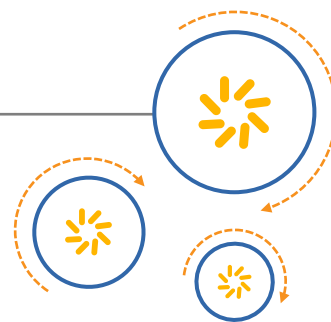


RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW RF filter for base stations

Band 1 uplink

Series/type:	B5166
Ordering code:	B39202B5166U410
Date:	Dec 09, 2014
Version:	2.2

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Band 1 uplink

Series/type:	B5166
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SAW Components

B5166

SAW RF filter

1950.0 MHz

Data sheet

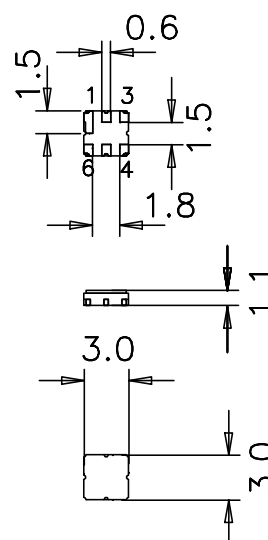


Application

- RF filter for base stations
- High nearby selectivity
- Usable bandwidth 60 MHz

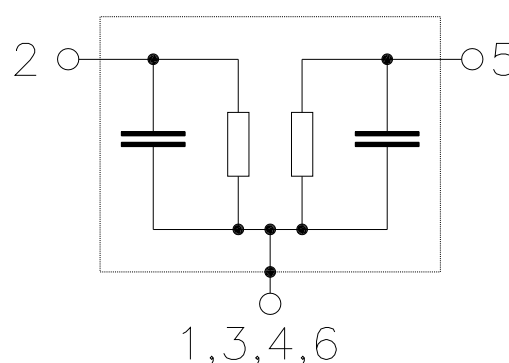
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- 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
B5166
SAW RF filter
1950.0 MHz
Data sheet

Characteristics

Temperature range for specification: $T = -30\text{ }^{\circ}\text{C to }+85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\text{ }\Omega$
 Terminating load impedance: $Z_L = 50\text{ }\Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1950.0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.0	3.0	dB
1920.0 ... 1980.0 MHz		—	2.0	3.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.8	1.5	dB
1920.0 ... 1980.0 MHz		—	0.8	1.5	dB
VSWR		—	1.9:1	2.3:1	
1920.0 ... 1980.0 MHz		—	1.9:1	2.3:1	
Absolute attenuation	α_{abs}				
10.0 ... 1410.0 MHz		30	38	—	dB
1410.0 ... 1635.0 MHz		35	40	—	dB
1635.0 ... 1880.0 MHz		30	33	—	dB
2010.0 ... 2110.0 MHz		20	25	—	dB
2110.0 ... 2400.0 MHz		35	42	—	dB
2400.0 ... 3800.0 MHz		25	38	—	dB

SAW Components
B5166
SAW RF filter
1950.0 MHz
Data sheet

Characteristics

Temperature range for specification: $T = -30\text{ }^{\circ}\text{C}$ to $+85\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	1950.0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.0	3.0	dB
1920.0 ... 1980.0 MHz		—	2.0	3.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.7	1.5	dB
1920.0 ... 1980.0 MHz		—	0.7	1.5	dB
VSWR		—	1.7:1	2.0:1	
1920.0 ... 1980.0 MHz		—	1.7:1	2.0:1	
Absolute attenuation	α_{abs}				
10.0 ... 1410.0 MHz		30	36	—	dB
1410.0 ... 1635.0 MHz		35	39	—	dB
1635.0 ... 1880.0 MHz		30	33	—	dB
2010.0 ... 2110.0 MHz		20	25	—	dB
2110.0 ... 2400.0 MHz		35	42	—	dB
2400.0 ... 3800.0 MHz		25	38	—	dB

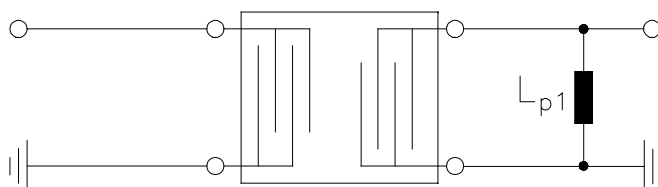
SAW Components
B5166
SAW RF filter
1950.0 MHz
Data sheet

Maximum ratings

Operable temperature range	T	−45/+125	°C	
Storage temperature range	T _{stg}	−45/+125	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	150 ¹⁾	V	Machine Model
		300 ²⁾	V	Human Body Model
Input power	P _{IN}			
1920 ... 1980 MHz		8	dBm	cw, 100000h, at 85°C
1920 ... 1980 MHz		23	dBm	cw, 100h, at 85°C

