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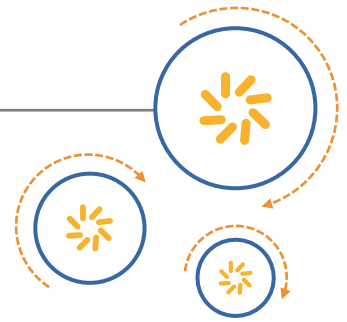
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RF360 Europe GmbH

A Qualcomm – TDK Joint Venture

## SAW Components

### SAW Rx Filter

GSM 900

Series/type:	B9853
Ordering code:	B39941B9853P810
Date:	December 01, 2010
Version:	2.0

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GSM 900

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<b>Ordering code:</b>	<b>B39941B9853P810</b>
<b>Date:</b>	<b>December 01, 2010</b>
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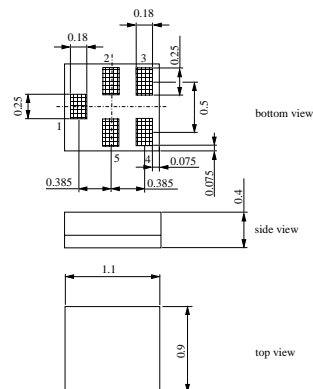
**Data Sheet**

**Application**

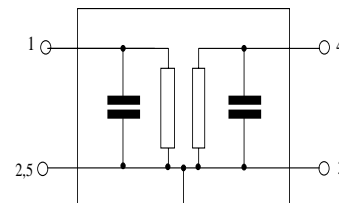
- Low-loss RF filter for mobile telephone GSM 900 systems, receive path (RX)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 35 MHz
- Impedance transform from 50 Ω to 150Ω
- Unbalanced to balanced operation
- Suitable for GPRS class 1 to 12


**Features**

- Package size 1.1 x 0.9 x 0.4 mm<sup>3</sup>
- RoHS compatible
- Approx. weight 0.001g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitive Level 3**


**Pin configuration**

- 1 Input, unbalanced
- 3,4 Output, balanced
- 2,5 Case-ground



**Data Sheet**

**Characteristics**

Operating temperature range:	$T = -20$ to $+75$ °C
Terminating source impedance:	$Z_S = 50\Omega$
Terminating load impedance:	$Z_L = 150\Omega \parallel 56nH$ (balanced)

		min.	typ. @ 25 °C	max.	
<b>Center frequency</b>	$f_C$	—	942.5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	2.0	2.5	dB
925.0 ... 960.0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1.0	1.5	dB
925.0 ... 960.0 MHz					
<b>Input VSWR</b>		—	1.8	2.0	
925.0 ... 960.0 MHz					
<b>Output VSWR</b>		—	1.8	2.0	
925.0 ... 960.0 MHz					
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )		-1.5	-1.1/1.1	1.5	dB
925.0 ... 960.0 MHz					
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^\circ$ )		-14	-10/10	14	°
925.0 ... 960.0 MHz					
<b>Attenuation</b>	$\alpha$				
0.3 ... 480.0 MHz		35	41	—	dB
480.0 ... 900.0 MHz		28	32	—	dB
900.0 ... 905.0 MHz		23	30	—	dB
905.0 ... 915.0 MHz		18	22	—	dB
980.0 ... 1000.0 MHz		20	23	—	dB
1000.0 ... 1850.0 MHz		23	25	—	dB
1850.0 ... 1920.0 MHz		35	41	—	dB
1920.0 ... 3700.0 MHz		30	34	—	dB
3700.0 ... 6000.0 MHz		17	22	—	dB

