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# SAW Components

## SAW RF filter for base stations

Band 3 downlink

<b>Series/type:</b>	<b>B4166</b>
<b>Ordering code:</b>	<b>B39182B4166U410</b>

Date:	Aug 20, 2015
Version:	2.1

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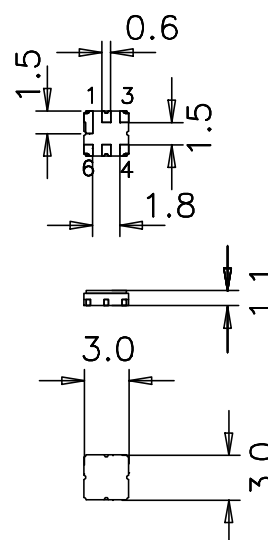
### Application

- RF filter for band 3 downlink
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 75 MHz
- No matching required for operation at 50  $\Omega$



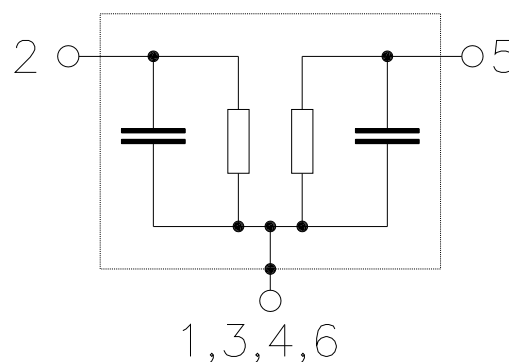
### Features

- 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**
**B4166**
**SAW RF filter**
**1842.5 MHz**
**Data sheet**

**Characteristics**

Temperature range for specification:	T	=	25 +/- 2 °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>Center frequency</b>	f <sub>C</sub>	—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>	—	2.9	3.3	dB
1805.0 ... 1880.0 MHz		—	2.9	3.3	dB
<b>Amplitude ripple (p-p)</b>	Δα	—	0.9	1.3	dB
1805.0 ... 1880.0 MHz		—	0.9	1.3	dB
<b>Input VSWR</b>		—	2.0:1	2.2:1	
1805.0 ... 1880.0 MHz		—	2.0:1	2.2:1	
<b>Output VSWR</b>		—	2.2:1	2.4:1	
1805.0 ... 1880.0 MHz		—	2.2:1	2.4:1	
<b>Absolute attenuation</b>	α <sub>abs</sub>				
10.0 ... 370.0 MHz		40	43.5	—	dB
370.0 ... 1300.0 MHz		37	38.5	—	dB
1300.0 ... 1705.0 MHz		30	36	—	dB
1705.0 ... 1785.0 MHz		12	14	—	dB
1920.0 ... 1980.0 MHz		12	25	—	dB
1980.0 ... 2530.0 MHz		23	28	—	dB
2110.0 ... 2170.0 MHz		33	38	—	dB
2530.0 ... 2680.0 MHz		31	35	—	dB
2680.0 ... 3400.0 MHz		28	34	—	dB
3400.0 ... 3975.0 MHz		24	30	—	dB
3975.0 ... 4200.0 MHz		23	27	—	dB
4200.0 ... 4920.0 MHz		15	19	—	dB
4920.0 ... 5200.0 MHz		10	17	—	dB
5200.0 ... 6000.0 MHz		5	11	—	dB

**SAW Components**
**B4166**
**SAW RF filter**
**1842.5 MHz**
**Data sheet**

**Characteristics**

Temperature range for specification:  $T = -40\text{ }^{\circ}\text{C to } +85\text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3.2	4.5	dB
1805.0 ... 1880.0 MHz		—	3.2	4.5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.2	2.5	dB
1805.0 ... 1880.0 MHz		—	1.2	2.5	dB
<b>Input VSWR</b>		—	2.1:1	2.5:1	
1805.0 ... 1880.0 MHz		—	2.1:1	2.5:1	
<b>Output VSWR</b>		—	2.3:1	2.7:1	
1805.0 ... 1880.0 MHz		—	2.3:1	2.7:1	
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$				
10.0 ... 370.0 MHz		40	43.5	—	dB
370.0 ... 1300.0 MHz		37	38.5	—	dB
1300.0 ... 1705.0 MHz		30	36	—	dB
1705.0 ... 1785.0 MHz		9	13	—	dB
1920.0 ... 1980.0 MHz		10	25	—	dB
1980.0 ... 2530.0 MHz		23	28	—	dB
2110.0 ... 2170.0 MHz		33	38	—	dB
2530.0 ... 2680.0 MHz		31	35	—	dB
2680.0 ... 3400.0 MHz		28	34	—	dB
3400.0 ... 3975.0 MHz		24	30	—	dB
3975.0 ... 4200.0 MHz		23	27	—	dB
4200.0 ... 4920.0 MHz		15	19	—	dB
4920.0 ... 5200.0 MHz		10	17	—	dB
5200.0 ... 6000.0 MHz		5	11	—	dB

