SAW Components

SAW Rx filter

WCDMA Band I

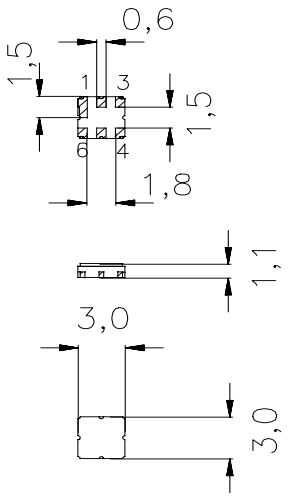
Series/type:	**B5064**
Ordering code:	**B39202B5064U410**
Date:	September 04, 2013
Version:	2.6

Application

- Low-loss RF filter for UMTS Basestation, receive path
- Unbalanced to unbalanced operation
- Usable passband of 60MHz
- Suitable for GPRS class 1 to 12

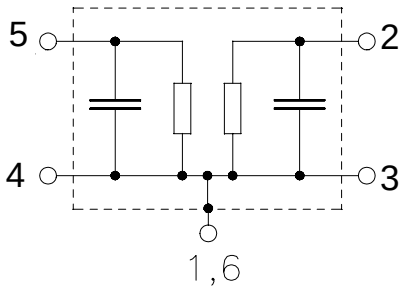
Features

- Package size 3.0 x3.0 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**)



Pin configuration

- 5 Input
- 2 Output
- 1,3,4,6 Ground



Data sheet SMD

Characteristics

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

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	1950.0	—	MHz
Maximum insertion attenuation	α_{max}				
1920.0MHz ... 1980.0MHz		—	2.4	2.8[1)]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0MHz ... 1980.0MHz		—	0.7	1.1[2)]	dB
Input VSWR					
1920.0MHz ... 1980.0MHz		—	1.6	1.8	
Output VSWR					
1920.0MHz ... 1980.0MHz		—	1.6	1.8	
Attenuation	α				
0.1 ... 1600.0 MHz		35.0	38.0	—	dB
1600.0 ... 1818.0 MHz		28.0	30.0	—	dB
1818.0 ... 1876.0 MHz		18.0	22.0	—	dB
1876.0 ... 1890.0 MHz		8.0	12.0	—	dB
2010.0 ... 2050.0 MHz		10.0	20.0	—	dB
2050.0 ... 2110.0 MHz		15.0	20.0	—	dB
2110.0 ... 2170.0 MHz		20.0	25.0	—	dB
2170.0 ... 3500.0 MHz		24.0	26.0	—	dB

