



## **SAW Components**

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

Satellite CSS

|                       |                          |
|-----------------------|--------------------------|
| <b>Series/type:</b>   | <b>B1665</b>             |
| <b>Ordering code:</b> | <b>B39122-B1665-U510</b> |
| <b>Date:</b>          | <b>October 01, 2010</b>  |
| <b>Version:</b>       | <b>2.0</b>               |



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B1665

SAW RF low loss filter

1210.00 MHz

Data sheet



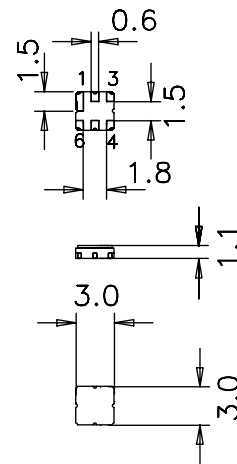
### Application

- Low-loss RF filter for digital video
- Impedance transformation from 200  $\Omega$  to 50  $\Omega$
- Balanced to unbalanced operation
- Usable passband 60.0 MHz



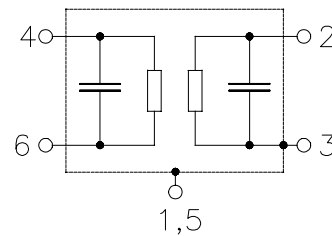
### Features

- Package size 3.0 x3.0 x 1.1 mm<sup>3</sup>
- Maximum height of 1.225 mm
- Package code DCC6D
- RoHS compatible
- Approximate weight 0.037 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- AEC-Q200 qualified component family



### Pin configuration

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





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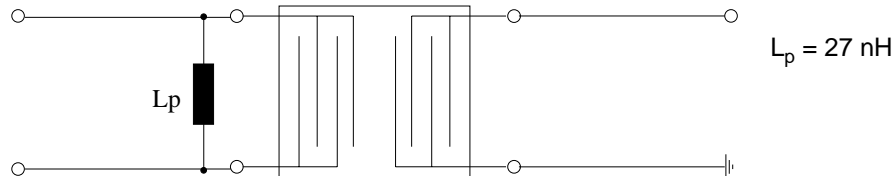
Data sheet



**Characteristics**

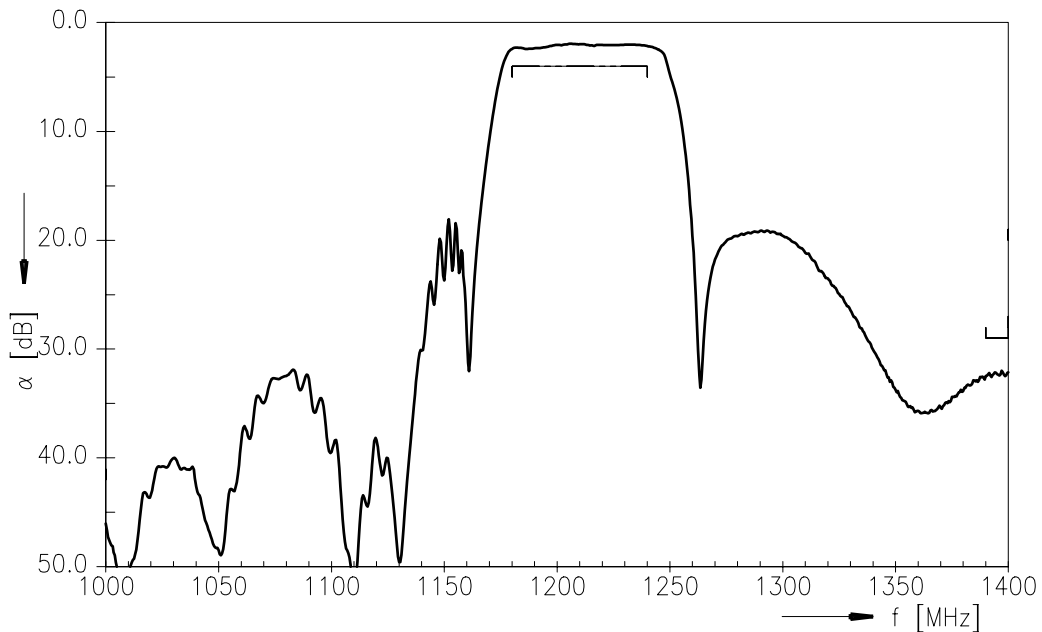
Temperature range for specification: T = -40 °C to +85 °C  
 Terminating source impedance: Z<sub>S</sub> = 200Ω (balanced) and matching network  
 Terminating load impedance: Z<sub>L</sub> = 50Ω