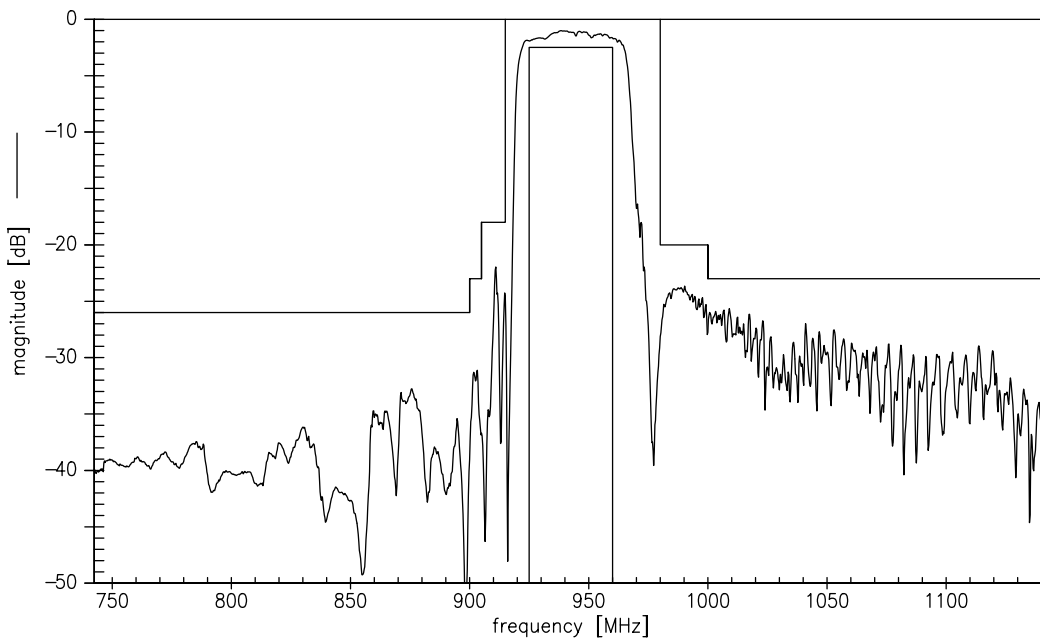

**Maximum ratings**

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>	100 <sup>1)</sup>	V	machine model, 1 pulse
Input Power at				
GSM850, GSM900	P <sub>IN</sub>	15	dBm	effective power in the on-state, duty cycle 4:8
GSM1800, GSM1900	P <sub>IN</sub>	15	dBm	
Tx bands				

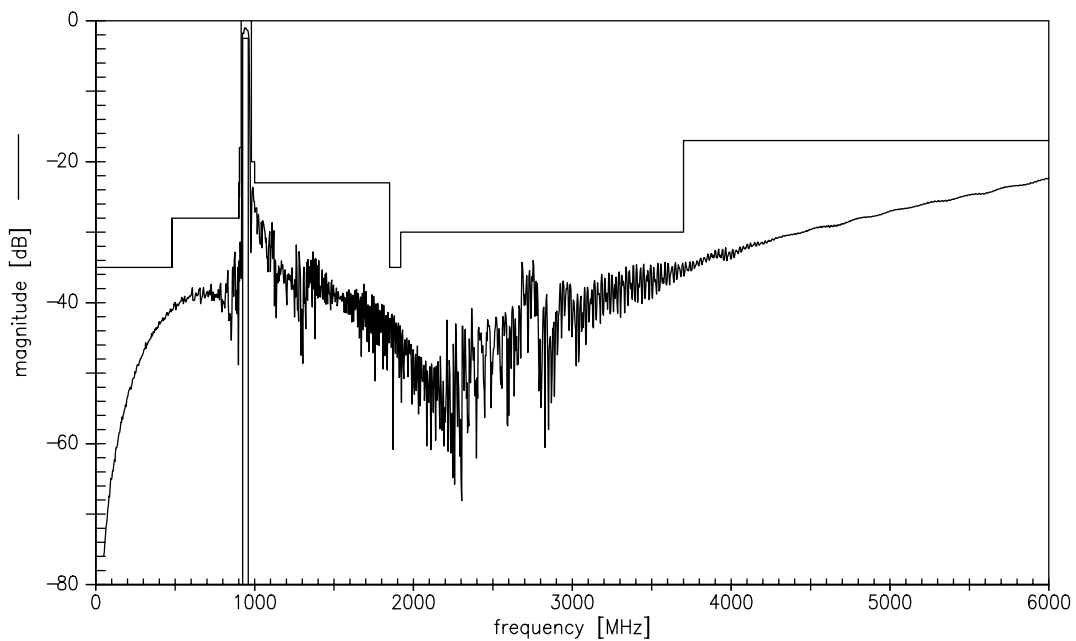
<sup>1)</sup> acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulses.



