



## **SAW Components**

### **SAW RF low loss filter**

Satellite CSS

|                       |                          |
|-----------------------|--------------------------|
| <b>Series/type:</b>   | <b>B1662</b>             |
| <b>Ordering code:</b> | <b>B39212-B1662-B510</b> |
| <b>Date:</b>          | <b>November 23, 2009</b> |
| <b>Version:</b>       | <b>2.0</b>               |



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B1662

### SAW RF low loss filter

2096.66 MHz

#### Data sheet



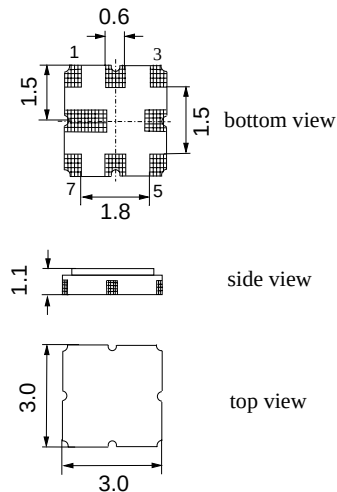
#### Application

- Low loss RF filter for satellite CSS
- Usable passband 40.0 MHz
- Balanced to balanced operation



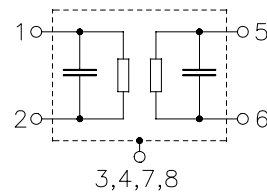
#### Features

- Package size 3.0 x 3.0 x 1.1 mm<sup>3</sup>
- Maximum height of 1.225 mm
- Package code QCC8F
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



#### Pin configuration

- 1 Input
- 2 Input
- 5 Output
- 6 Output
- 3,7 To be grounded
- 4,8 Case ground





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#### Characteristics

Temperature range for specification:

$T = -40\text{ °C to }+85\text{ °C}$

Terminating source impedance:

$Z_S = 150\ \Omega$  (balanced) and matching network

Terminating load impedance:

$Z_L = 150\ \Omega$  (balanced) and matching network

|                                                                       |                     | min. | typ.<br>@ 25 °C | max. |     |
|-----------------------------------------------------------------------|---------------------|------|-----------------|------|-----|
| <b>Nominal frequency</b>                                              | $f_N$               | —    | 2096.66         | —    | MHz |
| <b>Maximum insertion attenuation</b>                                  | $\alpha_{\max}$     |      |                 |      |     |
| 2076.66 ... 2116.66 MHz                                               |                     | —    | 4.0             | 5.0  | dB  |
| <b>Pass bandwidth</b>                                                 |                     |      |                 |      |     |
| $\alpha_{\text{rel}} \leq 1.5\text{ dB}$                              | $B_{1.5\text{ dB}}$ | —    | 63.0            | —    | MHz |
| <b>Amplitude ripple (p-p)</b>                                         | $\Delta\alpha$      |      |                 |      |     |
| 2076.66 ... 2116.66 MHz                                               |                     | —    | 1.3             | 2.0  | dB  |
| <b>Input return loss</b>                                              |                     | 8.0  | 13.0            | —    | dB  |
| <b>Output return loss</b>                                             |                     | 8.0  | 13.0            | —    | dB  |
| <b>Group delay ripple (p-p)</b>                                       | $\Delta\tau$        |      |                 |      |     |
| 2076.66 ... 2116.66 MHz                                               |                     | —    | 10.0            | 40.0 | ns  |
| <b>Differential to common mode ratio</b><br>( $ S_{dd21}/S_{cd21} $ ) |                     |      |                 |      |     |
| 2076.66 ... 2116.66 MHz                                               |                     | 22.0 | 28.0            | —    | dB  |
| <b>Deviation from linear phase (rms)</b><br>in any 30 MHz band        |                     |      |                 |      |     |
| 2076.66 ... 2116.66 MHz                                               |                     | —    | 5.0             | 8.0  | °   |
| <b>Relative attenuation</b>                                           | $\alpha$            |      |                 |      |     |
| 50.0 ... 2016.62 MHz                                                  |                     | 38.0 | 42.0            | —    | dB  |
| 2176.70 ... 2200.00 MHz                                               |                     | 31.0 | 34.0            | —    | dB  |
| 2200.00 ... 2500.00 MHz                                               |                     | 34.0 | 40.0            | —    | dB  |
| 2500.00 ... 6000.00 MHz                                               |                     | 18.0 | —               | —    | dB  |

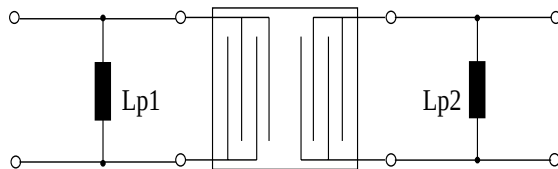


|                        |             |
|------------------------|-------------|
| SAW Components         | B1662       |
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Data sheet



Matching network (element values depend on PCB layout)



$$L_{p1} = 27\text{nH}$$

$$L_{p2} = 27\text{nH}$$

### Maximum ratings

|                                        |                  |                  |     |                        |
|----------------------------------------|------------------|------------------|-----|------------------------|
| Operable temperature range             | T                | -40/+85          | °C  |                        |
| 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   | machine model, 1 pulse |
| Input power at<br>2096.66...2116.66MHz | P <sub>IN</sub>  | 0                | dBm | source impedance 150 Ω |