|   |                  | min. | typ.<br>@ 25 °C | max. |     |
|---|------------------|------|-----------------|------|-----|
| <b>Nominal frequency</b>  | f <sub>N</sub>   | —    | 1210.00         | —    | MHz |
| <b>Maximum insertion attenuation</b><br>1180.0 ... 1240.0 MHz                         | α <sub>max</sub> | —    | 3.0             | 4.0  | dB  |
| <b>Amplitude ripple in any 30MHz band (p-p)</b><br>1180.0 ... 1240.0 MHz              | Δα               | —    | 1.0             | 2.2  | dB  |
| <b>Amplitude ripple (p-p)</b><br>1180.0 ... 1240.0 MHz                                | Δα               | —    | 1.0             | 2.2  | dB  |
| <b>Differential to common mode ratio</b><br>( S <sub>dd21</sub> /S <sub>cd21</sub>  ) |                  | 17.0 | 20.0            | —    | dB  |
| <b>Input return loss</b>  |                  | 6.0  | 8.5             | —    | dB  |
| <b>Output return loss</b>   |                  | 6.0  | 8.5             | —    | dB  |
| <b>Attenuation</b>  | α                |      |                 |      |     |
| 50.0 ... 900.0 MHz  |                  | 42   | 45              | —    | dB  |
| 1390.0 ... 1450.0 MHz   |                  | 29   | 32              | —    | dB  |
| 1450.0 ... 2070.0 MHz   |                  | 28   | 31              | —    | dB  |
| 2070.0 ... 5000.0 MHz   |                  | 20   | 25              | —    | dB  |
| <b>Group delay ripple (p-p)</b><br>1180.0 ... 1240.0 MHz                              |                  | —    | 18              | 30   | ns  |

**Matching Network (element values depend on PCB layout)**

**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>1180.0 MHz...1240.0 MHz | P <sub>IN</sub>  | 0                | dBm | source impedance 200 Ω |

1) according to JESD22-A115A (machine model), 1 negative &amp; 1 positive pulse.