1) 2.6dB at 25 ˚C
2) 0.9dB at 25 ˚C

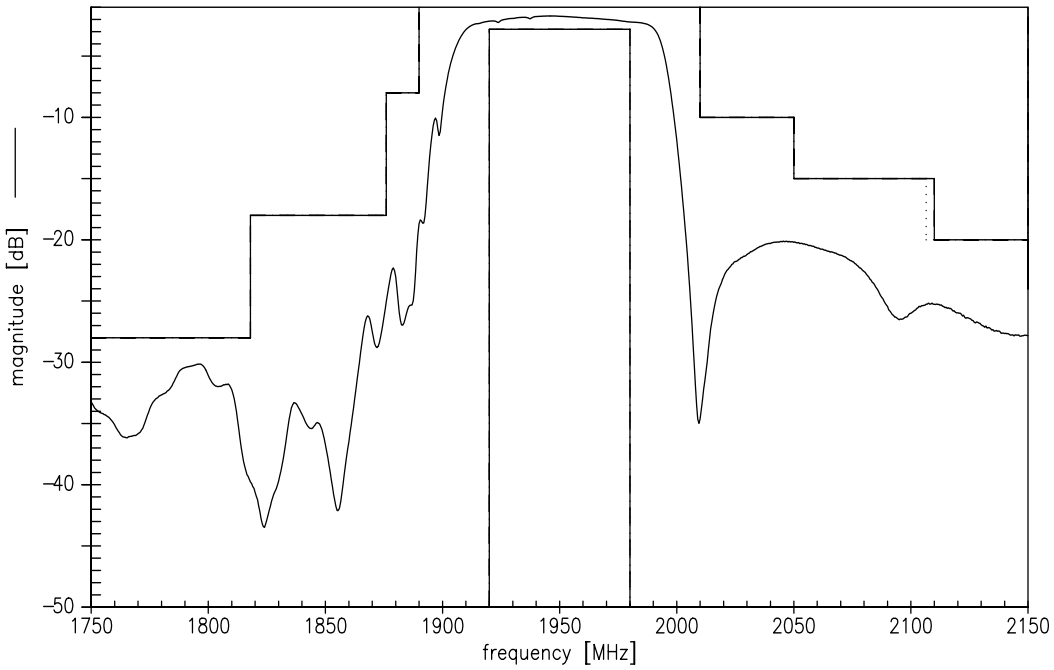
Maximum ratings

Operable temperature range	T	–40/+125	˚C	
Storage temperature range	T_{stg}	–40/+125	˚C	
DC voltage	V_{DC}	6	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
ESD voltage	V_{ESD}	300[2)]	V	charged device model, 3 pulses
Input power max	P_{IN}	10	dBm	effective power in the on-state, duty cycle 4:8

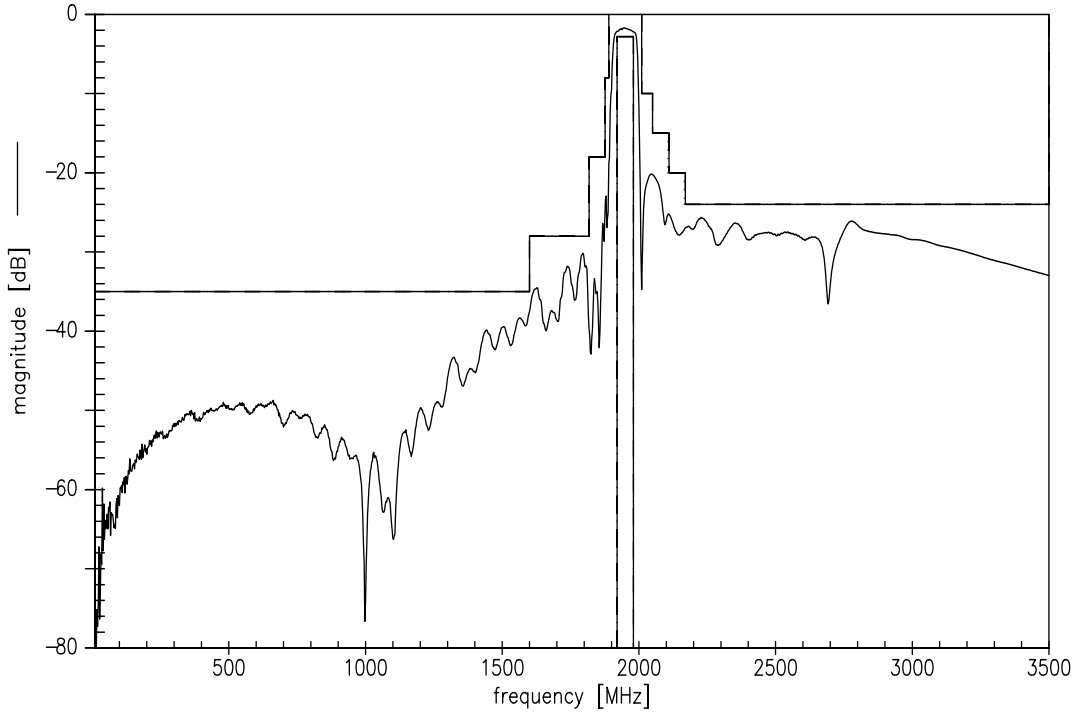
1) acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

2) acc. to JESD22-C101E (charged device model), 3 negative & 3 positive pulses.

Transfer function (narrowband) (with matching network)

