



# SAW Components

## SAW RF filter for base stations

GSM RF Filter

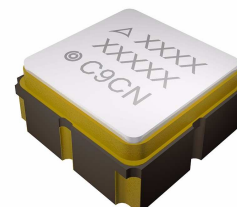
<b>Series/type:</b>	<b>B4125</b>
<b>Ordering code:</b>	<b>B39881B4125U410</b>
<b>Date:</b>	<b>Mar 05, 2015</b>
<b>Version:</b>	<b>2.3</b>

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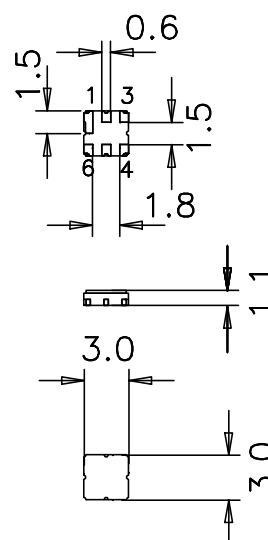
### Application

- RF filter for band 5 downlink
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 25 MHz
- No matching required for operation at 50  $\Omega$



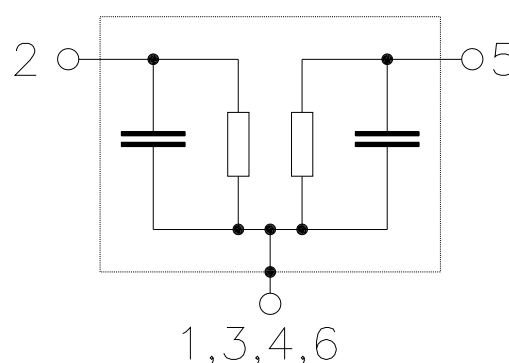
### Features

- 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



**SAW Components**
**B4125**
**SAW RF filter**
**881.5 MHz**
**Data sheet**

**Characteristics**

Temperature range for specification:	T	=	−40 °C to +85 °C
Terminating source impedance:	Z <sub>S</sub>	=	50 Ω
Terminating load impedance:	Z <sub>L</sub>	=	50 Ω

		min.	typ. @ 25 °C	max.	
<b>Centre frequency</b>	f <sub>C</sub>	—	881.5	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>				
869.0 ... 894.0 MHz		—	2.6	3.0	dB
<b>Amplitude ripple (p-p)</b>	Δα				
869.0 ... 894.0 MHz		—	1.1	1.5	dB
<b>Input VSWR</b>					
869.0 ... 894.0 MHz		—	1.4:1	1.6:1	
<b>Output VSWR</b>					
869.0 ... 894.0 MHz		—	1.4:1	1.6:1	
<b>Attenuation</b>	α				
00.0 ... 824.0 MHz		35.0	50.0	—	dB
824.0 ... 849.0 MHz		35.0	45.0	—	dB
970.0 ... 997.0 MHz		35.0	60.0	—	dB
997.0 ... 1150.0 MHz		40.0	60.0	—	dB
1150.0 ... 1500.0 MHz		30.0	50.0	—	dB
1500.0 ... 2000.0 MHz		25.0	38.0	—	dB
2000.0 ... 6000.0 MHz		20.0	25.0	—	dB

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**Characteristics**

Temperature range for specification:	T	=	−40 °C to +105 °C
Terminating source impedance:	Z <sub>S</sub>	=	50 Ω
Terminating load impedance:	Z <sub>L</sub>	=	50 Ω

		min.	typ. @ 25 °C	max.	
<b>Centre frequency</b>	f <sub>C</sub>	—	881.5	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>				
869.0 ... 894.0 MHz		—	2.6	3.7	dB
<b>Amplitude ripple (p-p)</b>	Δα				
869.0 ... 894.0 MHz		—	1.1	2.1	dB
<b>Input VSWR</b>					
869.0 ... 894.0 MHz		—	1.4:1	2.1:1	
<b>Output VSWR</b>					
869.0 ... 894.0 MHz		—	1.4:1	2.1:1	
<b>Attenuation</b>	α				
00.0 ... 824.0 MHz		35.0	50.0	—	dB
824.0 ... 849.0 MHz		30.0	45.0	—	dB
970.0 ... 997.0 MHz		35.0	60.0	—	dB
997.0 ... 1150.0 MHz		40.0	60.0	—	dB
1150.0 ... 1500.0 MHz		30.0	50.0	—	dB
1500.0 ... 2000.0 MHz		25.0	38.0	—	dB

