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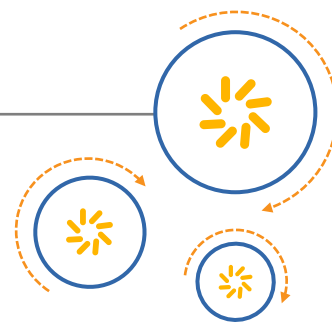
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RF360 Europe GmbH

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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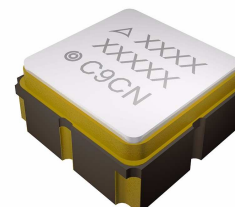
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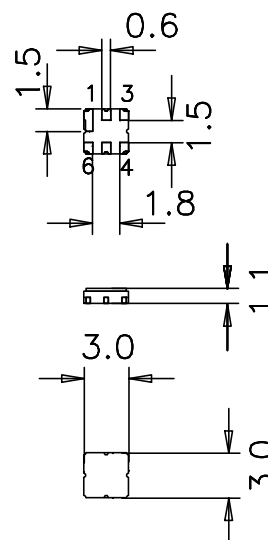
Data sheet

**Application**

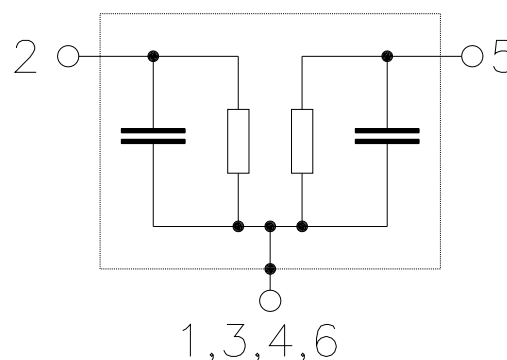
- Low-loss filter for Basestation R-GSM, transmit path (Tx)
- Usable passband 39 MHz
- Unbalanced to unbalanced operation
- No matching required
- Filter impedance 50 Ω


**Features**

- Package size 3.0 x 3.0 x 1.1 mm<sup>3</sup>
- 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 °C to +80 °C
Terminating source impedance:	Z <sub>S</sub> = 50 Ω
Terminating load impedance:	Z <sub>L</sub> = 50 Ω

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	940.5	—	MHz
<b>Maximum insertion attenuation</b>	α <sub>max</sub>	—	2.7	4.0 <sup>1)</sup>	dB
921.0 ... 960.0 MHz					
<b>Amplitude ripple (p-p)</b>	Δα	—	1.4	3.0 <sup>2)</sup>	dB
921.0 ... 960.0 MHz					
<b>Input VSWR</b>		—	2.3:1	3.0:1 <sup>3)</sup>	
921.0 ... 960.0 MHz					
<b>Output VSWR</b>		—	2.6:1	3.0:1 <sup>4)</sup>	
921.0 ... 960.0 MHz					
<b>Absolute attenuation</b>	α <sub>abs</sub>				
0.3 <sup>5)</sup> ... 800.0 MHz		25	47	—	dB
800.0 ... 880.0 MHz		26	39	—	dB
880.0 ... 905.0 MHz		20 <sup>6)</sup>	31	—	dB
905.0 ... 915.0 MHz		2 <sup>7)</sup>	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 °C to +85 °C
Terminating source impedance:	Z <sub>S</sub> = 50 Ω
Terminating load impedance:	Z <sub>L</sub> = 50 Ω

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	f <sub>C</sub>	—	940.5	—	MHz
<b>Maximum insertion attenuation</b> 921.0 ... 960.0 MHz	α <sub>max</sub>	—	2.7	4.5 <sup>1)</sup>	dB
<b>Amplitude ripple (p-p)</b> 921.0 ... 960.0 MHz	Δα	—	1.4	3.2 <sup>2)</sup>	dB
<b>Input VSWR</b> 921.0 ... 960.0 MHz		—	2.3:1	3.0:1 <sup>3)</sup>	
<b>Output VSWR</b> 921.0 ... 960.0 MHz		—	2.6:1	3.0:1 <sup>4)</sup>	
<b>Absolute attenuation</b>	α <sub>abs</sub>				
0.3 <sup>5)</sup> ... 800.0 MHz		25	47	—	dB
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980.0 ... 985.0 MHz		23	42	—	dB
985.0 ... 1005.0 MHz		30	34	—	dB
1005.0 ... 1025.0 MHz		30	34	—	dB
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2000.0 ... 4000.0 MHz		18	23	—	dB

1) 3.0 dB at 25 °C.

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3) 2.8 at 25 °C.