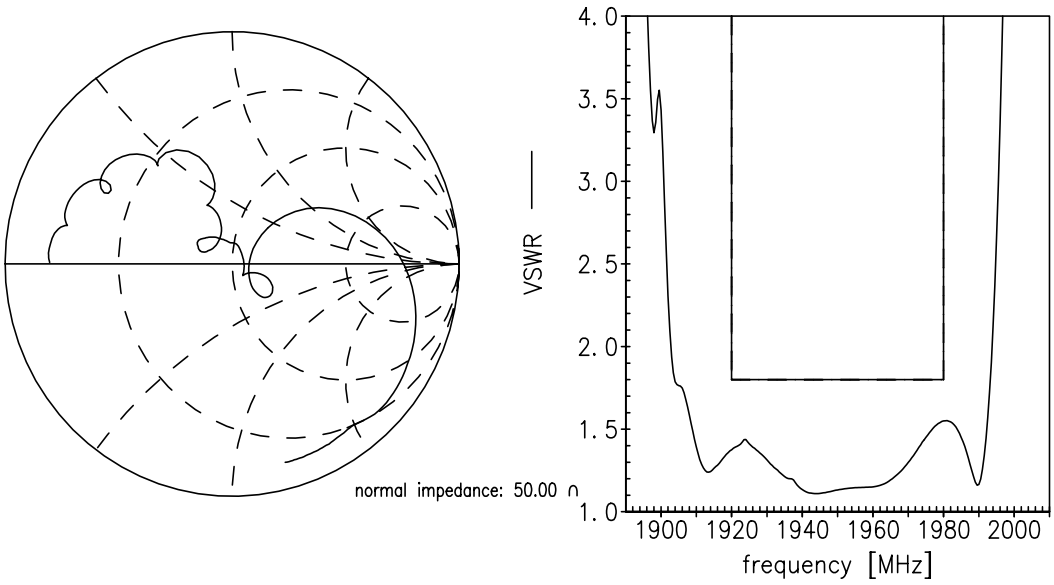


Transfer function (wideband) (with matching network)

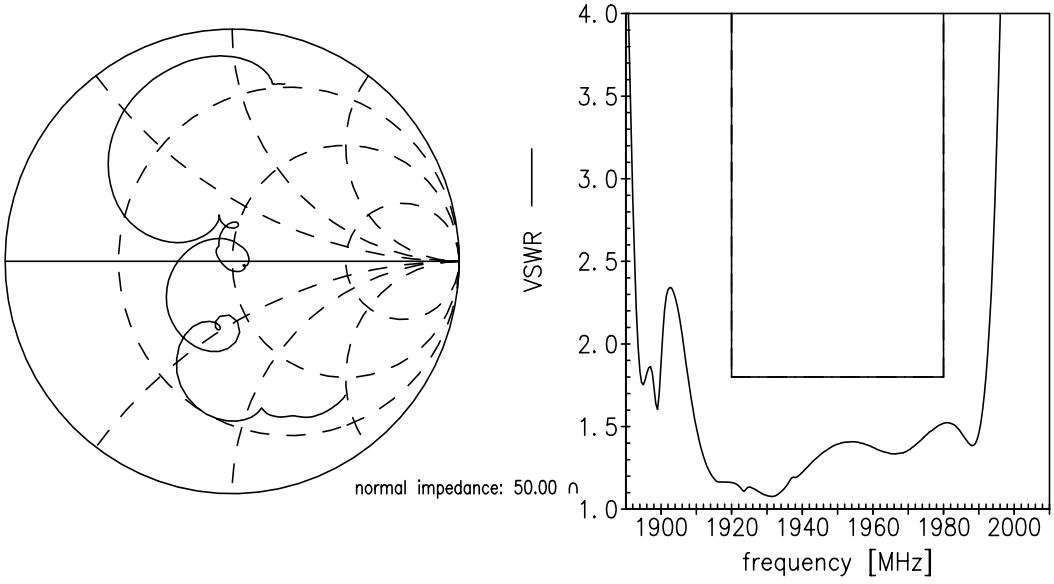


Smith charts (with matching network)

S_{11} function



S_{22} function



Data sheet SMD

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Terminating load impedance: Z_L = 50 Ω unbal with matching network.

