



SAW Components

SAW Rx filter

Automotive telematics

Series/type:	B4305
Ordering code:	B39202B4305F210
Date:	April 5, 2011
Version:	2.0

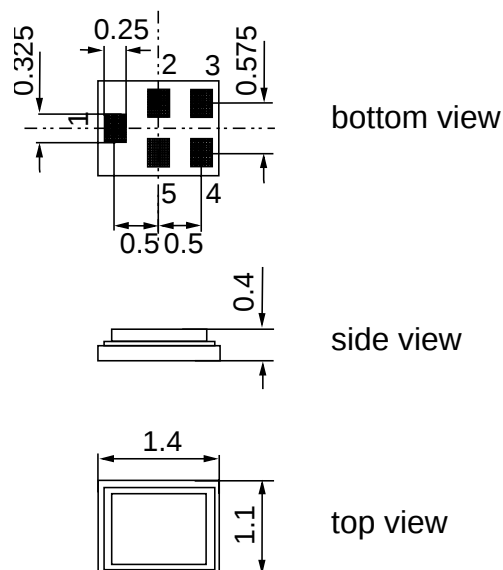
Data sheet

Application

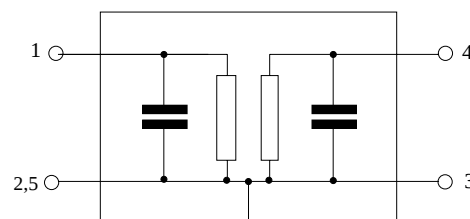
- Low-loss RF filter for mobile telephone PCS systems, receive path (RX)
- Impedance transform from 50 Ω to 150 Ω
- Unbalanced to balanced operation
- Very low insertion attenuation
- Low amplitude ripple
- Usable passband 60 MHz
- Suitable for GPRS class 1 to 12


Features

- Package size 1.4 x 1.1 x 0.4 mm³
- Package code QCS5M
- RoHS compatible
- Approximate weight 0.003 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- AEC-Q200 qualified component family (operable temperature range -40°C to +85°C)
- **Electrostatic Sensitive Device (ESD)**


Pin configuration

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



Data sheet

Characteristics

Operating temperature range: $T = -20$ to $+75$ °C
 Terminating source impedance: $Z_S = 50\Omega$
 Terminating load impedance: $Z_L = 150\Omega \parallel 15$ nH (balanced)

		min.	typ. @ 25°C	max.	
Center frequency	f_C	—	1960	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	1.7	2.6	dB
1930.0 ... 1990.0 MHz		—	1.7	2.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0.7	1.7	dB
1930.0 ... 1990.0 MHz		—	0.7	1.7	dB
VSWR		—	1.7	2.4	
1930.0 ... 1990.0 MHz		—	1.7	2.4	
CMRR ($S_{21}-S_{31} / S_{21}+S_{31}$)		19 ¹⁾	26	—	dB
1930.0 ... 1990.0 MHz		19 ¹⁾	26	—	dB
Attenuation	α				
0.0 ... 1500.0 MHz		40	44	—	dB
1500.0 ... 1830.0 MHz		30	37	—	dB
1830.0 ... 1850.0 MHz		26	32	—	dB
1850.0 ... 1890.0 MHz		23	28	—	dB
1890.0 ... 1910.0 MHz		11	18	—	dB
2010.0 ... 2070.0 MHz		4 ²⁾	14	—	dB
2070.0 ... 2400.0 MHz		26	30	—	dB
2400.0 ... 2500.0 MHz		34	40	—	dB
2500.0 ... 3860.0 MHz		28	33	—	dB
3860.0 ... 3980.0 MHz		40	49	—	dB
3980.0 ... 5790.0 MHz		28	41	—	dB
5790.0 ... 6000.0 MHz		34	42	—	dB