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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 <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	5	V	
ESD voltage	V <sub>ESD</sub>	125 <sup>1)</sup>	V	Machine Model
		350 <sup>2)</sup>	V	Human Body Model
		1000 <sup>3)</sup>	V	Charged Device Model
Input power 921.0 ... 960.0 MHz	P <sub>IN</sub>	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

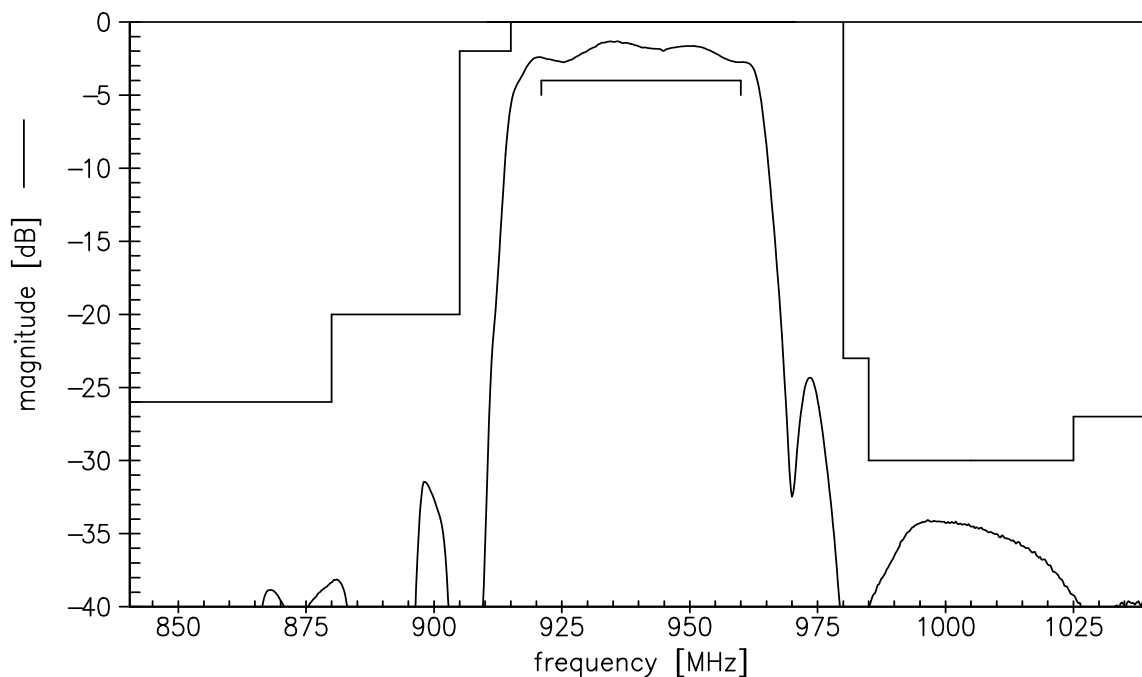
3) acc. to JESD22-C101C (CDM - Field Induced Charged Device Model), 3 negative & 3 positive pulses



