



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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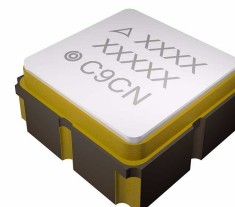
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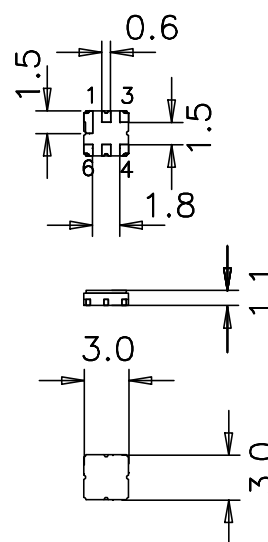
Data sheet

Application

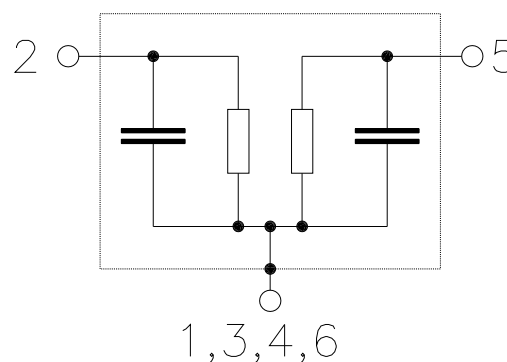
- Low-loss filter for Basestation R-GSM, transmit path (Tx)
- Usable passband 39 MHz
- Unbalanced to unbalanced operation
- No matching required
- Filter impedance 50 Ω


Features

- Package size 3.0 x 3.0 x 1.1 mm³
- Package code DCC6C
- Approximate weight 0.037 g
- Ceramic package for **Surface Mount Technology (SMT)**
- RoHS compatible
- Ni, gold-plated
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 1**
- Filter surface passivated


Pin configuration

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



Data sheet


Characteristics

Temperature range for specification: $T = -30\text{ °C to }+80\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	940.5	—	MHz
Maximum insertion attenuation	α_{\max}	—	2.7	4.0 ¹⁾	dB
921.0 ... 960.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.4	3.0 ²⁾	dB
921.0 ... 960.0 MHz					
Input VSWR		—	2.3:1	3.0:1 ³⁾	
921.0 ... 960.0 MHz					
Output VSWR		—	2.6:1	3.0:1 ⁴⁾	
921.0 ... 960.0 MHz					
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


Characteristics

Temperature range for specification: $T = -40\text{ °C to }+85\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 50\ \Omega$

		min.	typ. @ 25 °C	max.	
Center frequency	f_C	—	940.5	—	MHz
Maximum insertion attenuation	α_{\max}	—	2.7	4.5 ¹⁾	dB
921.0 ... 960.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.4	3.2 ²⁾	dB
921.0 ... 960.0 MHz					
Input VSWR		—	2.3:1	3.0:1 ³⁾	
921.0 ... 960.0 MHz					
Output VSWR		—	2.6:1	3.0:1 ⁴⁾	
921.0 ... 960.0 MHz					
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

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5) Final electrical test starts at 10 MHz.

6) 28 dB at 25 °C.

7) 3 dB at 25 °C.

