



# **SAW Components**

## **SAW filter**

UMTS RF Filter

**Series/type:** B3668

**Ordering code:** B39202B3668U410

**Date:** June 06, 2012

**Version:** 2.0

## SAW Components

B3668

### SAW filter

1950.0 MHz

#### Data Sheet



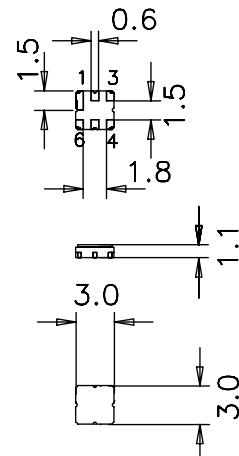
#### Application

- Low-loss RF filter for UMTS system
- Unbalanced to Unbalanced operation
- Usable passband 60MHz
- No matching network required for operation at 50  $\Omega$



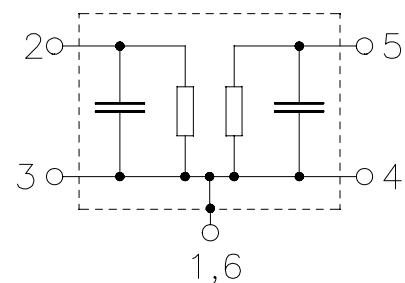
#### Features

- Package size 3.0 x3.0 x 1.1 mm<sup>3</sup>
- RoHS compatible
- Approximate weight 0.037 g
- Ceramic Package for Surface Mounted Technology (SMT)
- Ni, gold-plated terminals
- Electrostatic Sensitive Device (ESD)
- Moisture Sensitive Level 1
- Filter surface passivated



#### Pin configuration

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



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### Characteristics

Temperature range for specification:  $T = -30^{\circ}\text{C}$  to  $+95^{\circ}\text{C}$

Terminating source impedance:  $Z_S = 50 \Omega$

Terminating load impedance:  $Z_L = 50 \Omega$

			min.	typ. @ 25 °C	max.	
<b>Center frequency</b>		$f_C$	—	1950.0	—	MHz
<b>Maximum insertion attenuation</b>		$\alpha_{\text{max}}$				
1920.0 ... 1980.0	MHz		—	3.0	3.5	dB
<b>Amplitude ripple (p-p)</b>		$\Delta\alpha$				
1920.0 ... 1980.0	MHz		—	1.5	2.1	dB
<b>Return loss</b>						
1805.0 ... 1880.0	MHz		8.0	10.0	—	dB
<b>Attenuation</b>		$\alpha$				
0.0 ... 1400.0	MHz		22.0	25.0	—	dB
1400.0 ... 1495.0	MHz		25.0	28.0	—	dB
1495.0 ... 1700.0	MHz		28.0	31.0	—	dB
1700.0 ... 1870.0	MHz		30.0	34.0	—	dB
1870.0 ... 1880.0	MHz	20.0 <sup>1)</sup>	30.0	—	—	dB
2000.0 ... 2015.0	MHz		3.5	6.0	—	dB
2015.0 ... 2030.0	MHz		8.0	20.0	—	dB
2030.0 ... 2050.0	MHz		35.0	45.0	—	dB
2050.0 ... 2080.0	MHz		33.0	37.0	—	dB
2080.0 ... 2170.0	MHz		30.0	34.0	—	dB
2170.0 ... 5000.0	MHz		25.0	30.0	—	dB
5000.0 ... 5800.0	MHz		10.0	12.0	—	dB
5800.0 ... 6000.0	MHz		8.0	10.0	—	dB

<sup>1)</sup> min. 15dB ( $T>45^{\circ}\text{C}$ )

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### Maximum ratings

Operable temperature range	T	-30/+95	°C	
Storage temperature range	T <sub>stg</sub>	-30/+95	°C	
DC voltage	V <sub>DC</sub>	0	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	machine model, 10 pulses
Input power at				
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	25.0	dBm	continuous wave, 2hrs, 85°C
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	19.5	dBm	continuous wave, 1000hrs, 85°C
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	14.0	dBm	continuous wave, 100000hrs, 85°C
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	24.0	dBm	continuous wave, 2hrs, 95°C
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	18.5	dBm	continuous wave, 1000hrs, 95°C
1920.0 ... 1980.0 MHz	P <sub>IN</sub>	13.0	dBm	continuous wave, 100000hrs, 95°C

