



SAW Components

SAW Rx Filter

GSM 850

Series/type: B9851
Ordering code: B39881B9851P810

Date: October 11, 2010
Version: 2.0



Data sheet



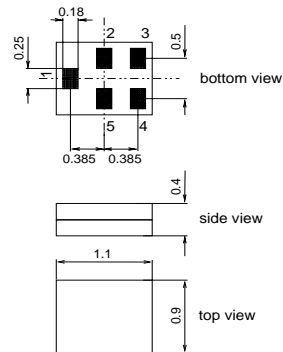
Application

- Low-loss RF filter for mobile telephone GSM 850 systems, receive path (Rx)
- Low insertion attenuation
- Low amplitude ripple
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 150 Ω
- Suitable for GPRS class 1 to 12



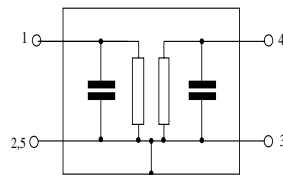
Features

- Package size 1.1x0.9x0.4 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

Temperature range for specification: $T = -20\text{ °C to }+75\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150\ \Omega \parallel 82\text{nH}$ (balanced)

		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	881.5	—	MHz
Maximum insertion attenuation	α_{\max}				
869.0 ... 894.0 MHz		—	1.5	2.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869.0 ... 894.0 MHz		—	0.5	1.2	dB
Input VSWR					
869.0 ... 894.0 MHz		—	1.6	2.0	
Output VSWR					
869.0 ... 894.0 MHz		—	1.6	2.0	
CMRR ($S_{21}-S_{31} / S_{21}+S_{31}$)					
869.0 ... 894.0 MHz		18 ¹⁾	24	—	dB
Attenuation	α				
10.0 ... 447.0 MHz		45	49	—	dB
447.0 ... 849.0 MHz		30	36	—	dB
914.0 ... 954.0 MHz		21	27	—	dB
954.0 ... 1738.0 MHz		28	36	—	dB
1738.0 ... 1788.0 MHz		40	52	—	dB
1788.0 ... 3476.0 MHz		35	42	—	dB
3476.0 ... 6000.0 MHz		26	38	—	dB

¹⁾ A CMRR of 17.3dB corresponds to a phase balance of 12° together with an amplitude balance of 1.5dB



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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				
GSM 850, GSM 900	P _{IN}	15	dBm	effective power in the on-state, duty cycle 4:8
GSM 1800, GSM 1900	P _{IN}	15	dBm	
Tx bands				

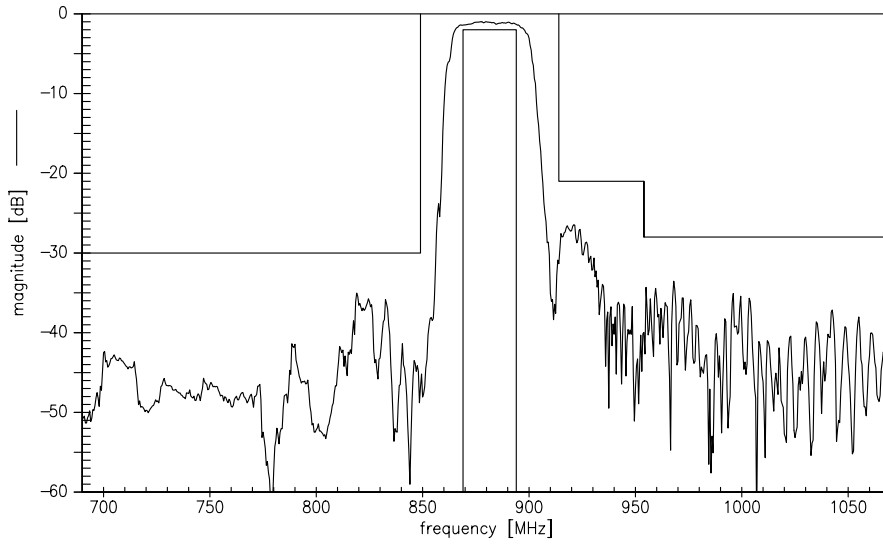
¹⁾ acc. to JESD22-A115A (machine model), 1 negative & 1 positive pulse.