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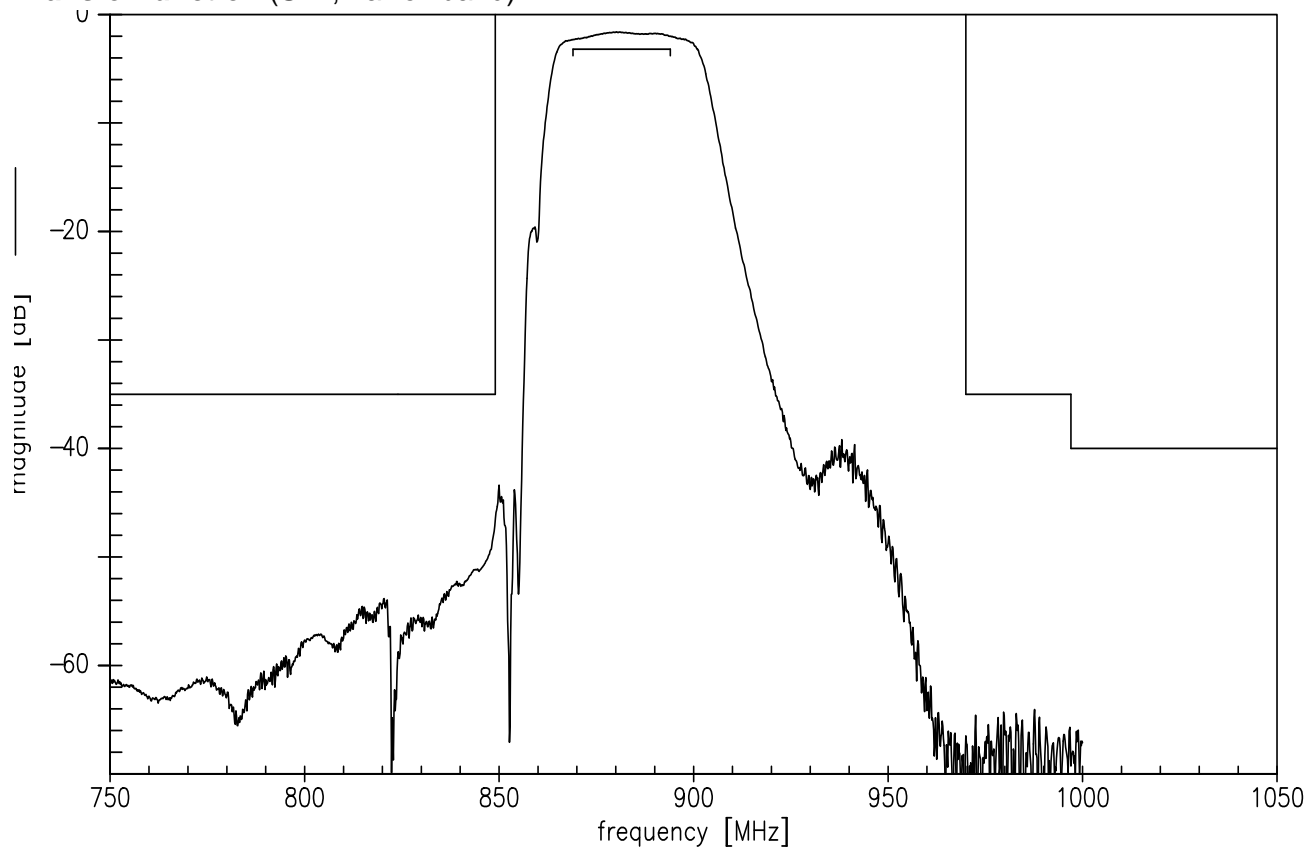
Data sheet