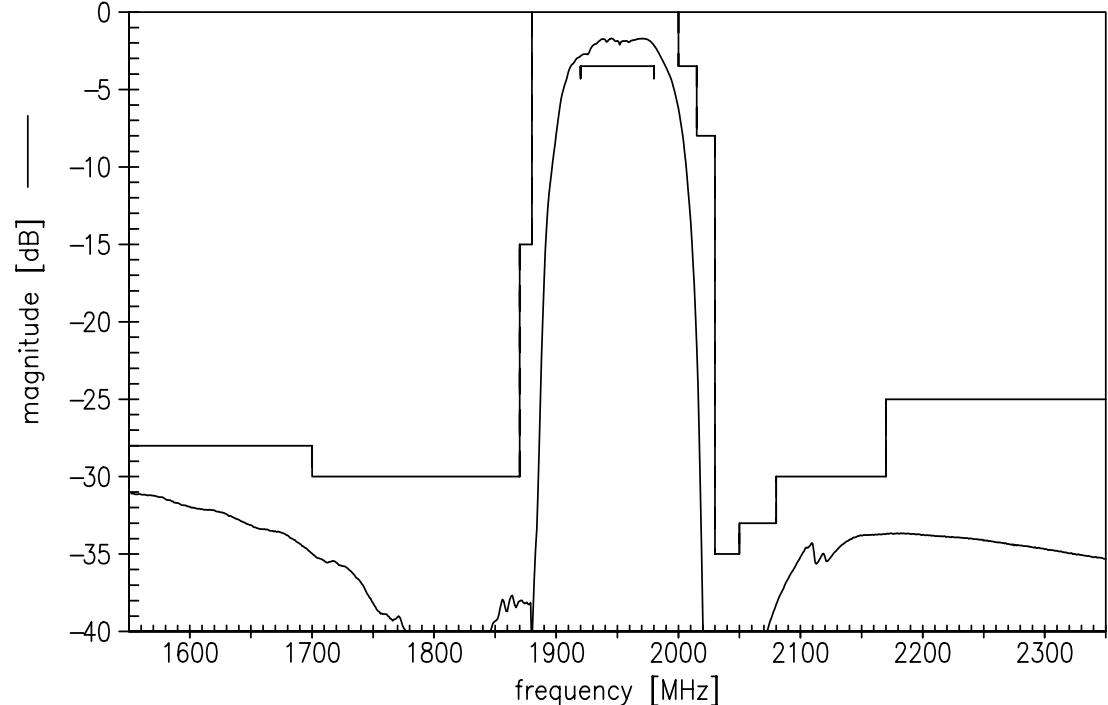
<sup>1)</sup> acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

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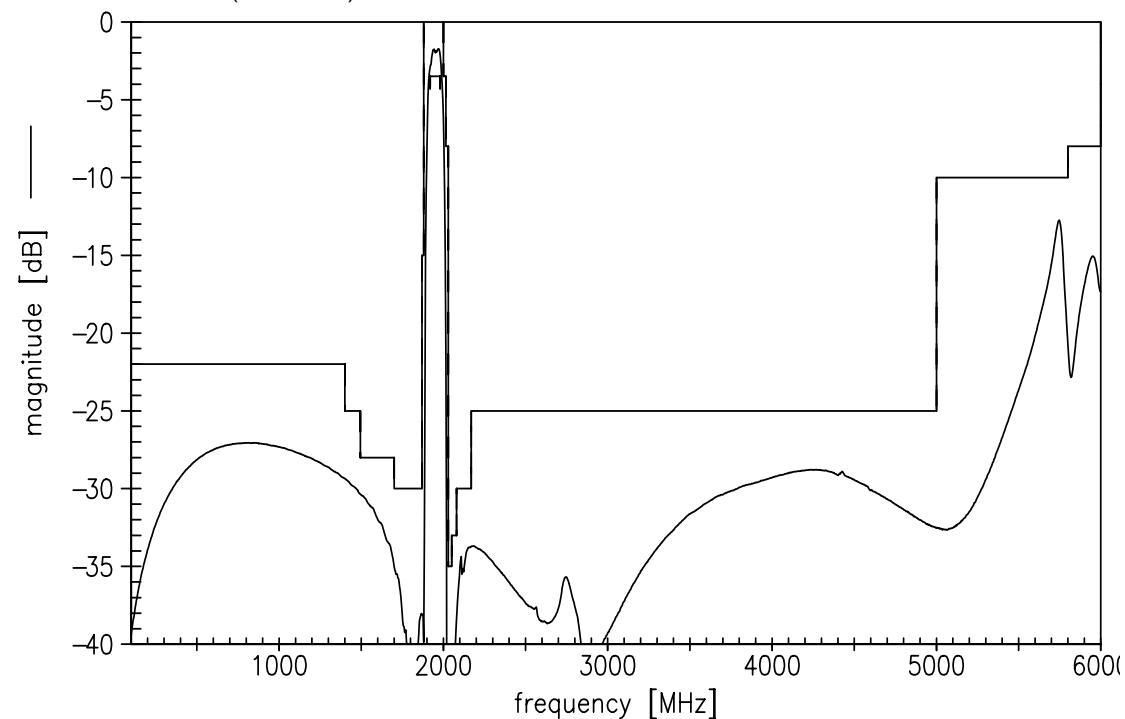
Data Sheet