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**B4166**
**SAW RF filter**
**1842.5 MHz**
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**Characteristics**

Temperature range for specification:  $T = -40\text{ }^{\circ}\text{C to } +95\text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\text{ }\Omega$   
 Terminating load impedance:  $Z_L = 50\text{ }\Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3.2	5.5	dB
1805.0 ... 1880.0 MHz		—	3.2	5.5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.2	3.5	dB
1805.0 ... 1880.0 MHz		—	1.2	3.5	dB
<b>Input VSWR</b>		—	2.1:1	2.7:1	
1805.0 ... 1880.0 MHz		—	2.1:1	2.7:1	
<b>Output VSWR</b>		—	2.3:1	2.9:1	
1805.0 ... 1880.0 MHz		—	2.3:1	2.9:1	
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$				
10.0 ... 370.0 MHz		40	43.5	—	dB
370.0 ... 1300.0 MHz		37	38.5	—	dB
1300.0 ... 1705.0 MHz		30	36	—	dB
1705.0 ... 1785.0 MHz		7	13	—	dB
1920.0 ... 1980.0 MHz		10	25	—	dB
1980.0 ... 2530.0 MHz		23	28	—	dB
2110.0 ... 2170.0 MHz		33	38	—	dB
2530.0 ... 2680.0 MHz		31	35	—	dB
2680.0 ... 3400.0 MHz		28	34	—	dB
3400.0 ... 3975.0 MHz		24	30	—	dB
3975.0 ... 4200.0 MHz		23	27	—	dB
4200.0 ... 4920.0 MHz		15	19	—	dB
4920.0 ... 5200.0 MHz		10	17	—	dB
5200.0 ... 6000.0 MHz		5	11	—	dB

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**Characteristics**

Temperature range for specification:  $T = -40\text{ }^{\circ}\text{C to }+110\text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\text{ }\Omega$   
 Terminating load impedance:  $Z_L = 50\text{ }\Omega$

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	1842.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3.2	5.5	dB
1805.0 ... 1880.0 MHz		—	3.2	5.5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.2	3.5	dB
1805.0 ... 1880.0 MHz		—	1.2	3.5	dB
<b>Input VSWR</b>		—	2.1:1	2.9:1	
1805.0 ... 1880.0 MHz		—	2.1:1	2.9:1	
<b>Output VSWR</b>		—	2.3:1	3.1:1	
1805.0 ... 1880.0 MHz		—	2.3:1	3.1:1	
<b>Absolute attenuation</b>	$\alpha_{\text{abs}}$				
10.0 ... 370.0 MHz		40	43.5	—	dB
370.0 ... 1300.0 MHz		37	38.5	—	dB
1300.0 ... 1705.0 MHz		30	36	—	dB
1705.0 ... 1785.0 MHz		6	13	—	dB
1920.0 ... 1980.0 MHz		10	25	—	dB
1980.0 ... 2530.0 MHz		23	28	—	dB
2110.0 ... 2170.0 MHz		33	38	—	dB
2530.0 ... 2680.0 MHz		31	35	—	dB
2680.0 ... 3400.0 MHz		28	34	—	dB
3400.0 ... 3975.0 MHz		24	30	—	dB
3975.0 ... 4200.0 MHz		23	27	—	dB
4200.0 ... 4920.0 MHz		15	19	—	dB
4920.0 ... 5200.0 MHz		10	17	—	dB
5200.0 ... 6000.0 MHz		5	11	—	dB

