



SAW Components

SAW Rx Filter

GSM 900

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

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B9853

SAW Rx Filter

942.5 MHz

Data Sheet



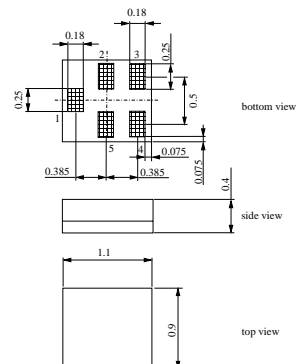
Application

- 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 150 Ω
- Unbalanced to balanced operation
- Suitable for GPRS class 1 to 12



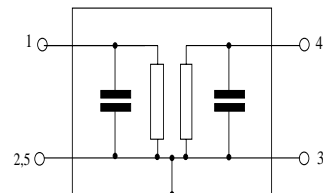
Features

- Package size 1.1 x 0.9 x 0.4 mm³
- 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



Please read *cautions and warnings and important notes* at the end of this document.



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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.	
Center frequency	f_C	—	942.5	—	MHz
Maximum insertion attenuation	α_{max}	—	2.0	2.5	dB
925.0 ... 960.0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1.0	1.5	dB
925.0 ... 960.0 MHz					
Input VSWR		—	1.8	2.0	
925.0 ... 960.0 MHz					
Output VSWR		—	1.8	2.0	
925.0 ... 960.0 MHz					
Output amplitude balance ($ S_{31}/S_{21} $)		-1.5	-1.1/1.1	1.5	dB
925.0 ... 960.0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-14	-10/10	14	°
925.0 ... 960.0 MHz					
Attenuation	α				
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

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**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}	100 ¹⁾	V	machine model, 1 pulse
Input Power at				
GSM850, GSM900	P _{IN}	15	dBm	effective power in the on-state, duty cycle 4:8
GSM1800, GSM1900	P _{IN}	15	dBm	
Tx bands				

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



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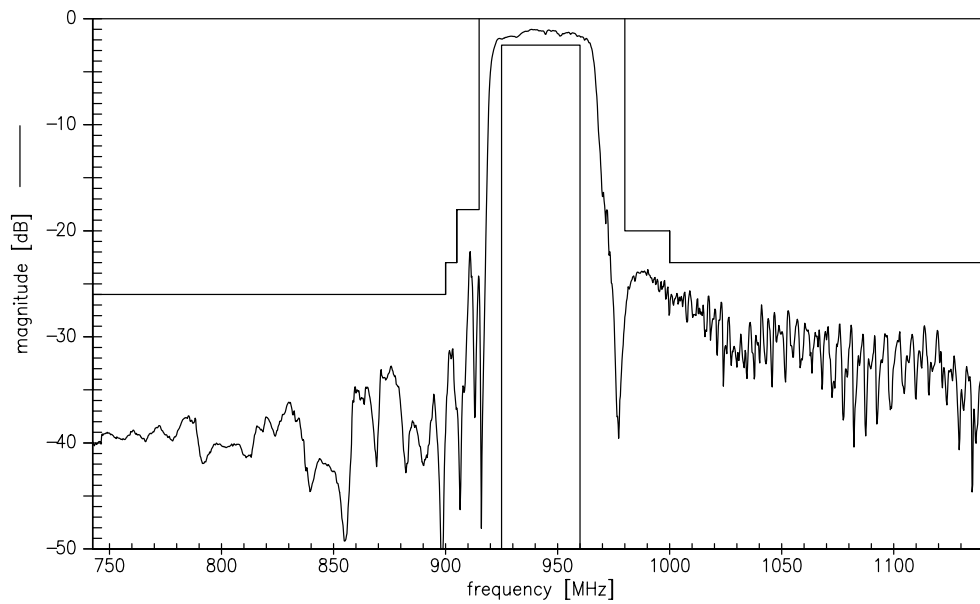
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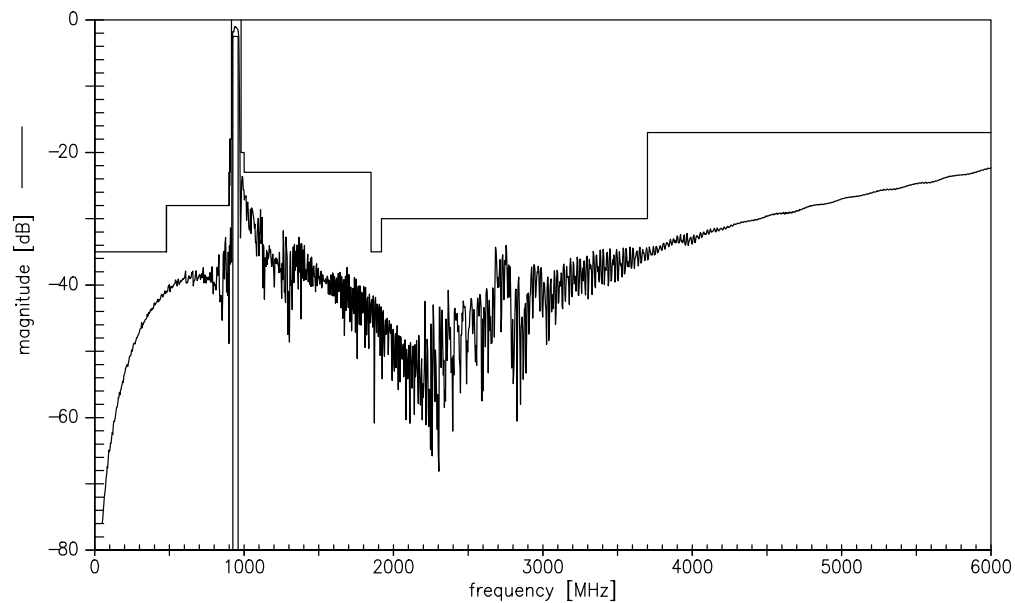
Data Sheet