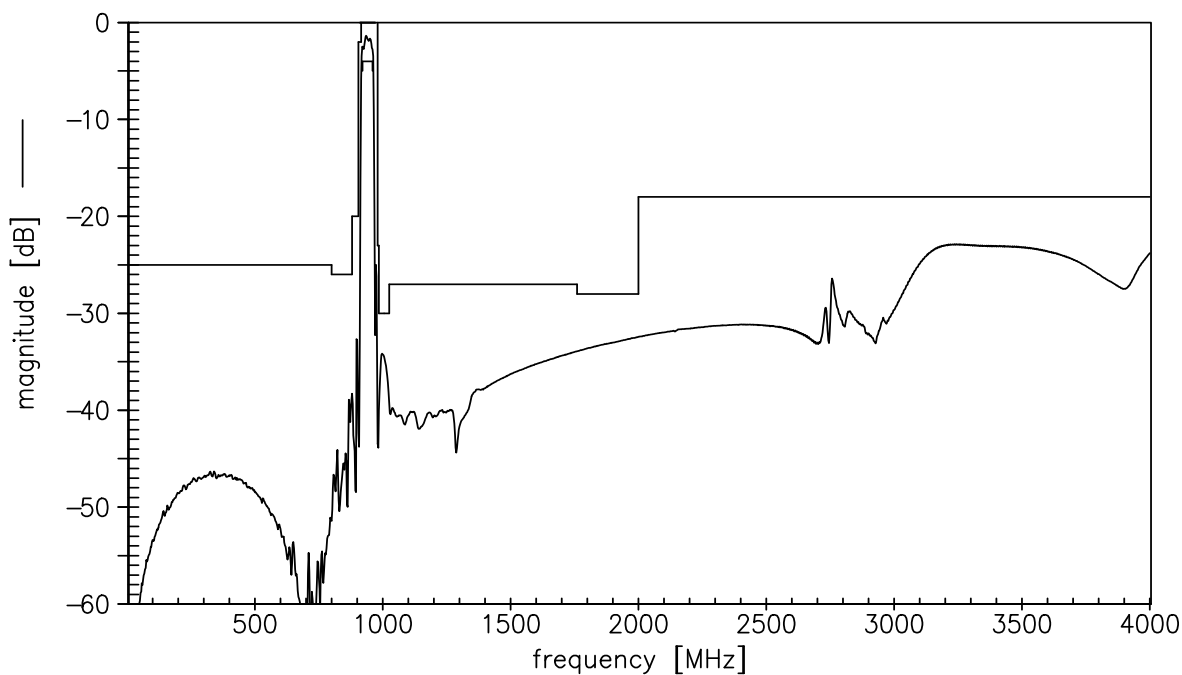
Data sheet



**Transfer function (S21, narrowband)**



**Transfer function (S21, wideband)**

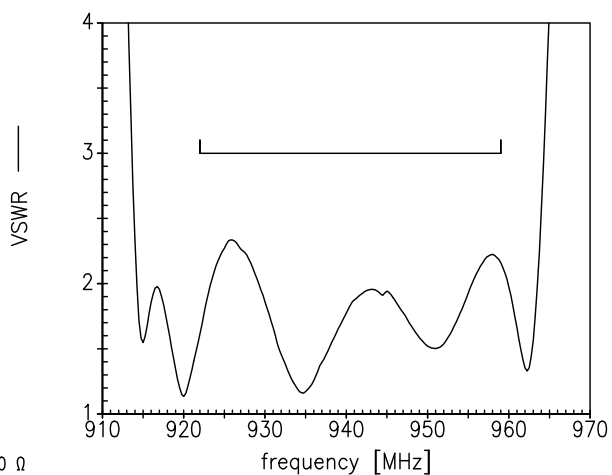
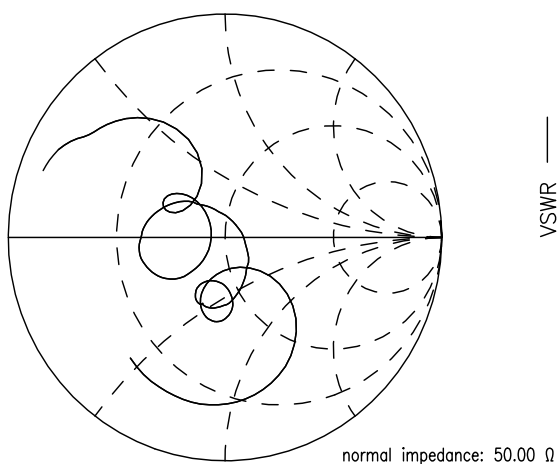


Data sheet

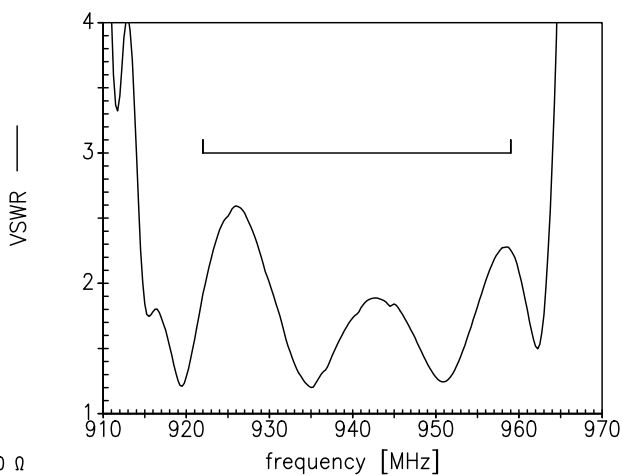
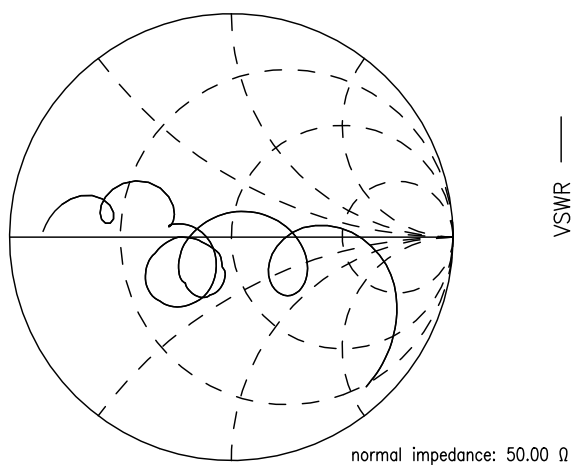
**SMD**

Smith charts

**S<sub>11</sub> function**



**S<sub>22</sub> function**



**References**

<b>Type</b>	B5057
<b>Ordering code</b>	B39941B5057U410
<b>Marking and package</b>	C61157-A7-A67
<b>Packaging</b>	F61074-V8168-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B5057_NB.s2p B5057_WB.s2p see file header for port/pin assignment table
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	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.
<b>Matching coils</b>	See Inductor pdf-catalog <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> and Data Library for circuit simulation <a href="http://www.tdk.co.jp/etvcl/index.htm">http://www.tdk.co.jp/etvcl/index.htm</a> for a large variety of matching coils.

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