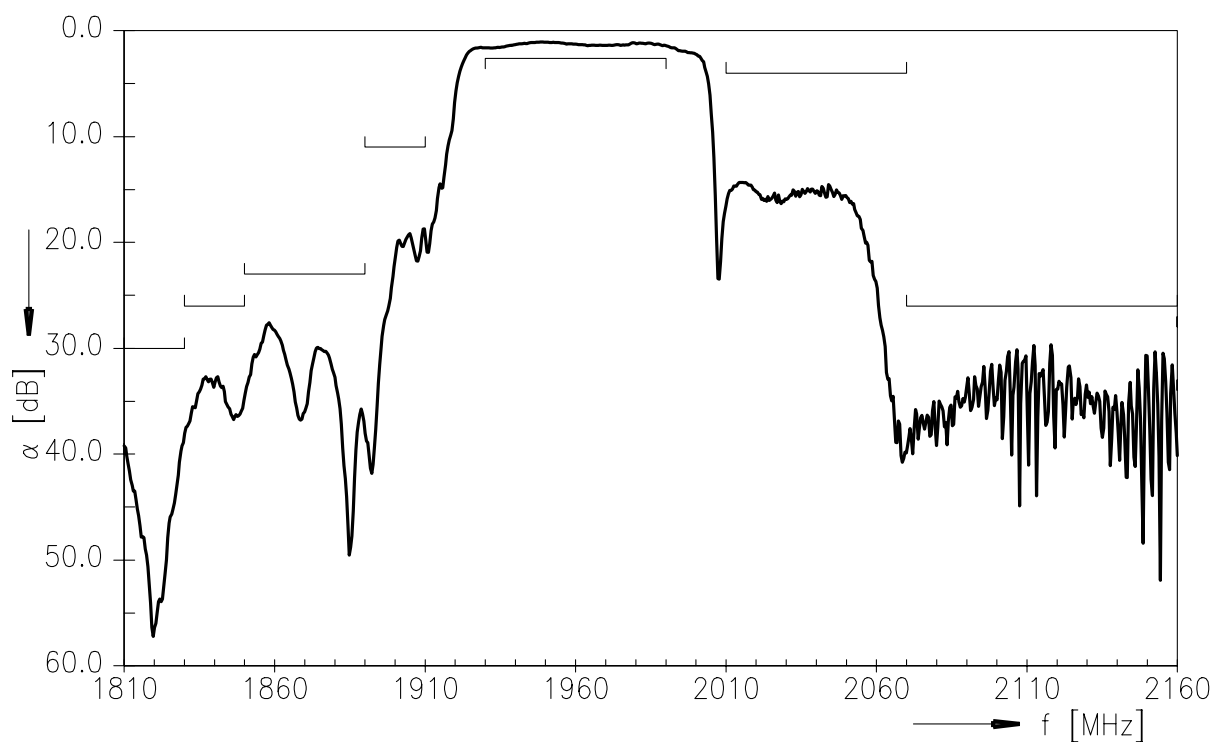
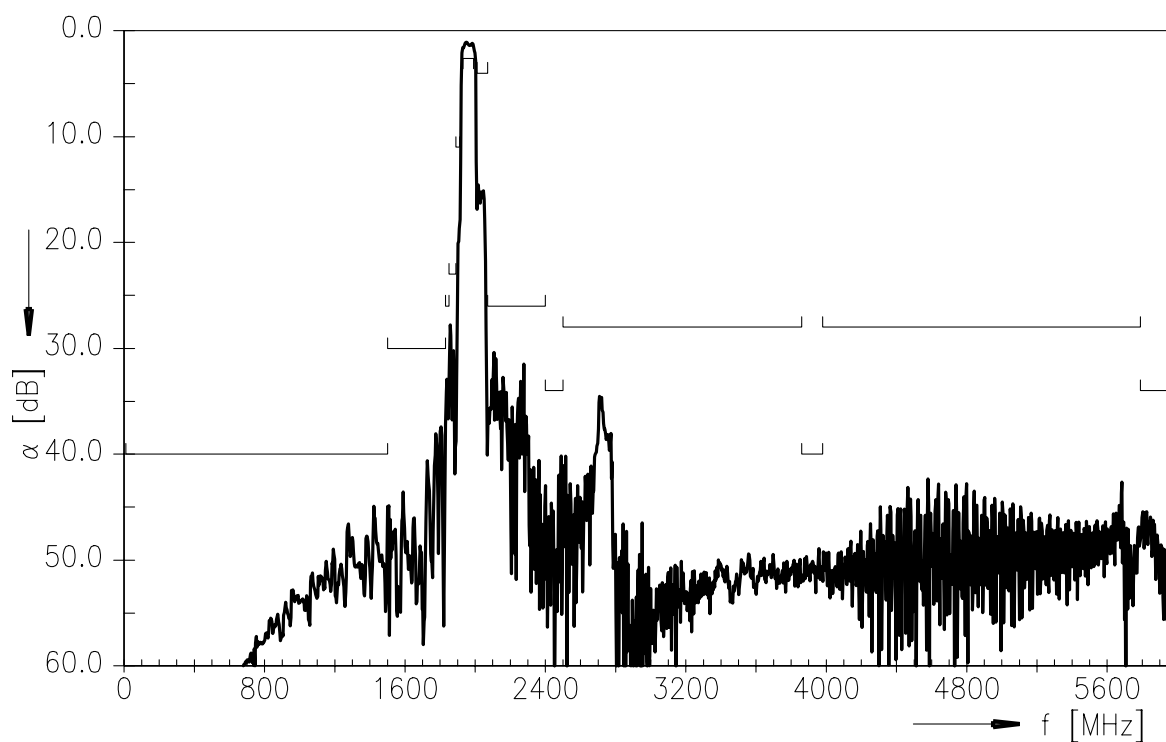
¹⁾ A CMRR of 19.6 dB corresponds to a phase imbalance of $\pm 10^\circ$ together with an amplitude imbalance of ± 1.0 dB.