Maximum ratings

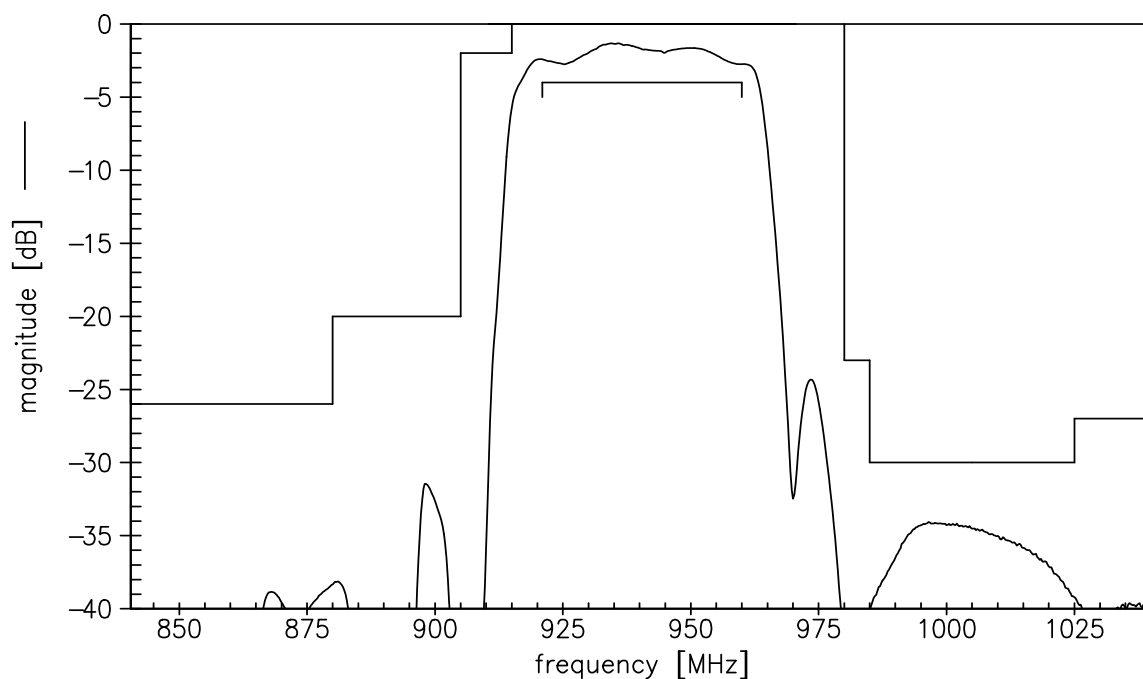
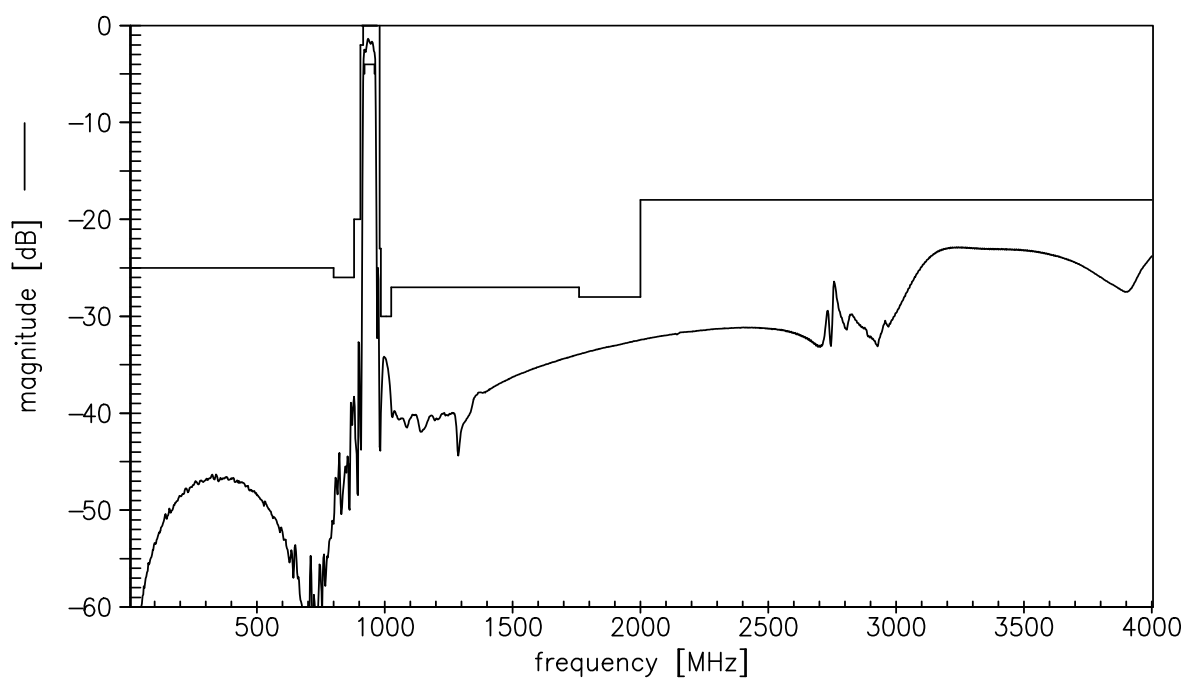
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	5	V	
ESD voltage	V _{ESD}	125 ¹⁾	V	Machine Model
		350 ²⁾	V	Human Body Model
		1000 ³⁾	V	Charged Device Model
Input power 921.0 ... 960.0 MHz	P _{IN}	10	dBm	cw

