SAW Components

SAW RF filter for base stations

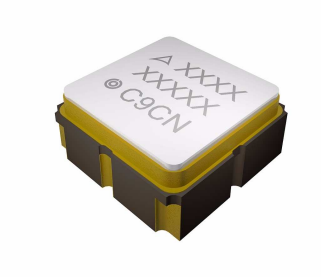
Band 3 downlink

Series/type:	**B4166**
Ordering code:	**B39182B4166U410**
Date:	Aug 20, 2015
Version:	2.1

EPCOS AG is a TDK Group Company.

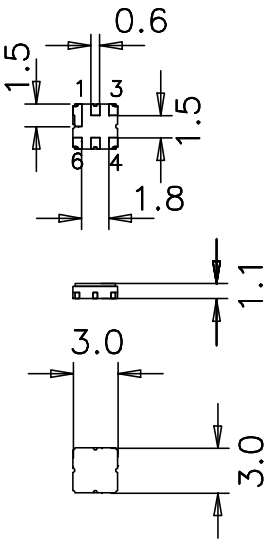
Application

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



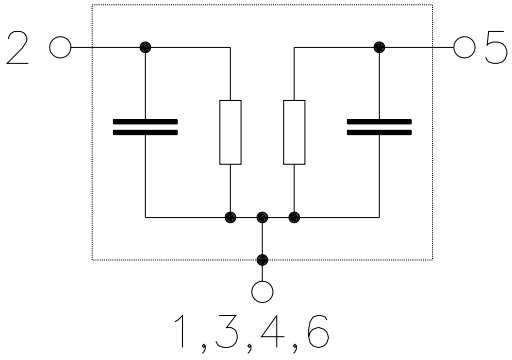
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 1
- Filter surface passivated



Pin configuration

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



Data sheet SMD

Characteristics

Temperature range for specification: T = 25 +/– 2 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation	α_{max}				
1805.0 ... 1880.0 MHz		—	2.9	3.3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805.0 ... 1880.0 MHz		—	0.9	1.3	dB
Input VSWR					
1805.0 ... 1880.0 MHz		—	2.0:1	2.2:1	
Output VSWR					
1805.0 ... 1880.0 MHz		—	2.2:1	2.4:1	
Absolute attenuation	α_{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		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

Data sheet SMD

Characteristics

Temperature range for specification: T = –40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation	α_{max}				
1805.0 ... 1880.0 MHz		—	3.2	4.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805.0 ... 1880.0 MHz		—	1.2	2.5	dB
Input VSWR					
1805.0 ... 1880.0 MHz		—	2.1:1	2.5:1	
Output VSWR					
1805.0 ... 1880.0 MHz		—	2.3:1	2.7:1	
Absolute attenuation	α_{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

Data sheet SMD

Characteristics

Temperature range for specification: T = –40 ˚C to +95 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation	α_{max}				
1805.0 ... 1880.0 MHz		—	3.2	5.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805.0 ... 1880.0 MHz		—	1.2	3.5	dB
Input VSWR					
1805.0 ... 1880.0 MHz		—	2.1:1	2.7:1	
Output VSWR					
1805.0 ... 1880.0 MHz		—	2.3:1	2.9:1	
Absolute attenuation	α_{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