**Transfer function**

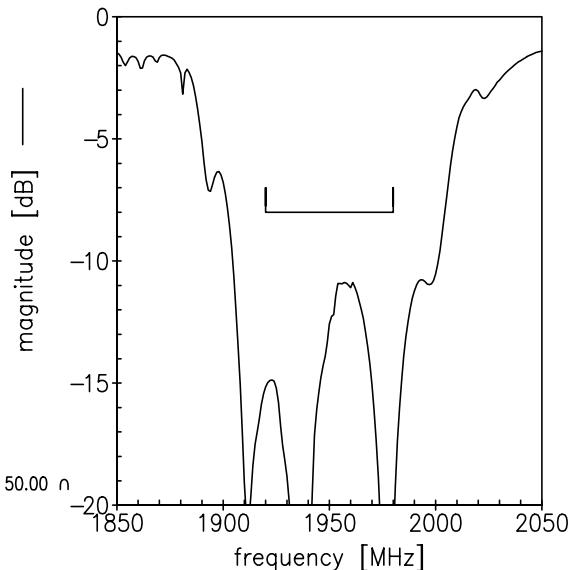
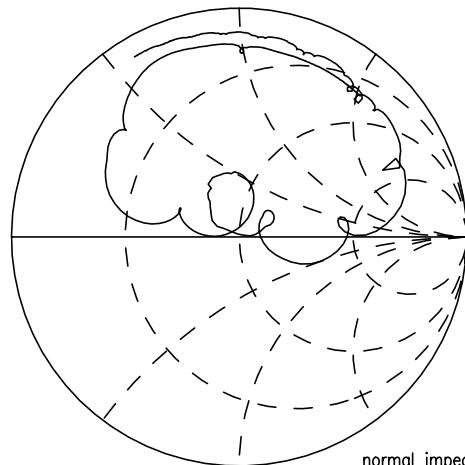
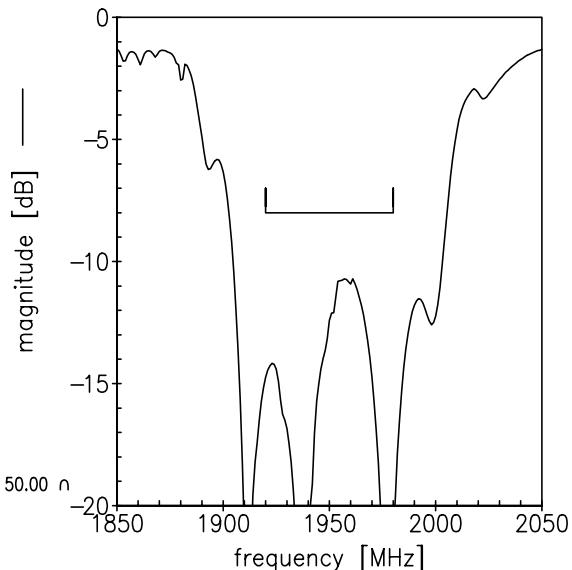
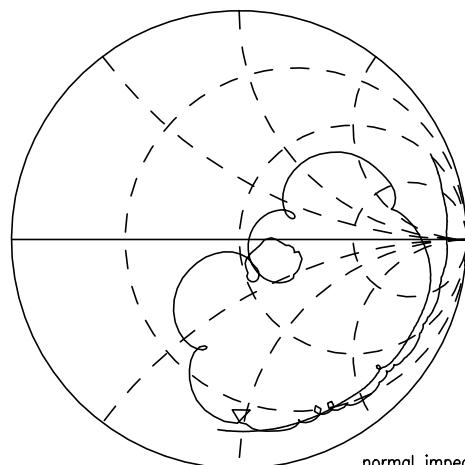


**Transfer function (wideband)**



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

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**Smith charts**
 **$S_{11}$  function**

 **$S_{22}$  function**


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### References

<b>Type</b>	B3668
<b>Ordering code</b>	B39202B3668U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B3668_NB.s2p; B3668_WB.s2p 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: "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.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a> for a large variety of matching coils.

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