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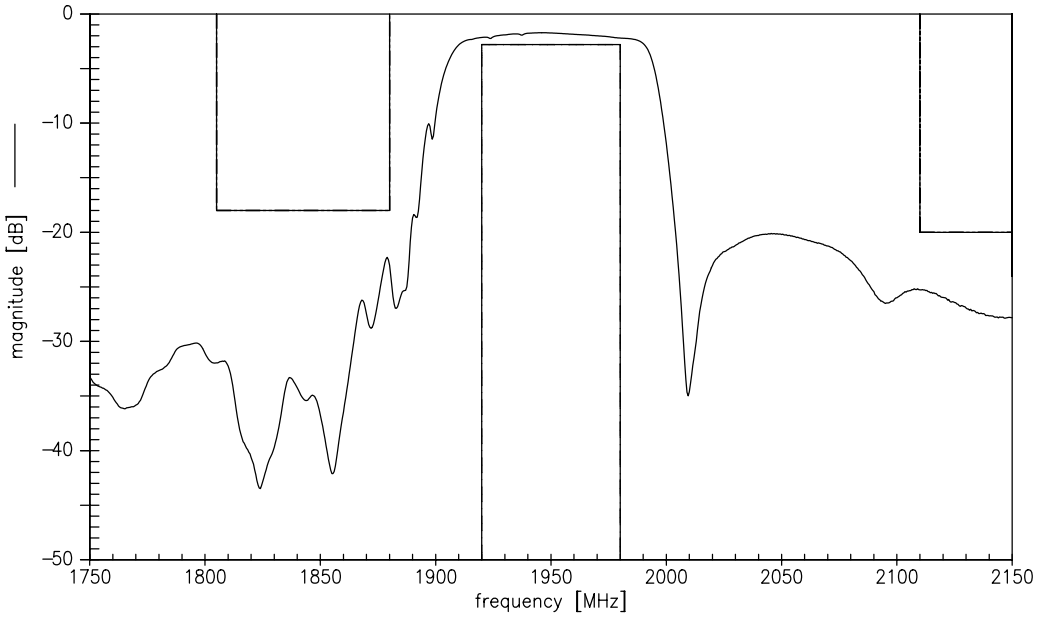
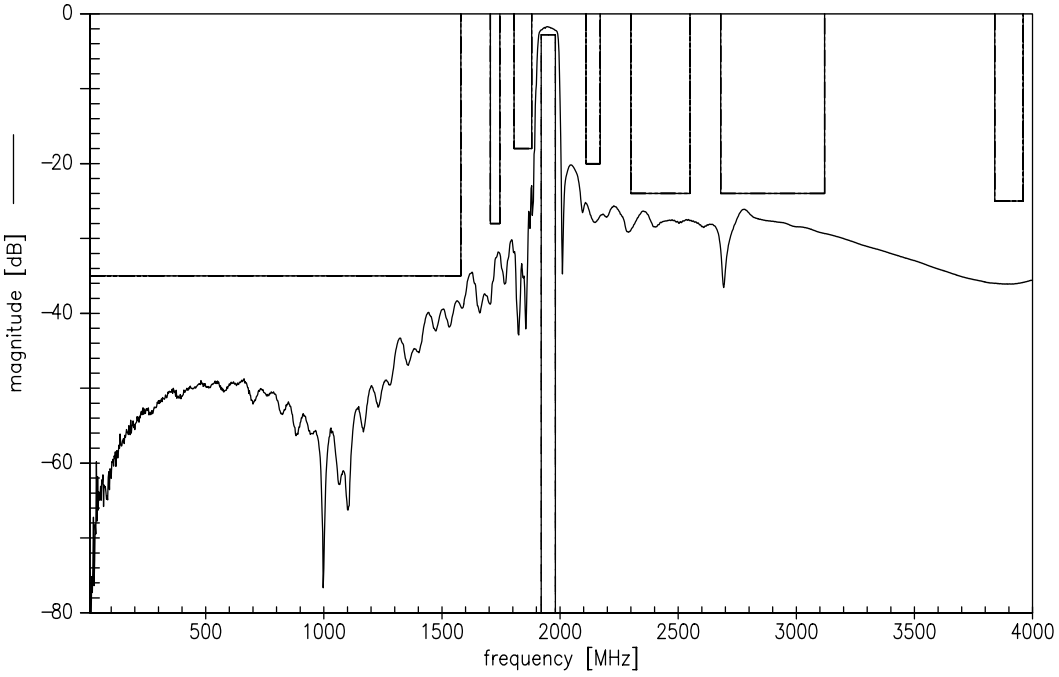
Amplitude ripple (p-p)	$\Delta\alpha$				
1920.0MHz ... 1980.0MHz		—	0.7	1.1[2)]	dB
Input VSWR					
1920.0MHz ... 1980.0MHz		—	1.6	1.8	
Output VSWR					
1920.0MHz ... 1980.0MHz		—	1.6	1.8	
Attenuation	α				
0.1 ... 1580.0 MHz		35.0	40.0	—	dB
1705.0 ... 1745.0 MHz		28.0	33.0	—	dB
1805.0 ... 1880.0 MHz		18.0	21.0	—	dB
2110.0 ... 2170.0 MHz		20.0	25.0	—	dB
2300.0 ... 2550.0 MHz		24.0	27.0	—	dB
2680.0 ... 3120.0 MHz		24.0	27.0	—	dB
3840.0 ... 3960.0 MHz		25.0	32.0	—	dB

1) 2.6dB at 25 ˚C
2) 0.9dB at 25 ˚C

Transfer function (narrowband) (with matching network)