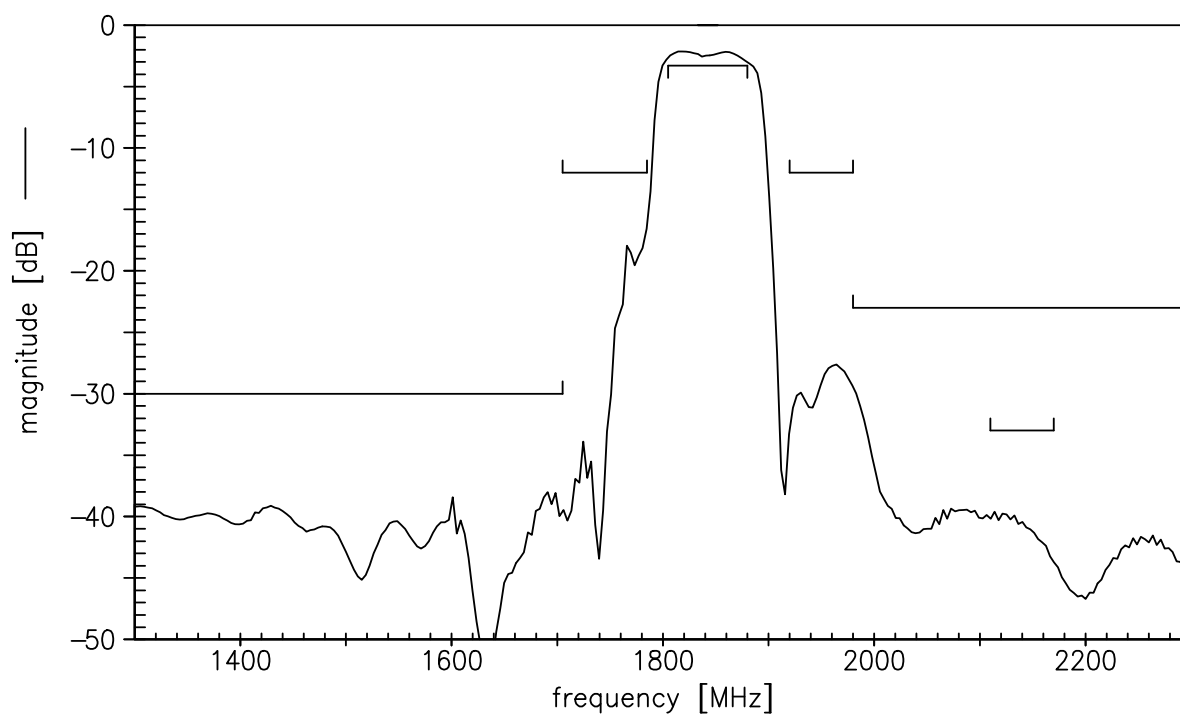
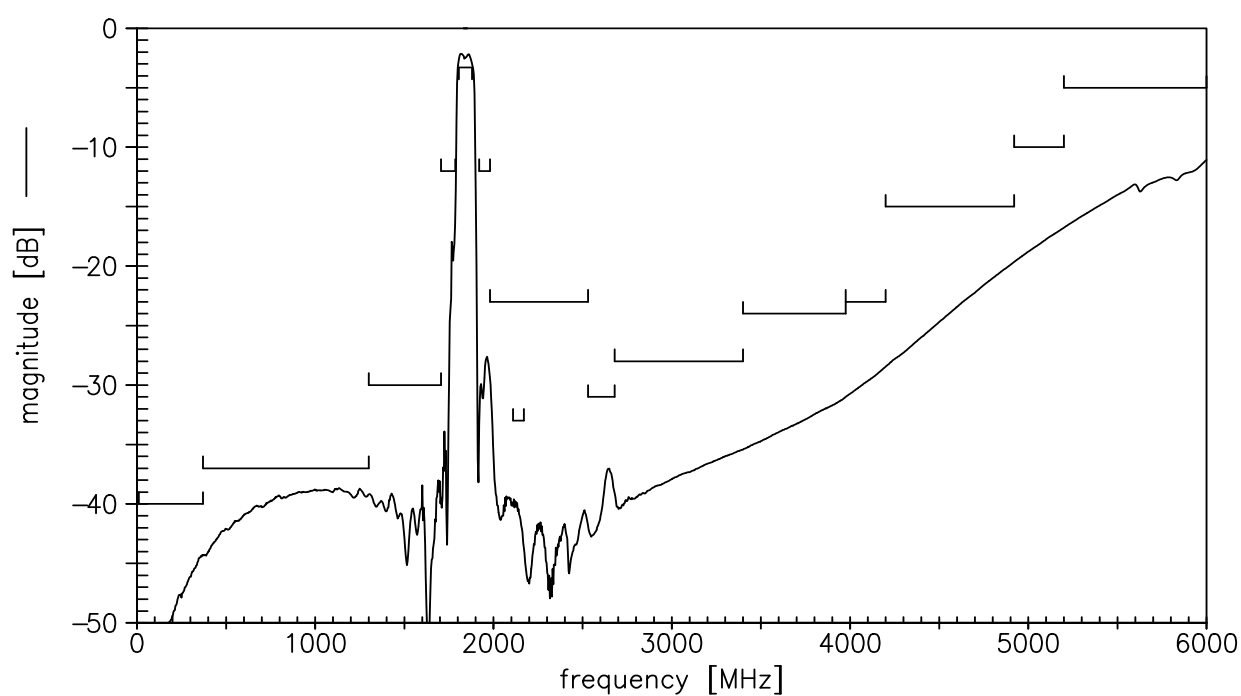
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**Maximum ratings**

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	
Input power	P <sub>IN</sub>			
1805.0 ... 1880.0 MHz		15	dBm	cw, 1000 h, 85 °C
1805.0 ... 1880.0 MHz		12	dBm	cw, 10000 h, 85 °C



**Transfer function (S21, narrowband)**

**Transfer function (S21, wideband)**


**SAW Components**
**B4166**
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**1842.5 MHz**

Data sheet


**References**

<b>Type</b>	B4166
<b>Ordering code</b>	B39182B4166U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B4166_NB.s2p B4166_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.
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**Published by EPCOS AG**

**Systems, Acoustics, Waves Business Group**

**P.O. Box 80 17 09, 81617 Munich, GERMANY**

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