SAW Components

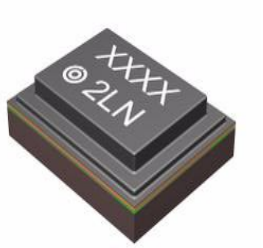
SAW Rx filter

Automotive telematics

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

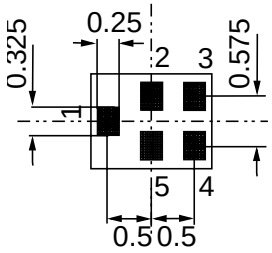
Application

- 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

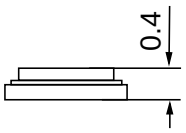


Features

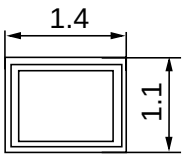
- Package size 1.4 x1.1 x 0.4 mm³
- Package code QCS5M
- RoHS compatible
- Approximate weight 0.003 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- AEC-Q200 qualified component family (operable temperature range –40˚C to +85˚C)
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)



bottom view



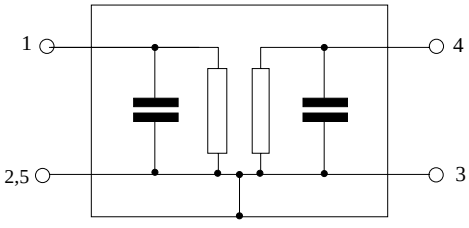
side view



top view

Pin configuration

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



Data sheet SMD

Characteristics

Operating temperature range: T = –20 to +75 ˚C
Terminating source impedance: Z_S = 50Ω
Terminating load impedance: Z_L = 150 Ω || 15 nH (balanced)

		min.	typ. @ 25˚C	max.	
Center frequency	f_C	—	1960	—	MHz
Maximum insertion attenuation	α_{max}				
1930.0 ... 1990.0 MHz		—	1.7	2.6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930.0 ... 1990.0 MHz		—	0.7	1.7	dB
VSWR					
1930.0 ... 1990.0 MHz		—	1.7	2.4	
CMRR ($\lvert S_{21}-S_{31}\rvert$ / $\lvert S_{21}+S_{31}\rvert$)					
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

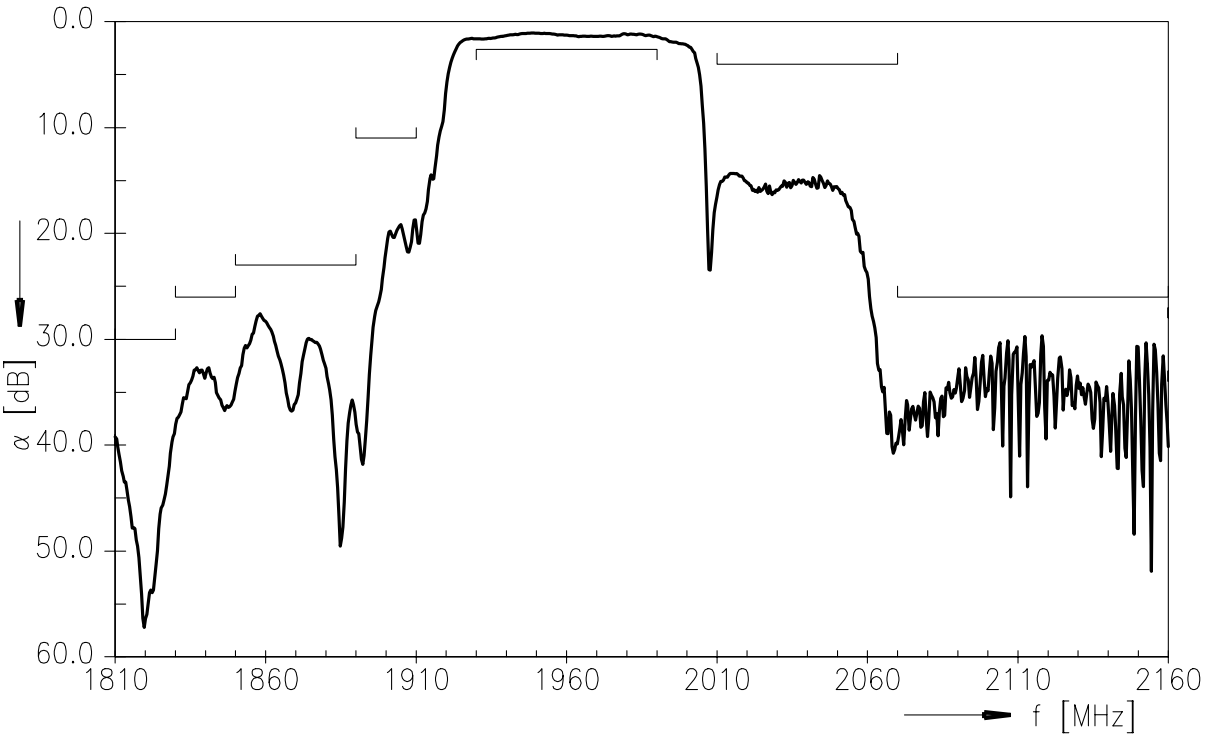
1) A CMRR of 19.6 dB corresponds to a phase imbalance of ±10˚ together with an amplitude imbalance of ±1.0 dB.
2) 11.5dB at 25˚C

