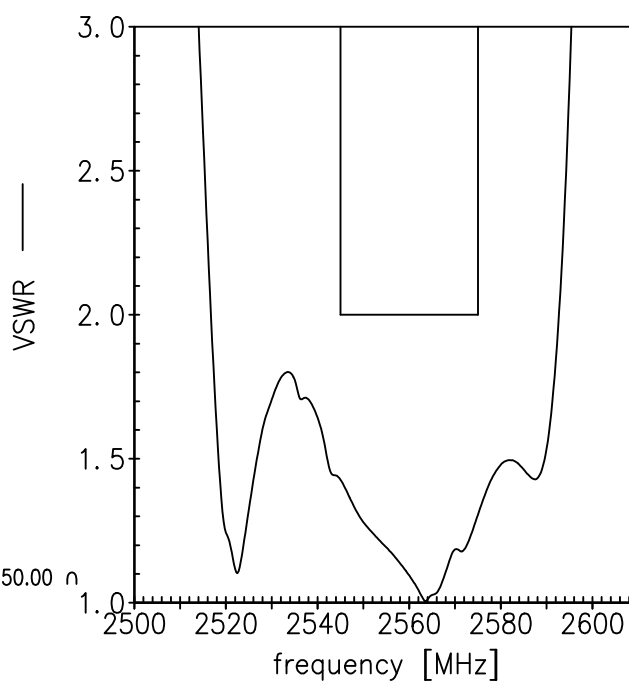
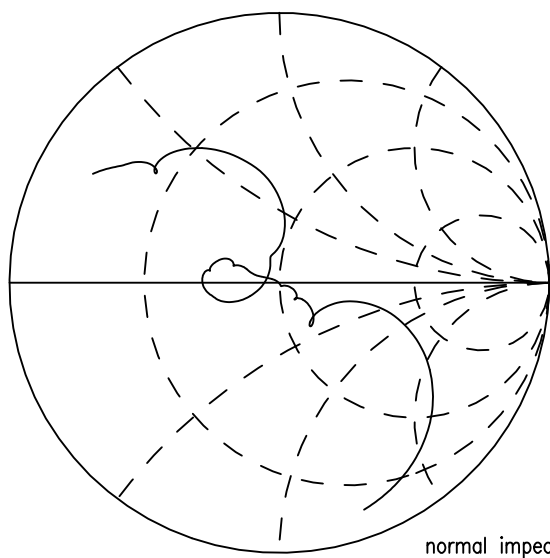
**SMD**

Smith charts

**S<sub>11</sub> function**



**S<sub>22</sub> function**



**References**

|                            |  |
|----------------------------|--|
| <b>Type</b>                | B5164  |
| <b>Ordering code</b>       | B39262B5164U410  |
| <b>Marking and package</b> | C61157-A7-A67  |
| <b>Packaging</b>           | F61074-V8228-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        | B5164_NB.s2p<br>B5164_WB.s2p<br>see file header for port/pin assignment table  |
| <b>Soldering profile</b>   | S_6001   |
| <b>RoHS compatible</b>     | RoHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases. |
| <b>Matching coils</b>      | See Inductor pdf-catalog<br><a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a><br>and Data Library for circuit simulation<br><a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a><br>for a large variety of matching coils.  |

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