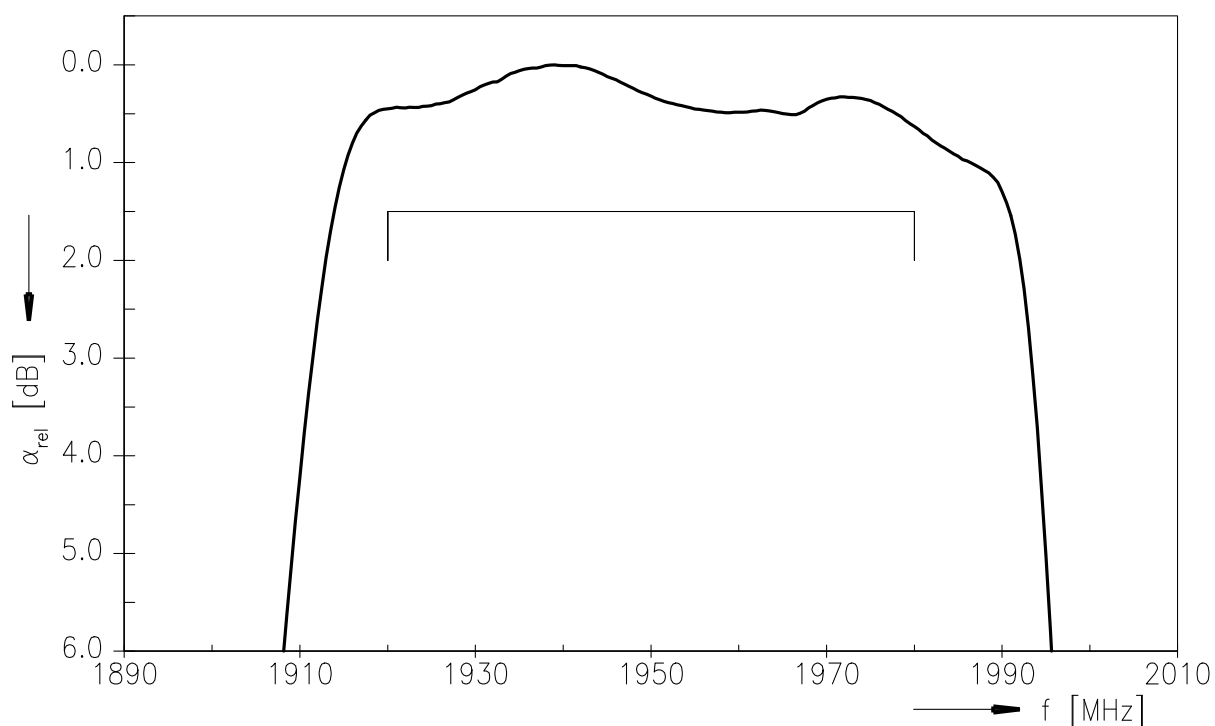
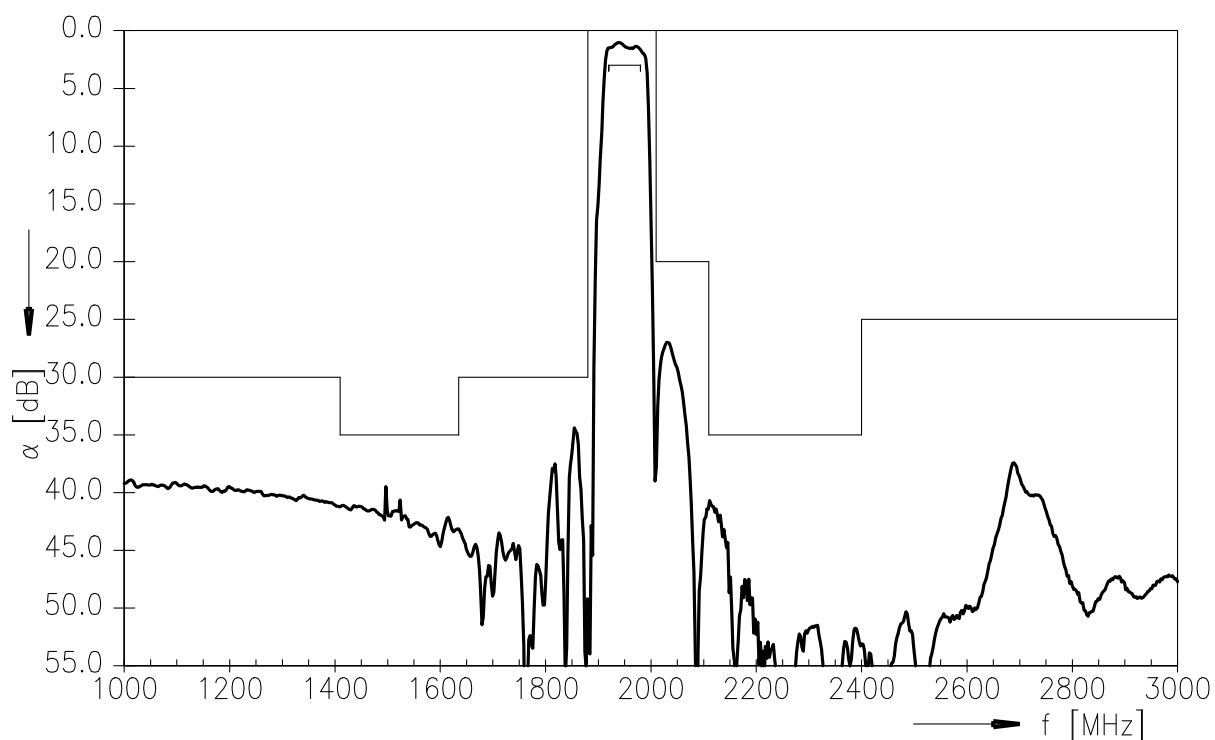
¹⁾ acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

²⁾ acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulses

Matching network to 50 Ω


$$L_{p1} = 12.0\text{nH}$$

(Element values depend upon board layout and properties)

Transfer function (S21, narrowband)

Transfer function (S21, wideband)


SAW Components
B5166
SAW RF filter
1950.0 MHz

Data sheet


References

Type	B5166
Ordering code	B39202B5166U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5166_NB.s2p, B5166_WB.s2p, B5166_NB_UN.s2p, B5166_WB_UN.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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