

SAW Components

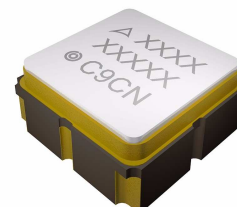
SAW RF filter for base stations

Band 8 downlink

Series/type:	B5182
Ordering code:	B39941B5182U410
Date:	Feb 12, 2015
Version:	2.2

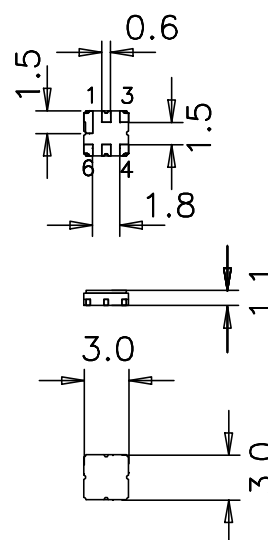
Application

- RF filter for band 8 downlink base stations
- Unbalanced to unbalanced operation
- Low amplitude ripple
- Usable passband 35 MHz
- No matching required for operation at 50 Ω



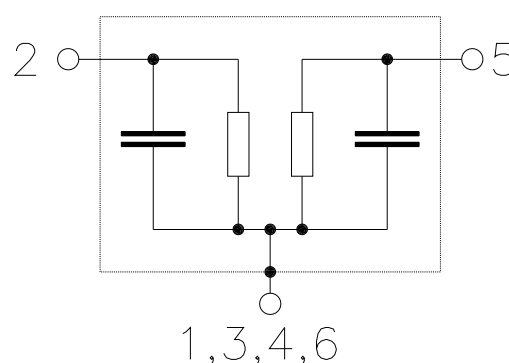
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- RoHS compatible
- Approximate weight 0.037 g
- Package for **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
B5182
SAW RF filter
942.5 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.	
Center frequency	f_c	—	942.5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.5	3.5	dB
925.0 ... 960.0 MHz		—	2.5	3.5	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.6	2.5	dB
925.0 ... 960.0 MHz		—	1.6	2.5	dB
Input VSWR		—	2.2:1	2.6:1	
925.0 ... 960.0 MHz		—	2.2:1	2.6:1	
Output VSWR		—	2.3:1	2.6:1	
925.0 ... 960.0 MHz		—	2.3:1	2.6:1	
Absolute attenuation	α_{abs}				
10.0 ... 800.0 MHz		50	54	—	dB
800.0 ... 880.0 MHz		40	46	—	dB
880.0 ... 905.0 MHz		35	44	—	dB
905.0 ... 915.0 MHz		24	33	—	dB
980.0 ... 982.0 MHz		30	55	—	dB
982.0 ... 1005.0 MHz		30	48	—	dB
1005.0 ... 1025.0 MHz		30	48	—	dB
1025.0 ... 1760.0 MHz		40	43	—	dB
1760.0 ... 2500.0 MHz		30	38	—	dB
2500.0 ... 3120.0 MHz		20	35	—	dB
3120.0 ... 4000.0 MHz		10	20	—	dB
4000.0 ... 6000.0 MHz		2.5 ¹⁾	3.8	—	dB

¹⁾ Ultimate rejection is limited by electromagnetic feedthrough which depends upon PCB layout

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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.	
Center frequency	f_C	—	942.5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.5	4.0	dB
925.0 ... 960.0 MHz		—	2.5	4.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.6	3.0	dB
925.0 ... 960.0 MHz		—	1.6	3.0	dB
Input VSWR		—	2.2:1	2.6:1	
925.0 ... 960.0 MHz		—	2.2:1	2.6:1	
Output VSWR		—	2.3:1	2.6:1	
925.0 ... 960.0 MHz		—	2.3:1	2.6:1	
Absolute attenuation	α_{abs}				
10.0 ... 800.0 MHz		50	54	—	dB
800.0 ... 880.0 MHz		40	46	—	dB
880.0 ... 905.0 MHz		35	44	—	dB
905.0 ... 915.0 MHz		24	33	—	dB
980.0 ... 982.0 MHz		30	55	—	dB
982.0 ... 1005.0 MHz		30	48	—	dB
1005.0 ... 1025.0 MHz		30	48	—	dB
1025.0 ... 1760.0 MHz		40	43	—	dB
1760.0 ... 2500.0 MHz		30	38	—	dB
2500.0 ... 3120.0 MHz		20	35	—	dB
3120.0 ... 4000.0 MHz		10	20	—	dB
4000.0 ... 6000.0 MHz		2.5 ¹⁾	3.8	—	dB

¹⁾ Ultimate rejection is limited by eletromagnetic feedthrough which depends upon PCB layout