Transfer function (narrow band)



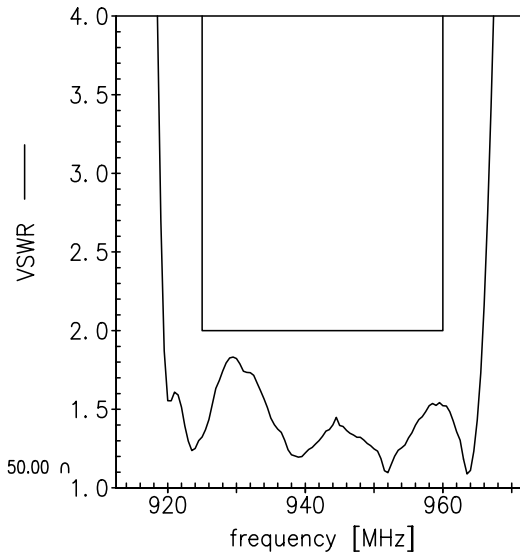
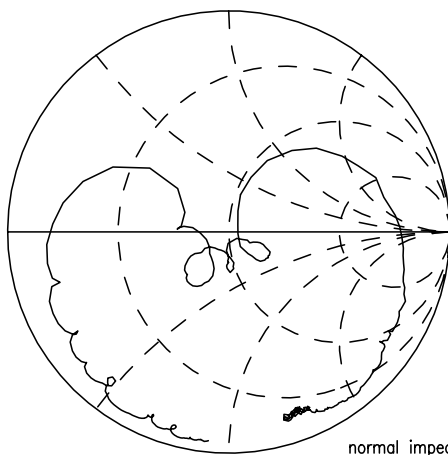
Transfer function (wide band)



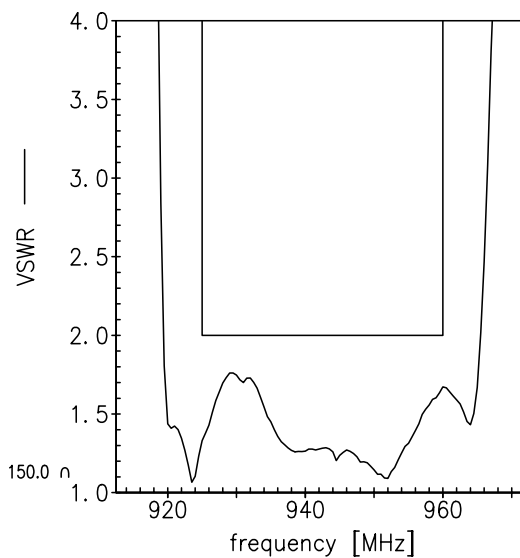
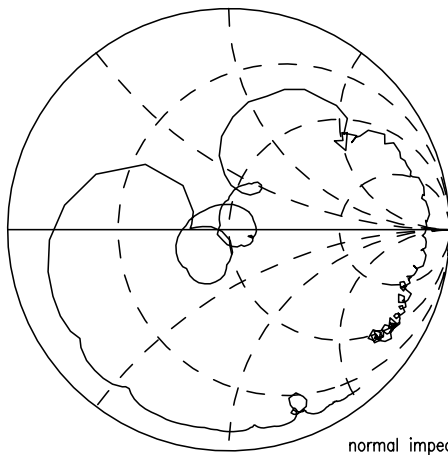




**S<sub>11</sub> function**



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



<b>SAW Components</b>	<b>B9853</b>
<b>SAW Rx Filter</b>	<b>942.5 MHz</b>
Data Sheet	

## References

<b>Type</b>	B9853
<b>Ordering code</b>	B39941B9853P810
<b>Marking and package</b>	C61157-A8-A30
<b>Packaging</b>	F61074-V8255-Z000
<b>Date codes</b>	L_1126
<b>S-parameters</b>	B9853_NB.s3p, B9853_WB.s3p See file header for port/pin assignment table
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."
<b>Moldability</b>	Before using in overmolding environment, please contact your EPCOS sales office.
<b>Matching coils</b>	See <a href="http://www.tdk.co.jp/tefe02/coil.htm#aname1">http://www.tdk.co.jp/tefe02/coil.htm#aname1</a> <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.

For further information please contact your local EPCOS sales office or visit our webpage at [www.epcos.com](http://www.epcos.com).

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