²⁾ 11.5dB at 25°C

Maximum ratings

Operable temperature range	T	−40/+85	°C	
Storage temperature range	T _{stg}	−40/+85	°C	
DC voltage	V _{DC}	0	V	
ESD voltage	V _{ESD}	50 ¹⁾	V	machine model, 10 pulses
Input Power at				
GSM850, GSM900	P _{IN}	15	dBm	peak power of GSM signal,
GSM1800, GSM1900	P _{IN}	15	dBm	duty cycle 4:8
Tx bands				

¹⁾ acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.

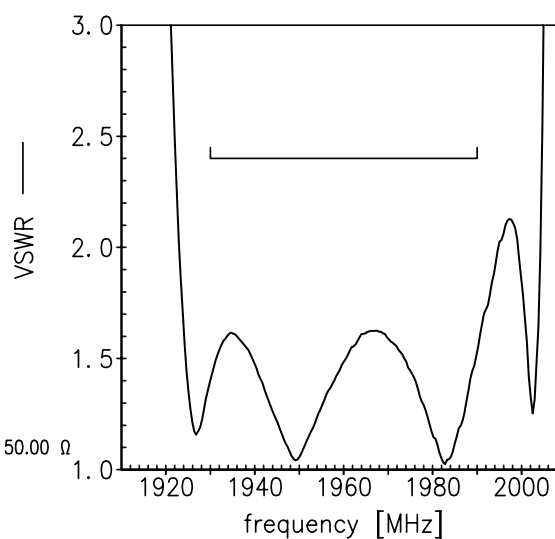
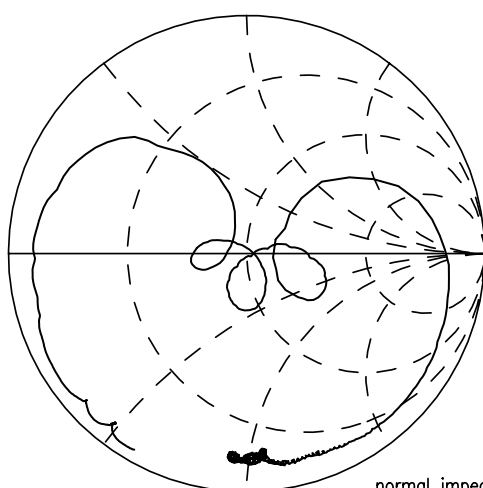
Transfer function

Transfer function (wideband)


Data sheet

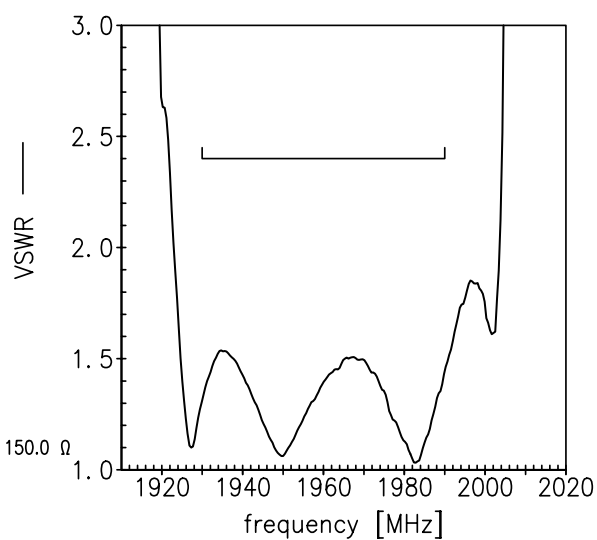
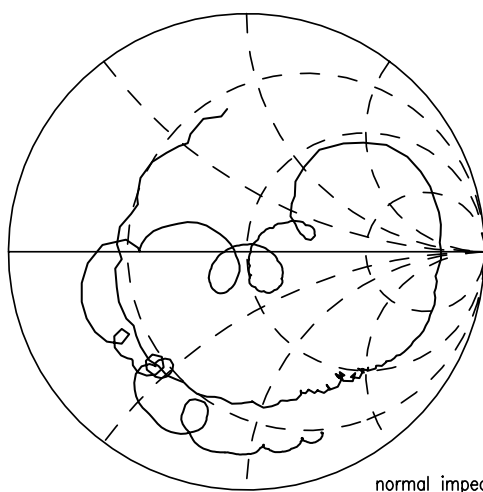


Smith chart

S_{11} function



S_{22} function



References

Type	B4305
Ordering code	B39202B4305F210
Marking and package	C61157-A8-A8
Packaging	F61074-V8212-Z000
Date codes	L_1126
S-parameters	B4305_NB.s3p, B4305_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 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

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Published by EPCOS AG

Systems, Acoustics, Waves Business Group

P.O. Box 80 17 09, 81617 Munich, GERMANY

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