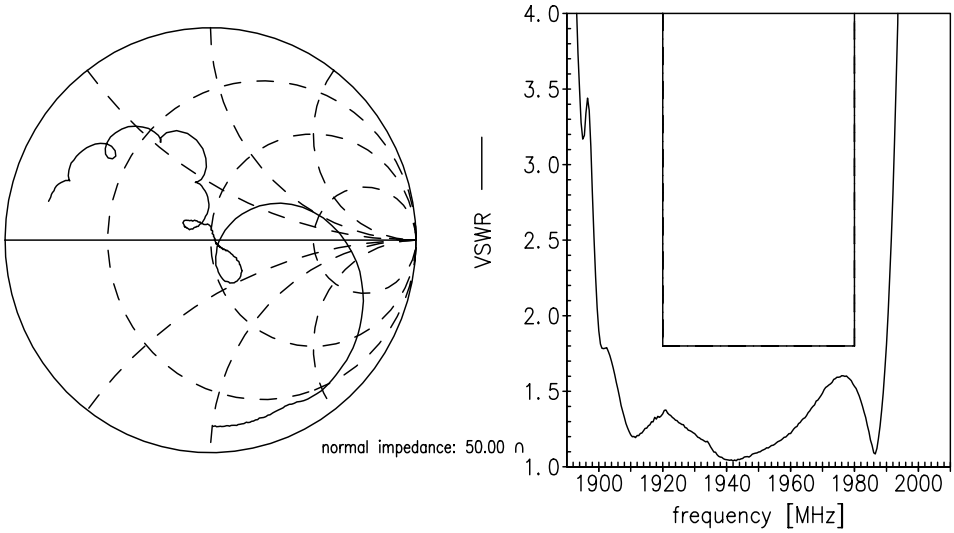


Transfer function - (Wideband) (with matching network)

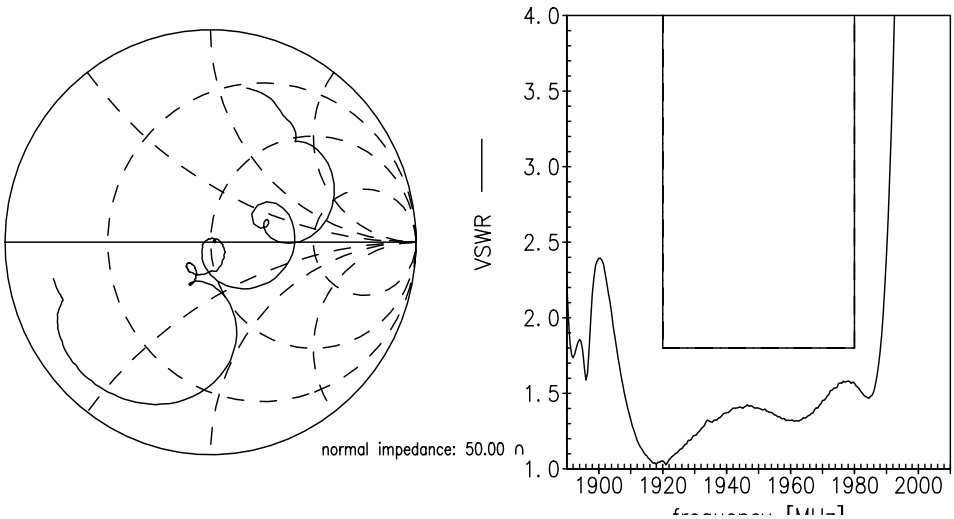


Smith charts (with matching network)

S_{11} function

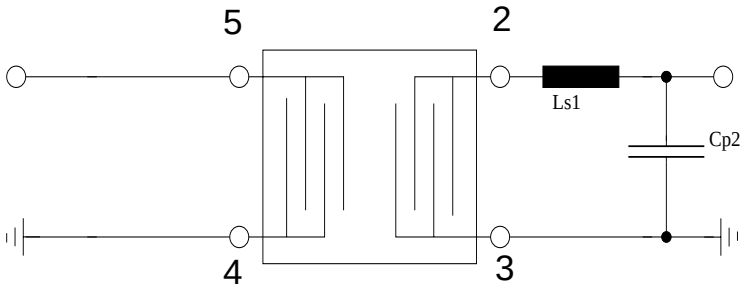


S_{22} function



Testing Matching Network

(Element values depend on PCB layout)



L_{s1} = 1.5nH

C_{p2} = 1.0pF

References

Type	B5064
Ordering code	B39202B5064U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date code	L_1126
S-parameters	B5064_NB.s2p , B5064_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 http://www.tdk.co.jp/tefe02/coil.htm#aname1 http://www.tdk.co.jp/etvcl/index.htm for a large variety of matching coils.

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