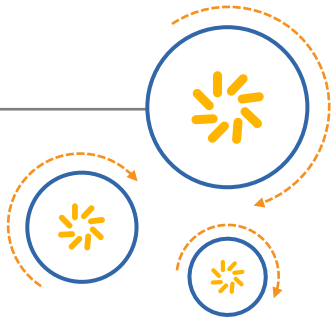
RF360 Europe GmbH

A Qualcomm – TDK Joint Venture



SAW Components

SAW RF filter for base stations

R-GSM

Series/type:	B5057
Ordering code:	B39941B5057U410
Date:	Dec 23, 2015
Version:	2.2

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RF360 Europe GmbH, Anzinger Str. 13, München, Germany

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SAW RF filter for base stations

R-GSM

Series/type:	**B5057**
Ordering code:	**B39941B5057U410**
Date:	Dec 23, 2015
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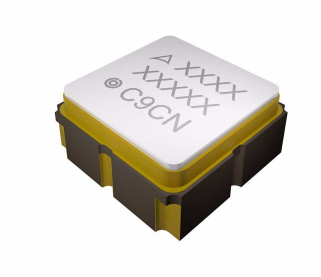
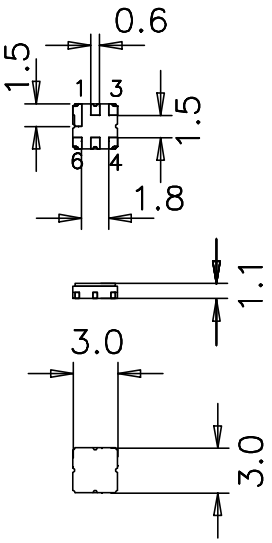
Application

- Low-loss filter for Basestation R-GSM, transmit path (Tx)
- Usable passband 39 MHz
- Unbalanced to unbalanced operation
- No matching required
- Filter impedance 50 Ω



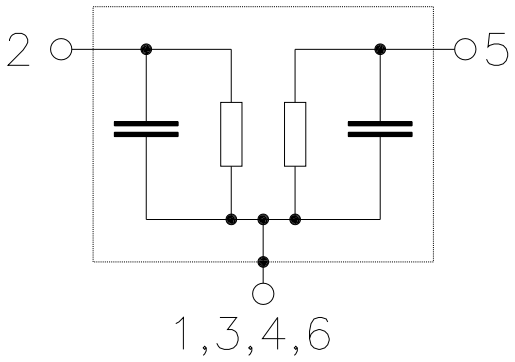
Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- Approximate weight 0.037 g
- Ceramic package for **S**urface **M**ount **T**echnology (**SMT**)
- RoHS compatible
- Ni, gold-plated
- **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 = –30 ˚C to +80 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ. @ 25 ˚C	max.	
Center frequency	f_C	—	940.5	—	MHz
Maximum insertion attenuation	α_{max}				
921.0 ... 960.0 MHz		—	2.7	4.0[1]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
921.0 ... 960.0 MHz		—	1.4	3.0[2]	dB
Input VSWR					
921.0 ... 960.0 MHz		—	2.3:1	3.0:1[3]	
Output VSWR					
921.0 ... 960.0 MHz		—	2.6:1	3.0:1[4]	
Absolute attenuation	α_{abs}				
0.3[5] ... 800.0 MHz		25	47	—	dB
800.0 ... 880.0 MHz		26	39	—	dB
880.0 ... 905.0 MHz		20[6]	31	—	dB
905.0 ... 915.0 MHz		2[7]	6	—	dB
980.0 ... 985.0 MHz		23	42	—	dB
985.0 ... 1005.0 MHz		30	34	—	dB
1005.0 ... 1025.0 MHz		30	34	—	dB
1025.0 ... 1760.0 MHz		27	34	—	dB
1760.0 ... 2000.0 MHz		28	32	—	dB
2000.0 ... 4000.0 MHz		18	23	—	dB

1) 3.0 dB at 25 ˚C.
2) 2.0 dB at 25 ˚C.
3) 2.8 at 25 ˚C.
4) 2.8 at 25 ˚C.
5) Final electrical test starts at 10 MHz.
6) 28 dB at 25 ˚C.
7) 3 dB at 25 ˚C.

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	—	940.5	—	MHz
Maximum insertion attenuation	α_{max}				
921.0 ... 960.0 MHz		—	2.7	4.5[1)]	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
921.0 ... 960.0 MHz		—	1.4	3.2[2)]	dB
Input VSWR					
921.0 ... 960.0 MHz		—	2.3:1	3.0:1[3)]	
Output VSWR					
921.0 ... 960.0 MHz		—	2.6:1	3.0:1[4)]	
Absolute attenuation	α_{abs}				
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800.0 ... 880.0 MHz		26	39	—	dB
880.0 ... 905.0 MHz		20[6)]	31	—	dB
905.0 ... 915.0 MHz		2[7)]	6	—	dB
980.0 ... 985.0 MHz		23	42	—	dB
985.0 ... 1005.0 MHz		30	34	—	dB
1005.0 ... 1025.0 MHz		30	34	—	dB
1025.0 ... 1760.0 MHz		27	34	—	dB
1760.0 ... 2000.0 MHz		28	32	—	dB
2000.0 ... 4000.0 MHz		18	23	—	dB

1) 3.0 dB at 25 ˚C.
2) 2.0 dB at 25 ˚C.
3) 2.8 at 25 ˚C.
4) 2.8 at 25 ˚C.
5) Final electrical test starts at 10 MHz.
6) 28 dB at 25 ˚C.
7) 3 dB at 25 ˚C.