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



SAW Components

B1662

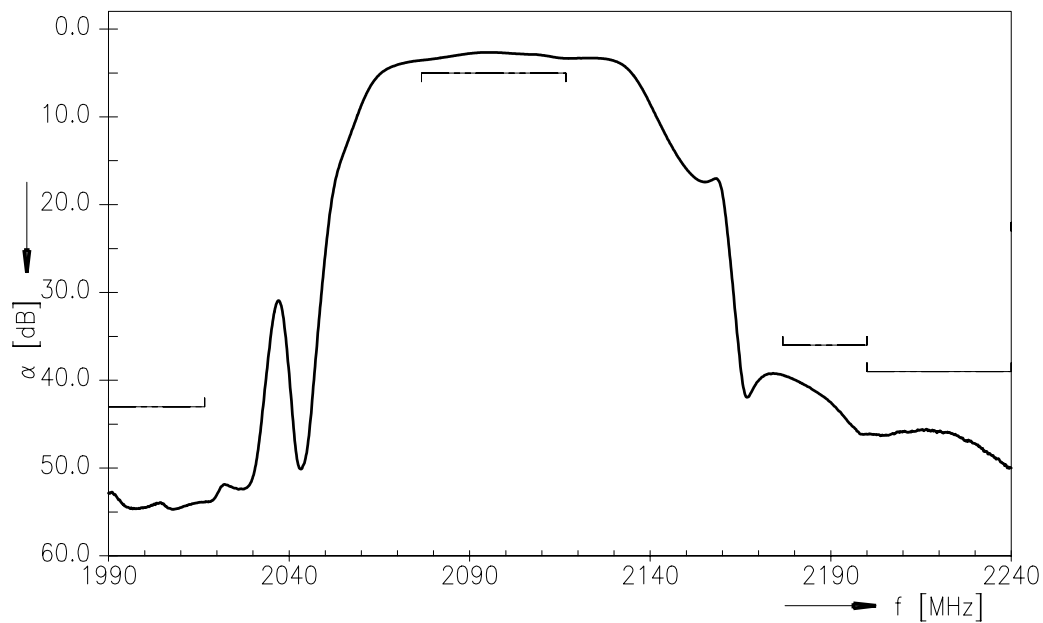
SAW RF low loss filter

2096.66 MHz

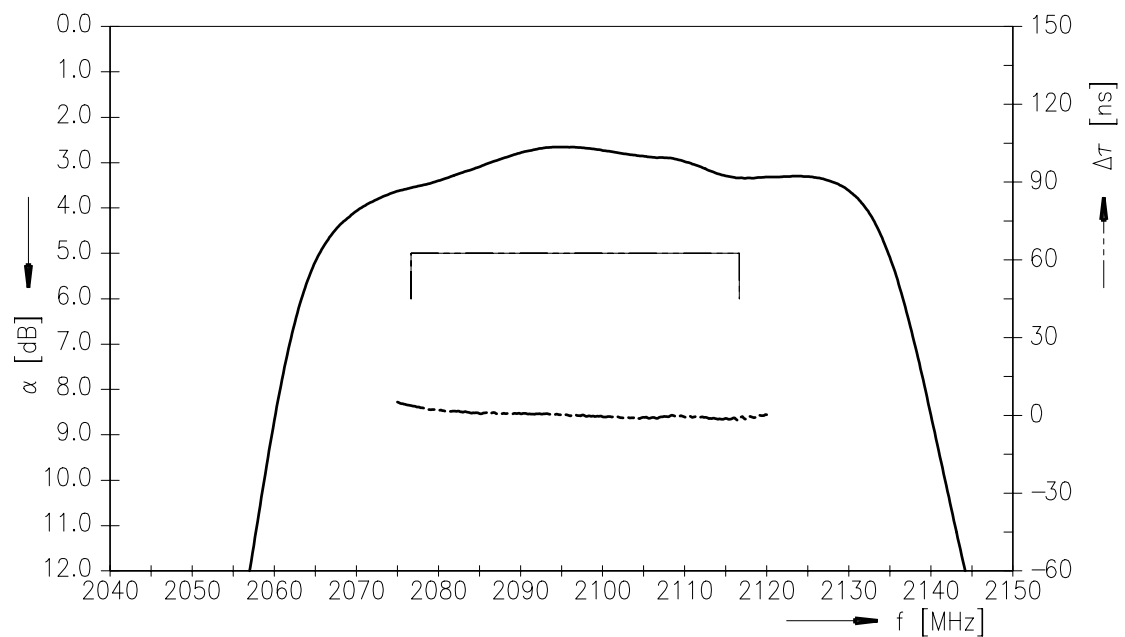
Data sheet



### Transfer function



### Transfer function (passband)



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

**SAW Components****B1662****SAW RF low loss filter****2096.66 MHz**

Data sheet

**References**

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                | B1662                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Ordering code</b>       | B39212-B1662-B510                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Marking and package</b> | C61157-A7-A72                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Packaging</b>           | F61074-V8168-Z000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Date codes</b>          | L_1126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>S-parameters</b>        | B1662_NB.s4p<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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