Transfer function (narrow band)

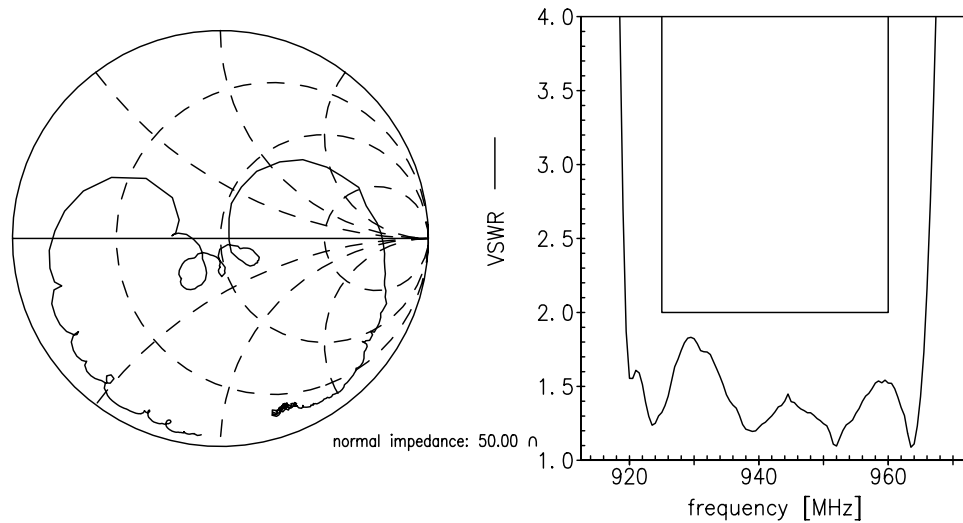


Transfer function (wide band)

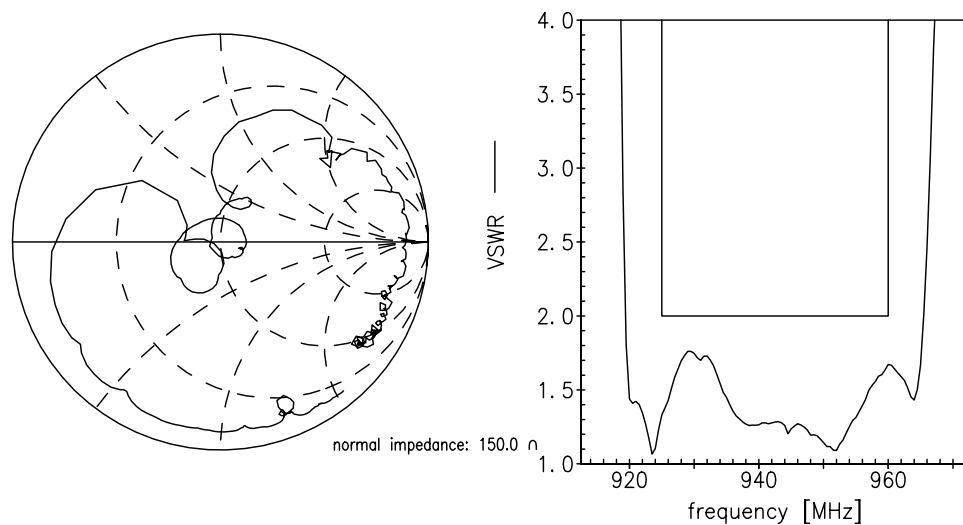


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S_{11} function



S_{22} function



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**References**

Type	B9853
Ordering code	B39941B9853P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B9853_NB.s3p, B9853_WB.s3p See file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	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."
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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.

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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