**Maximum ratings**

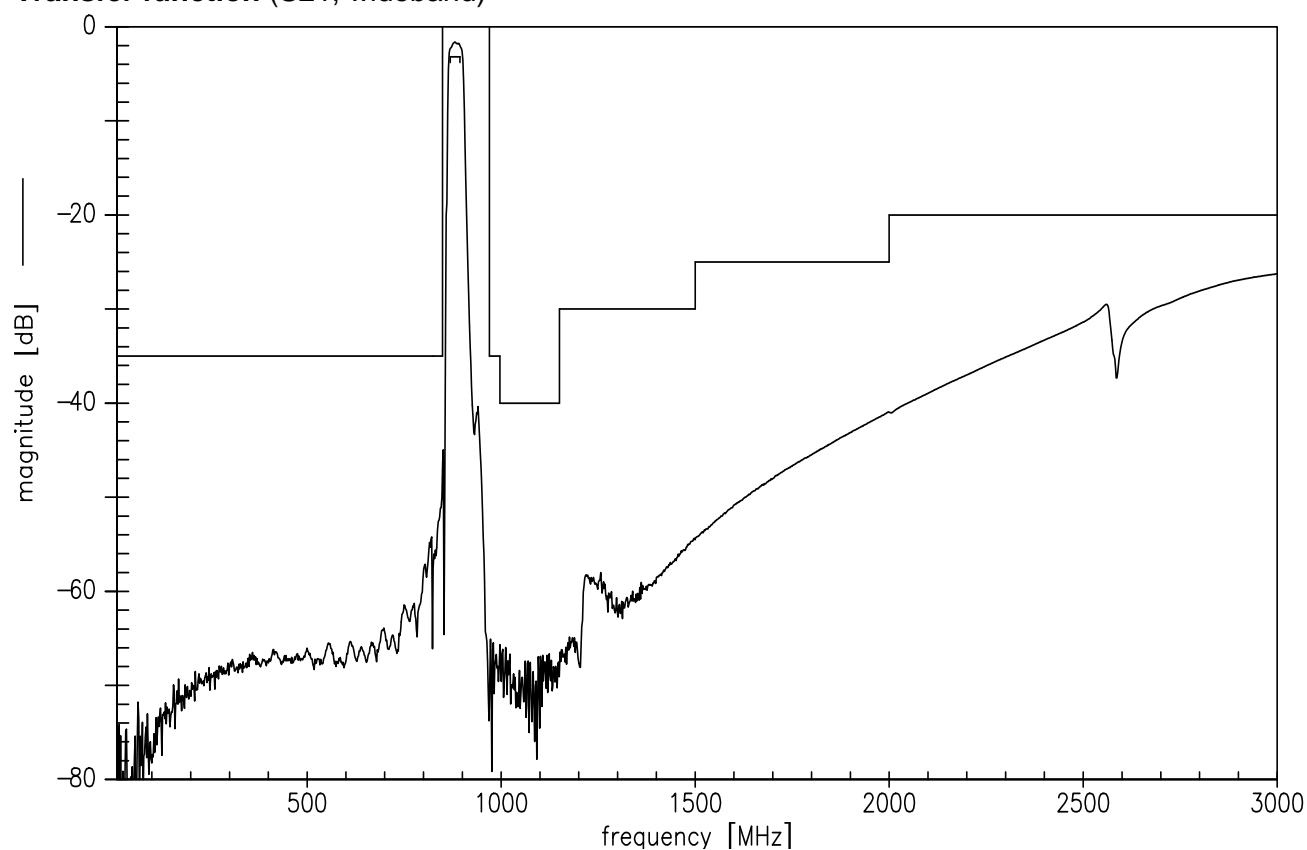
Operable temperature range	T	−45/+125	°C	
Storage temperature range	T <sub>stg</sub>	−45/+125	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	50 <sup>1)</sup>	V	Machine Model
Input power	P <sub>IN</sub>			
869.0 ... 894.0 MHz		13	dBm	cw, 100000 h, 100 °C