**Transfer function**




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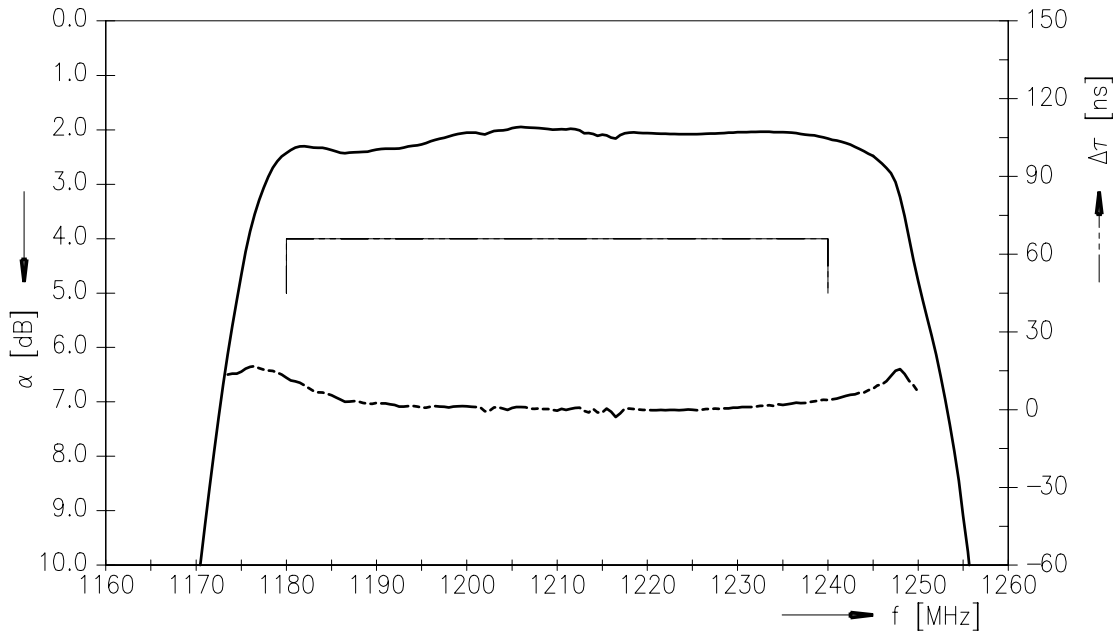
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1210.00 MHz

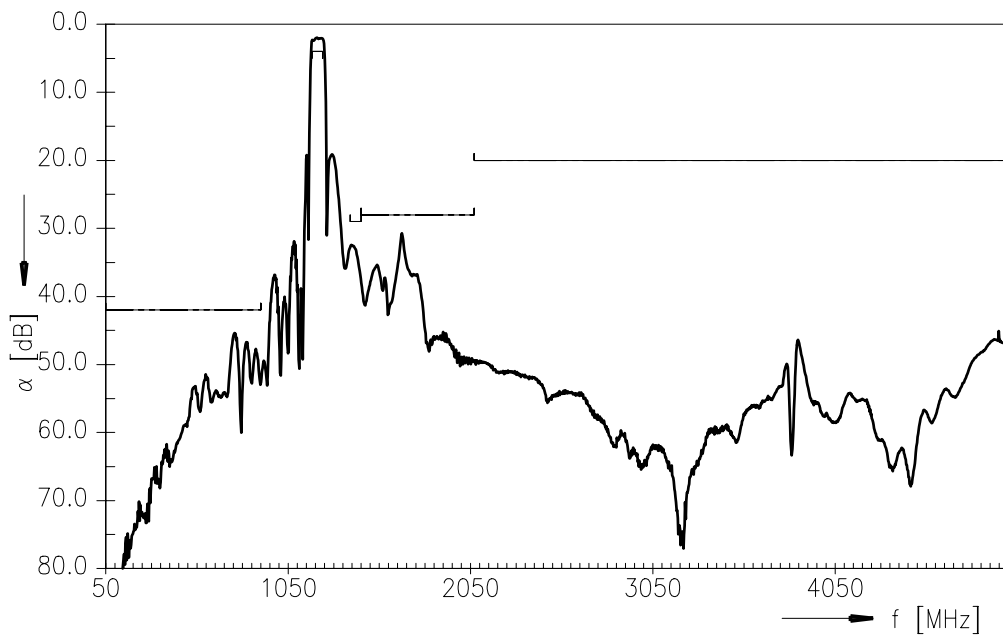
Data sheet



Transfer function (passband)



Transfer function (wideband)



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



|                               |                    |
|-------------------------------|--------------------|
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| <b>SAW RF low loss filter</b> | <b>1210.00 MHz</b> |

Data sheet



## References

|                            |  |
|----------------------------|--|
| <b>Type</b>                | B1665  |
| <b>Ordering code</b>       | B39122-B1665-U510  |
| <b>Marking and package</b> | C61157-A7-A68  |
| <b>Packaging</b>           | F61074-V8168-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        | B1665_NB.s3p<br>B1665_WB.s3p<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>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>  |

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