Maximum ratings

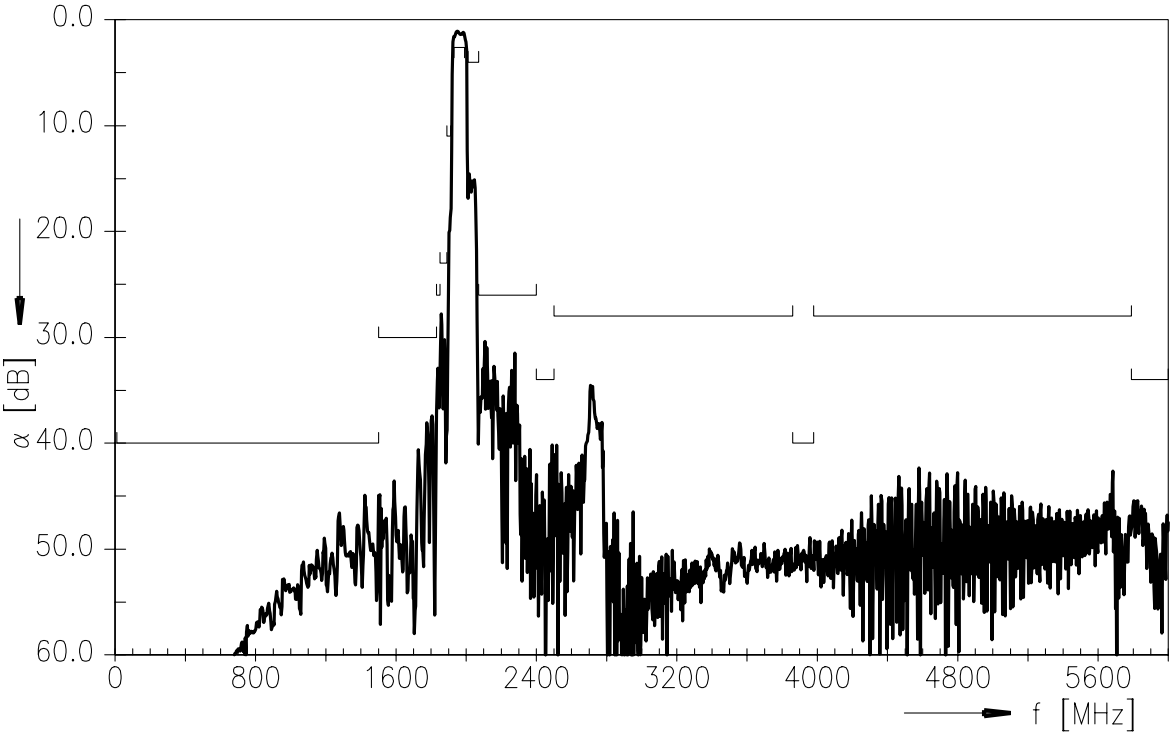
Operable temperature range	T	–40/+85	˚C	
Storage temperature range	T_{stg}	–40/+85	˚C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	50[1)]	V	machine model, 10 pulses
Input Power at				
GSM850, GSM900	P_{IN}	15	dBm	peak power of GSM signal,
GSM1800, GSM1900	P_{IN}	15	dBm	duty cycle 4:8
Tx bands				