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

Data sheet

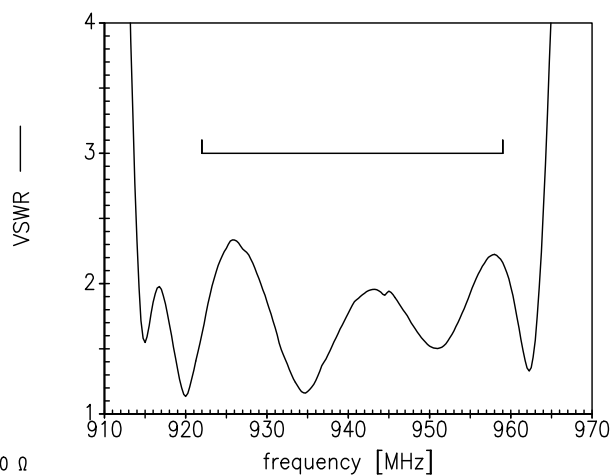
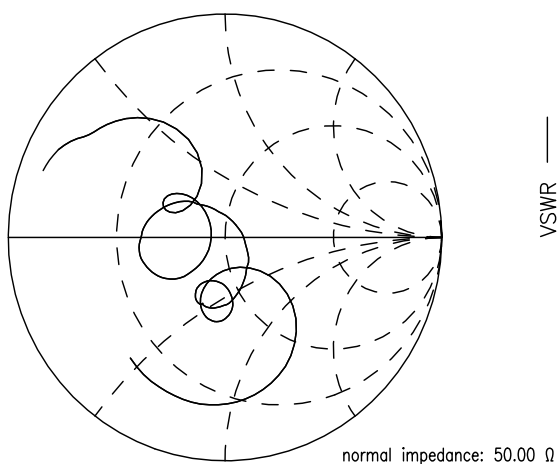

Transfer function (S21, narrowband)

Transfer function (S21, wideband)


Data sheet

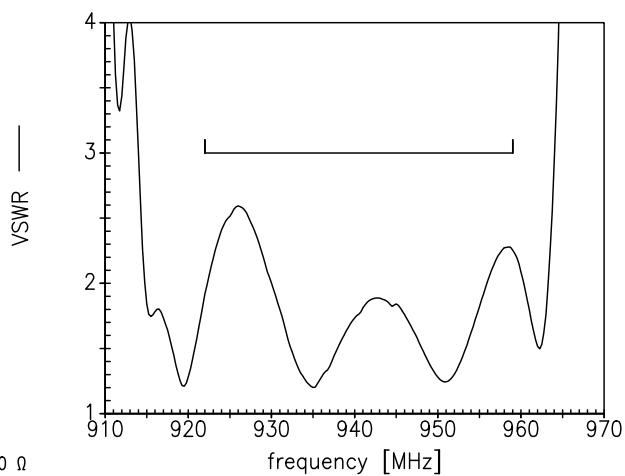
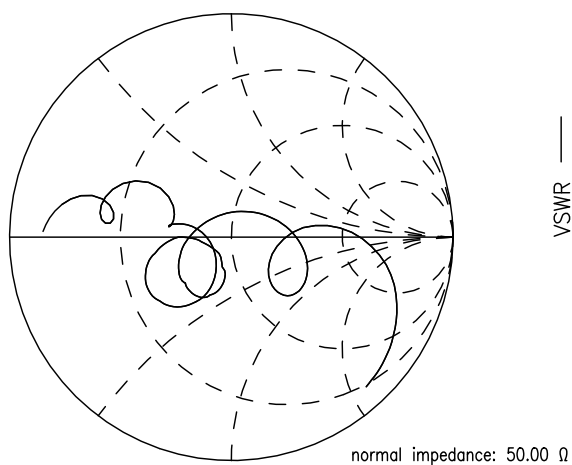
SMD

Smith charts

S₁₁ function



S₂₂ 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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