Maximum ratings

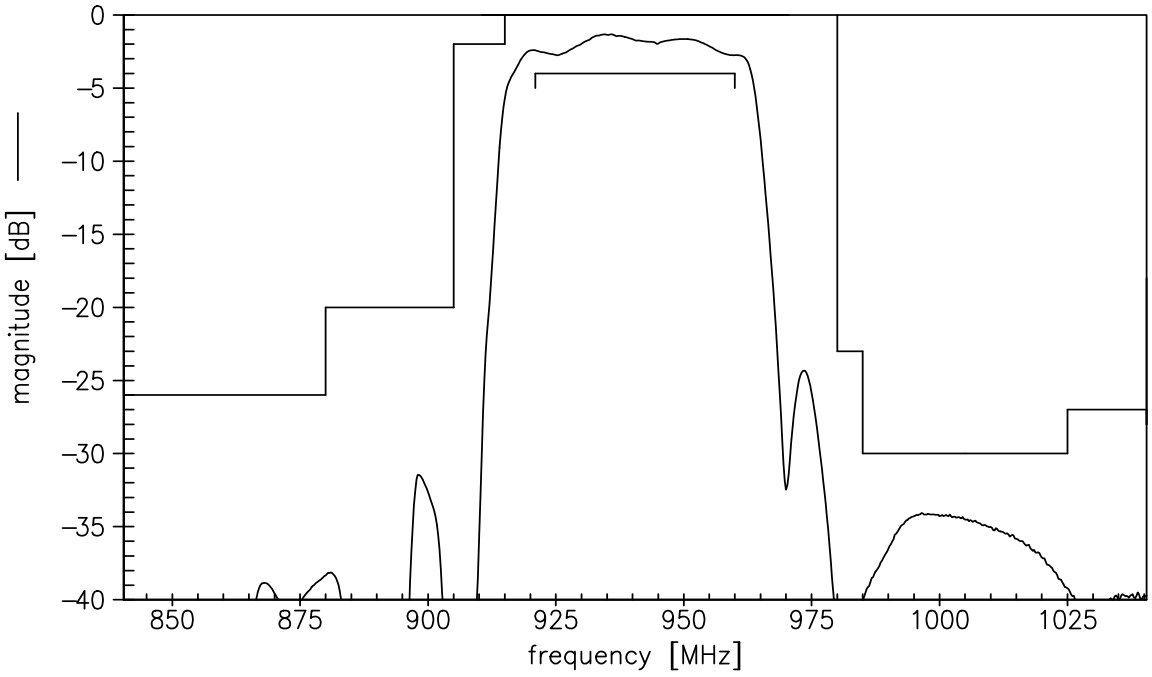
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	125[1)]	V	Machine Model
		350[2)]	V	Human Body Model
		1000[3)]	V	Charged Device Model
Input power	P_{IN}			
921.0 ... 960.0 MHz		10	dBm	cw

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

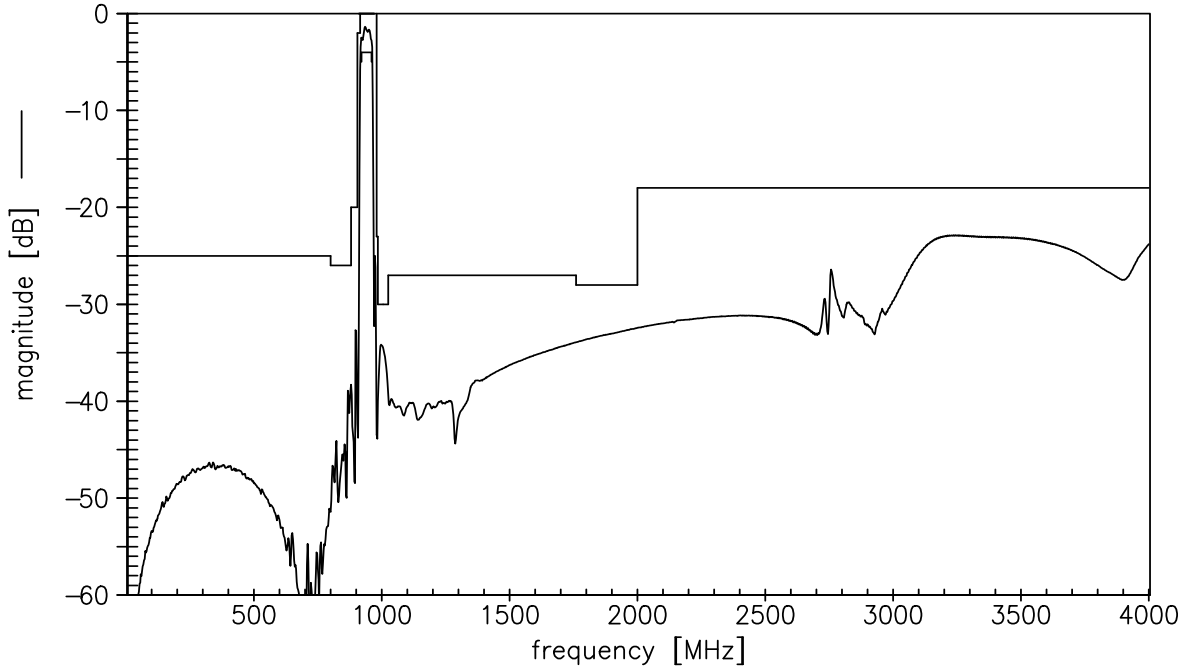
2) acc. to JESD22-A114F (HBM - Human Body Model), 1 negative & 1 positive pulse

3) acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative & 3 positive pulses

Transfer function (S21, narrowband)

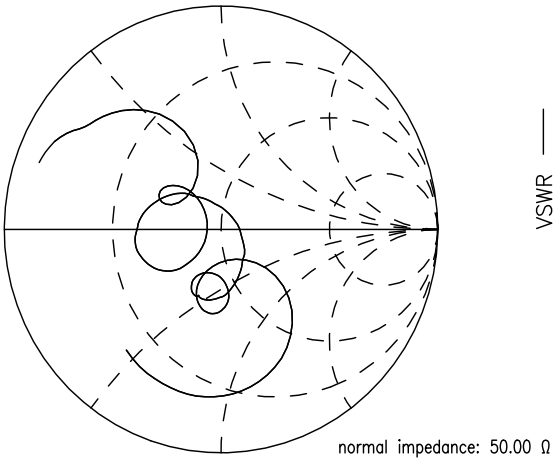


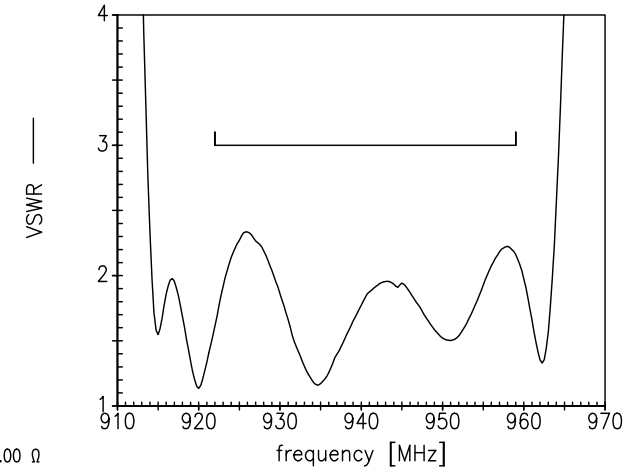
Transfer function (S21, wideband)



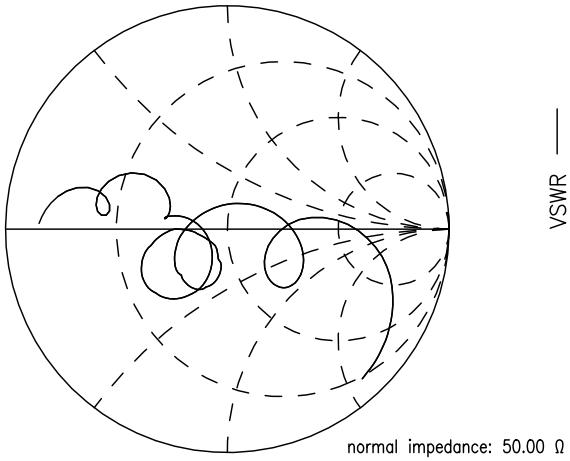
Smith charts

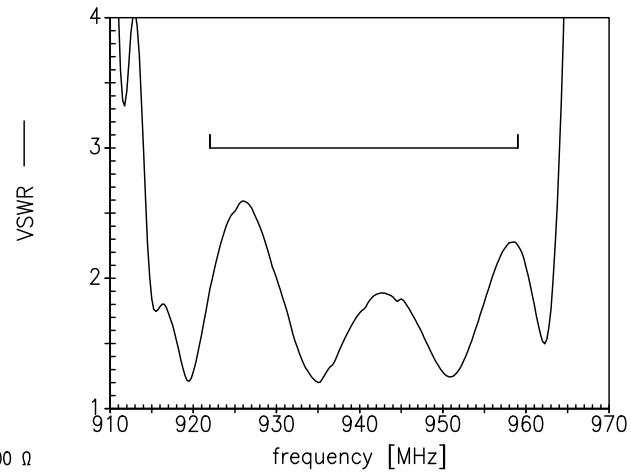
S_{11} function





S_{22} function





References

Type	B5057
Ordering code	B39941B5057U410
Marking and package	C61157-A7-A67
Packaging	F61074-V8168-Z000
Date codes	L_1126
S-parameters	B5057_NB.s2p B5057_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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