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

Transfer function

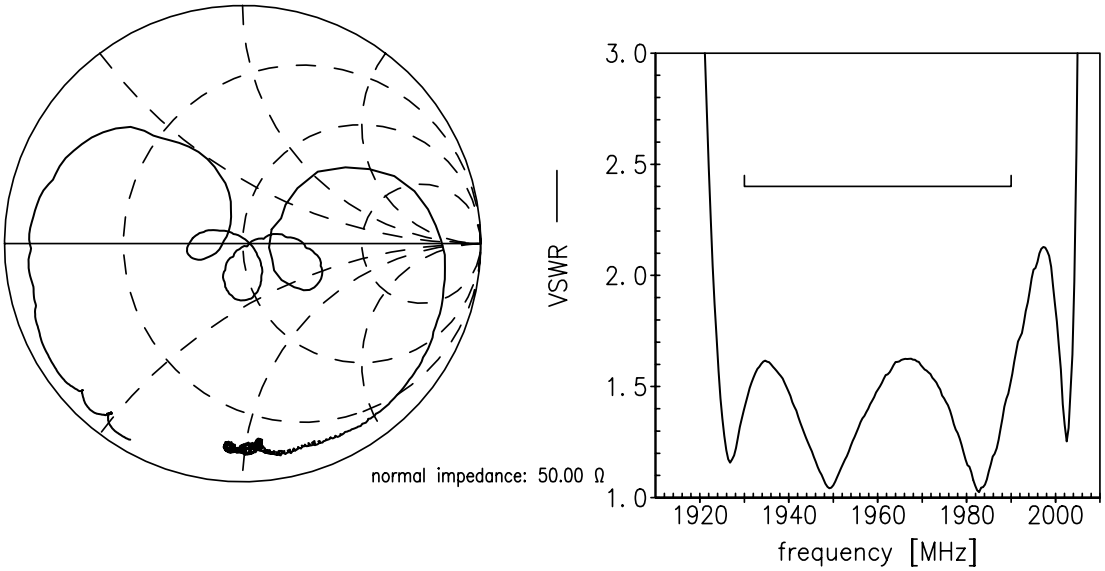


Transfer function (wideband)

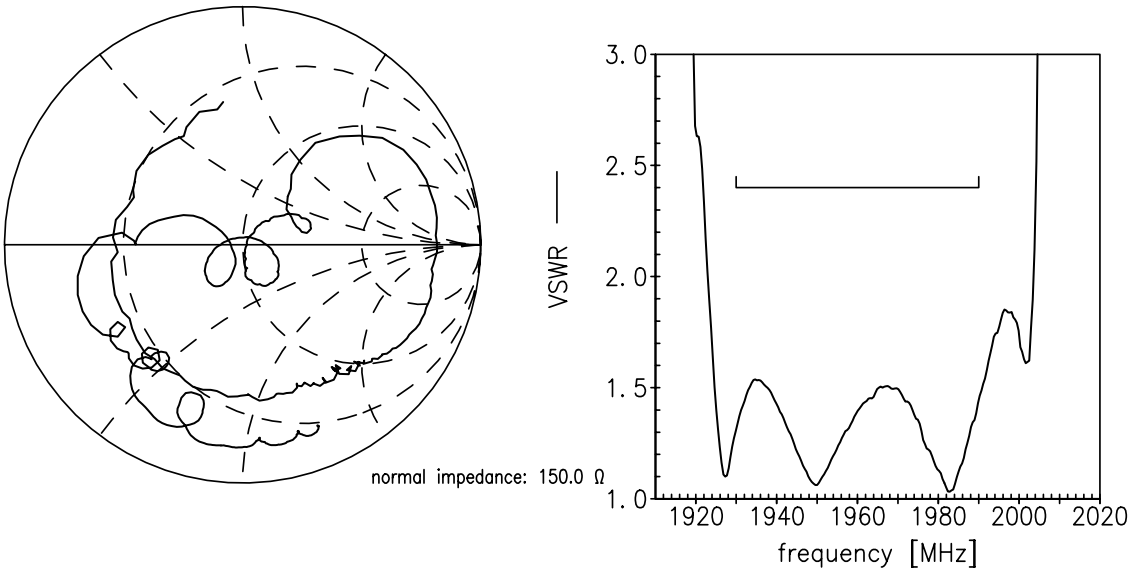


Smith chart

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."
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