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

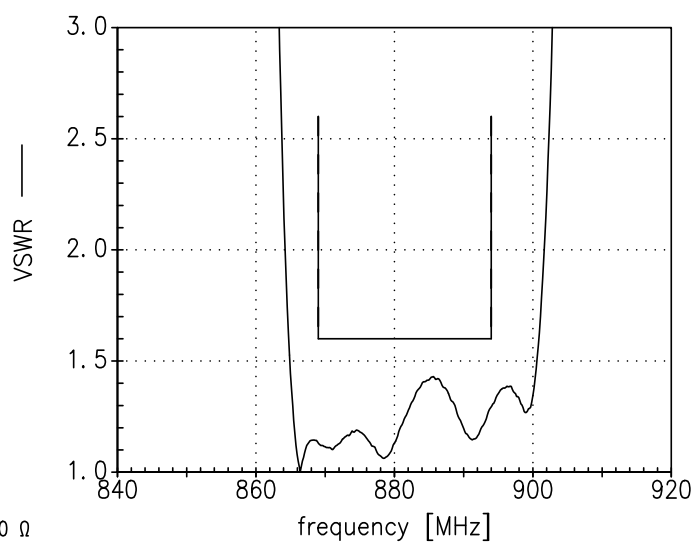
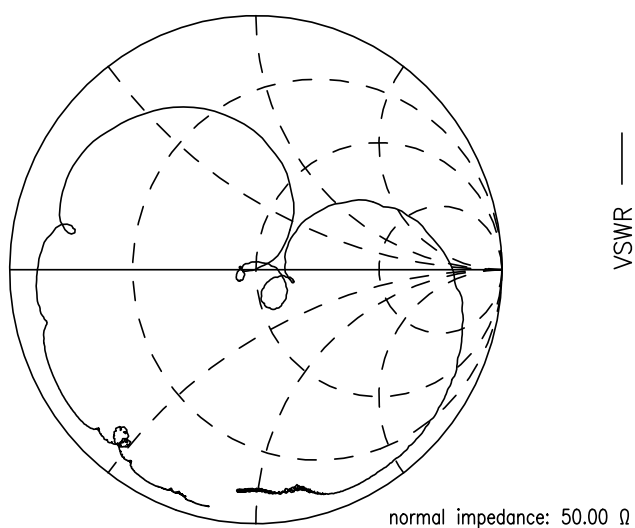
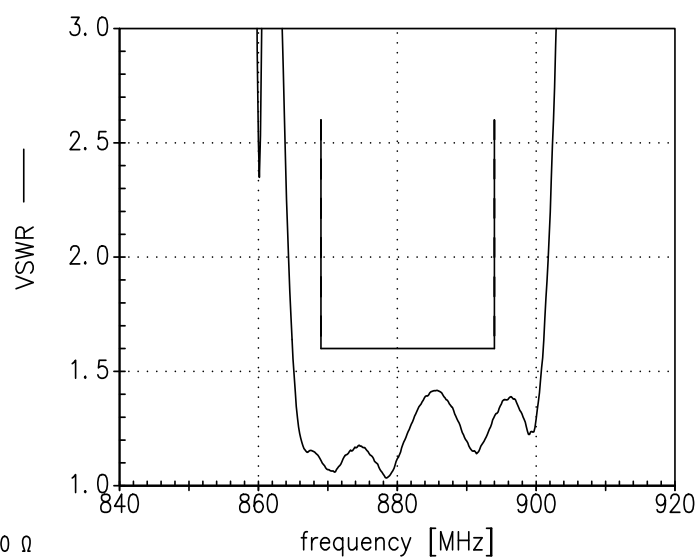
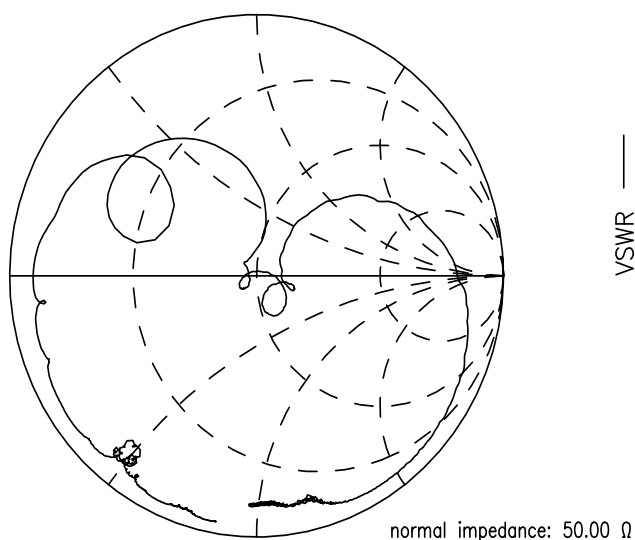
**Transfer function (S21, narrowband)**



**Transfer function (S21, wideband)**



Data sheet

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

 **$S_{22}$  function**


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Data sheet


**References**

<b>Type</b>	B4125
<b>Ordering code</b>	B39881B4125U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B4125_NB.s2p B4125_WB.s2p 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 <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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