Data sheet SMD

Characteristics

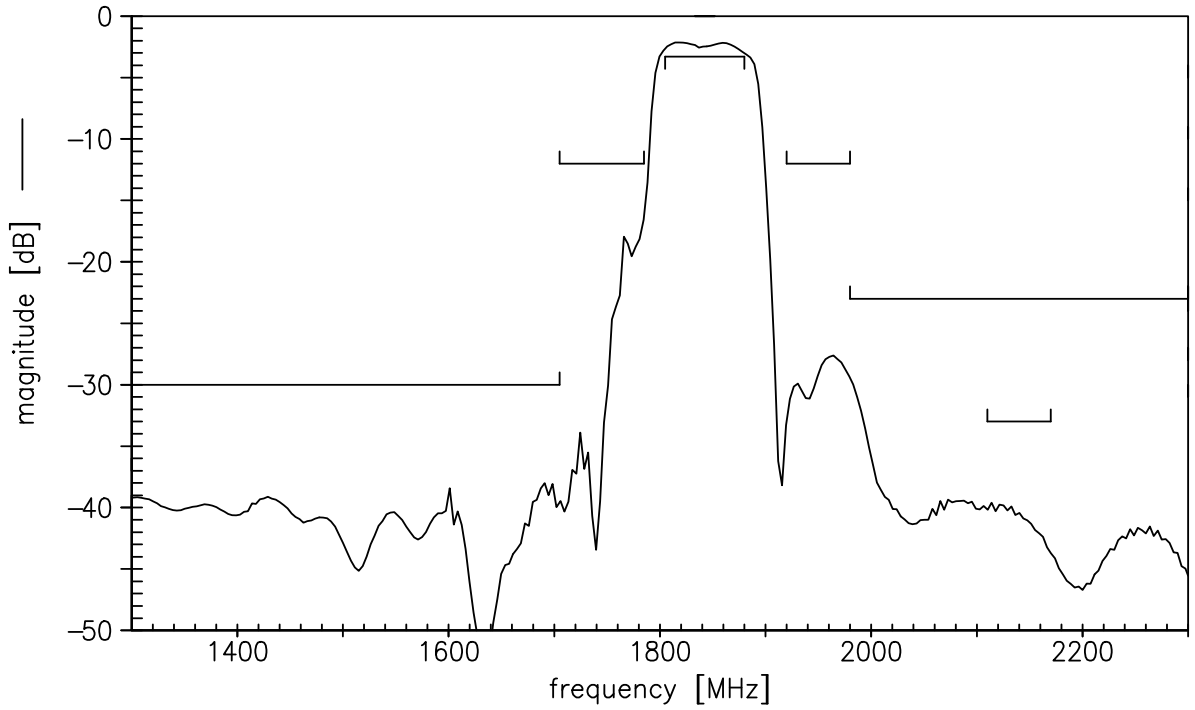
Temperature range for specification: T = –40 ˚C to +110 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1842.5	—	MHz
Maximum insertion attenuation	α_{max}				
1805.0 ... 1880.0 MHz		—	3.2	5.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805.0 ... 1880.0 MHz		—	1.2	3.5	dB
Input VSWR					
1805.0 ... 1880.0 MHz		—	2.1:1	2.9:1	
Output VSWR					
1805.0 ... 1880.0 MHz		—	2.3:1	3.1:1	
Absolute attenuation	α_{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

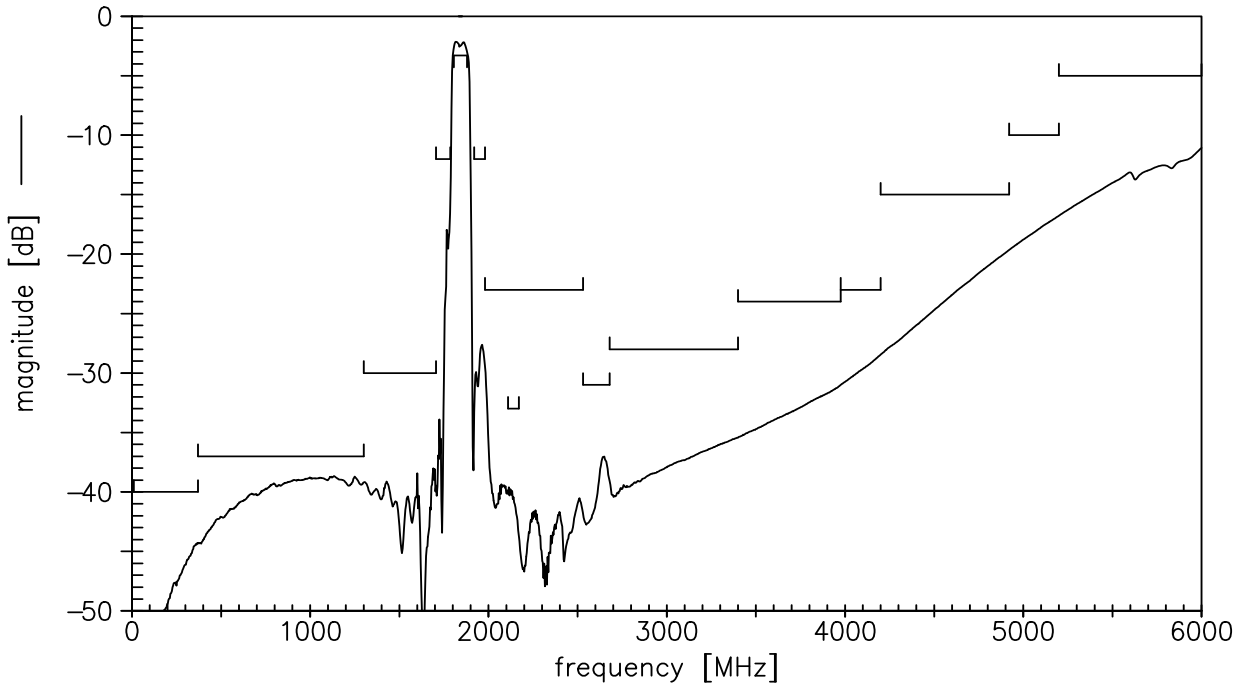
Maximum ratings

Operable temperature range	T	–45/+125	˚C	
Storage temperature range	T_{stg}	–45/+125	˚C	
DC voltage	V_{DC}	5	V	
Input power	P_{IN}			
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)



References

Type	B4166
Ordering code	B39182B4166U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B4166_NB.s2p B4166_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	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.
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

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