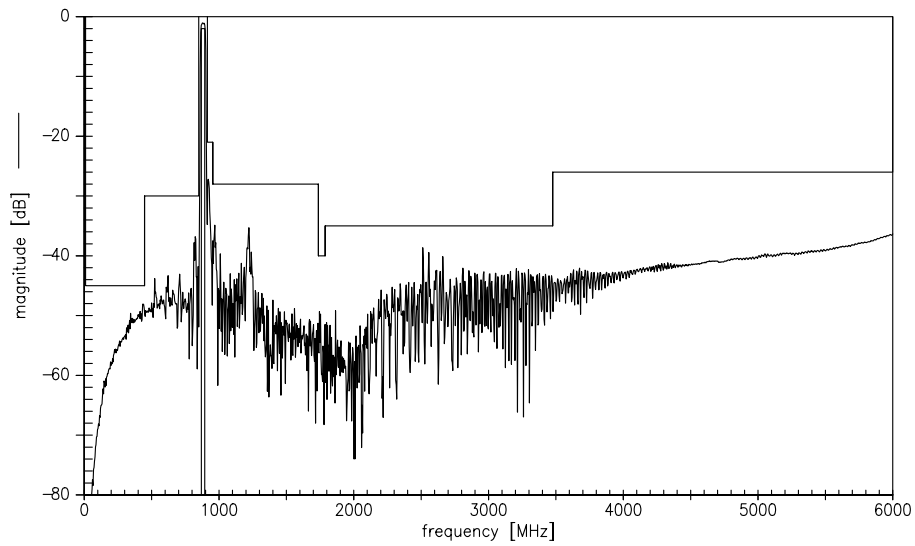
Data sheet



Transfer function (narrowband)



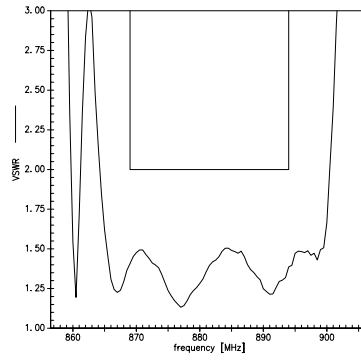
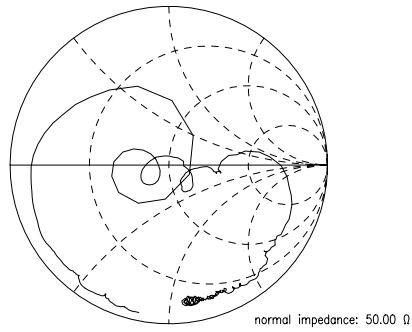
Transfer function (wideband)



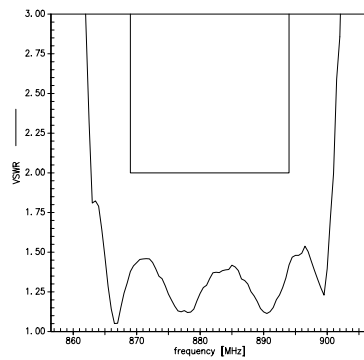
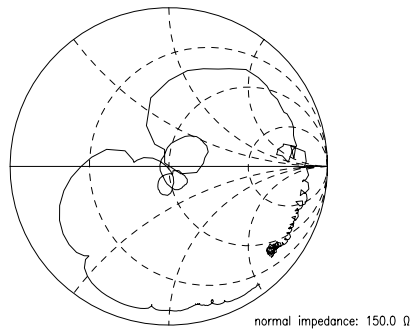
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S₁₁ function



S₂₂ function



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References

Type	B9851
Ordering code	B39881B9851P810
Marking and package	C61157-A8-A30
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B9851_NB.s3p B9851_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.

Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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



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