SAW Components
B5182
SAW RF filter
942.5 MHz
Data sheet

Characteristics

Temperature range for specification: $T = -40\text{ }^{\circ}\text{C to }+105\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	942.5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2.5	5.0	dB
925.0 ... 960.0 MHz		—	2.5	5.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.6	4.0	dB
925.0 ... 960.0 MHz		—	1.6	4.0	dB
Input VSWR		—	2.2:1	2.8:1	
925.0 ... 960.0 MHz		—	2.2:1	2.8:1	
Output VSWR		—	2.3:1	2.8:1	
925.0 ... 960.0 MHz		—	2.3:1	2.8:1	
Absolute attenuation	α_{abs}				
10.0 ... 800.0 MHz		50	54	—	dB
800.0 ... 880.0 MHz		40	46	—	dB
880.0 ... 905.0 MHz		35	44	—	dB
905.0 ... 915.0 MHz		18	33	—	dB
980.0 ... 982.0 MHz		30	55	—	dB
982.0 ... 1005.0 MHz		30	48	—	dB
1005.0 ... 1025.0 MHz		30	48	—	dB
1025.0 ... 1760.0 MHz		40	43	—	dB
1760.0 ... 2500.0 MHz		30	38	—	dB
2500.0 ... 3120.0 MHz		20	35	—	dB
3120.0 ... 4000.0 MHz		10	20	—	dB
4000.0 ... 6000.0 MHz		2.5 ¹⁾	3.8	—	dB

¹⁾ Ultimate rejection is limited by electromagnetic feedthrough which depends upon PCB layout

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
		150 ²⁾	V	Human Body Model
Input power	P _{IN}			
925.0 ... 960.0 MHz		15	dBm	cw, 100000 h, 85 °C
925.0 ... 960.0 MHz		14	dBm	cw, 100000 h, 95 °C
925.0 ... 960.0 MHz		20	dBm	cw, 1000 h, 85 °C
925.0 ... 960.0 MHz		19	dBm	cw, 1000 h, 95 °C
925.0 ... 960.0 MHz		22	dBm	cw, 24 h, 55 °C
925.0 ... 960.0 MHz		19	dBm	cw, 24 h, 105 °C
925.0 ... 960.0 MHz		23	dBm	cw, 2 h, 85 °C
925.0 ... 960.0 MHz		22	dBm	cw, 2 h, 95 °C

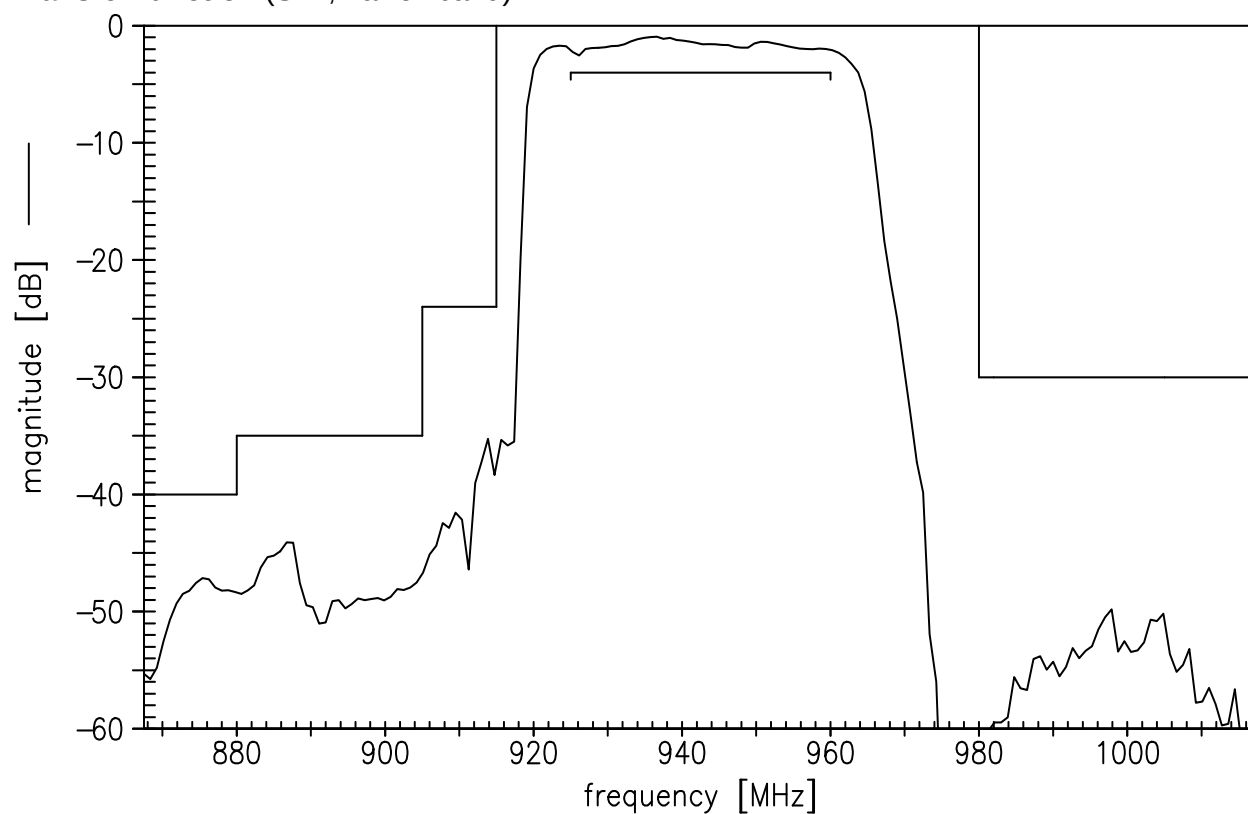
¹⁾ acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses

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

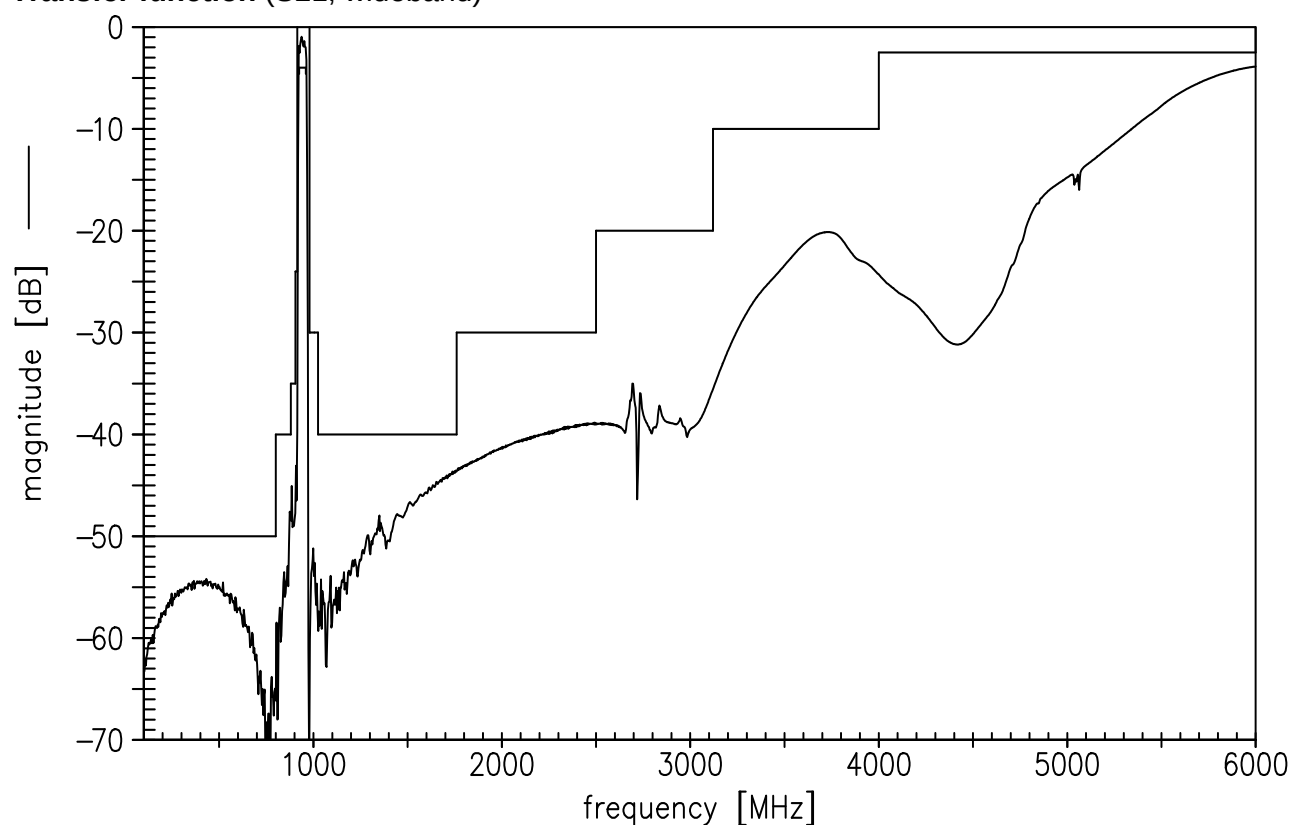
Data sheet



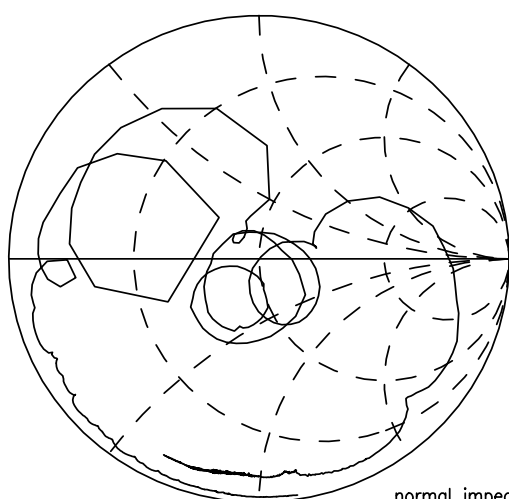
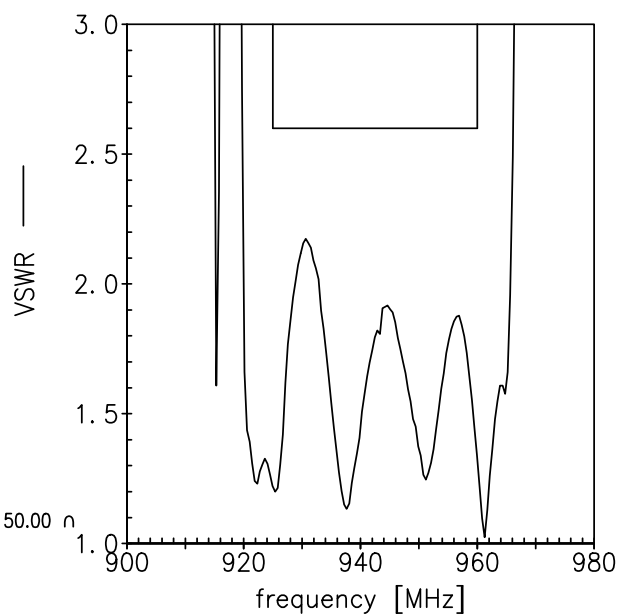
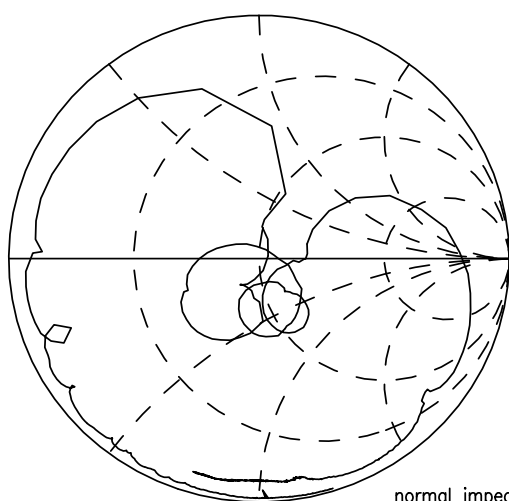
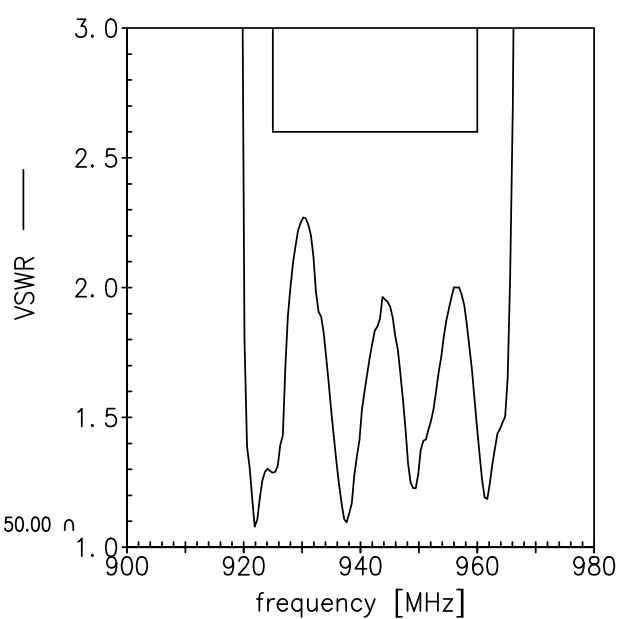
Transfer function (S21, narrowband)



Transfer function (S21, wideband)



Data sheet


Smith charts
 S_{11} function

normal impedance: 50.00 Ω

 S_{22} function

normal impedance: 50.00 Ω


References

Type	B5182
Ordering code	B39941B5182U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8228-Z000
Date codes	L_1126
S-parameters	B5182_NB.s2p B5182_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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