EPCOS

SAW Components

Data Sheet B9001

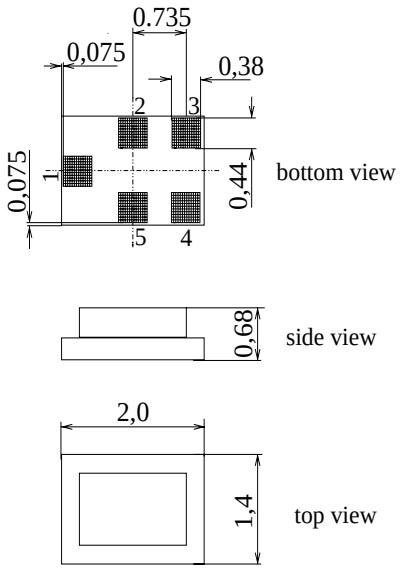
Features

- Low-loss RF filter for mobile telephone GSM850/AMPS system, receive path
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 150 Ω or 50 Ω to 200 Ω optional
- Suitable for GPRS class 1 to12
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)

Terminals

- Ni, gold-plated

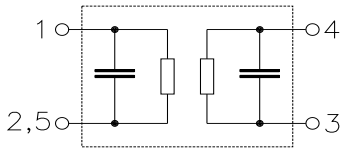
Chip sized SAW package QCS5C



Dimensions in mm, approx. weight 0,007g

Pin configuration

1	Unbalanced input
3, 4	Balanced output
2, 5	To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B9001	B39881-B9001-C710	C61157-A7-A111	F61074-V8151-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	– 30 / + 85	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	5	V	
ESD	V_{ESD}	250	V	HBM
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	P_{IN}	16	dBm	peak power of GSM signal, duty cycle 4:8

Data Sheet SMD

Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0 ... 894,0 MHz		—	1,7	2,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,5	0,8	dB
Input return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 840,0 MHz		45	52	—	dB
840,0 ... 849,0 MHz		35	40	—	dB
914,0 ... 940,0 MHz		24	27	—	dB
940,0 ...6000,0 MHz		45	55	—	dB

Characteristics

Operating temperature range: T = -30 to +85 °C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 150 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0 ... 894,0 MHz		—	1,9	2,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,7	1,3	dB
Input return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 840,0 MHz		45	52	—	dB
840,0 ... 849,0 MHz		35	40	—	dB
914,0 ... 940,0 MHz		24	27	—	dB
940,0 ...6000,0 MHz		45	55	—	dB

Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 200 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0 ... 894,0 MHz		—	1,9	2,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,7	1,0	dB
Input return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output return loss					
869,0 ... 894,0 MHz		10,0	12,0	—	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 840,0 MHz		45	52	—	dB
840,0 ... 849,0 MHz		35	40	—	dB
914,0 ... 940,0 MHz		24	26	—	dB
940,0 ...6000,0 MHz		45	55	—	dB

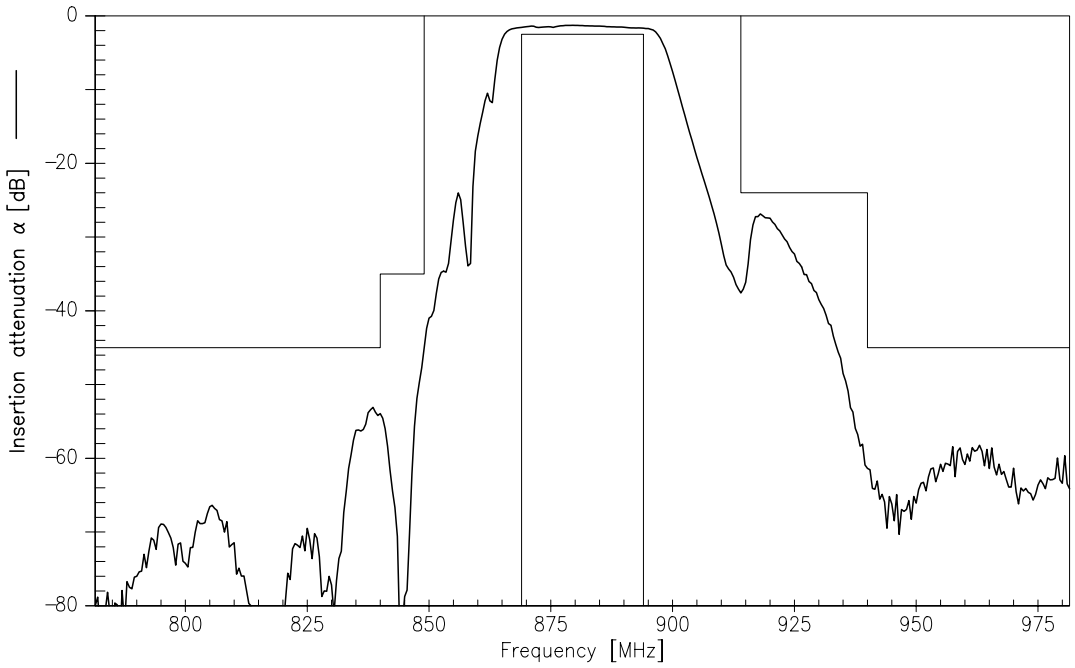
Data Sheet SMD

Characteristics

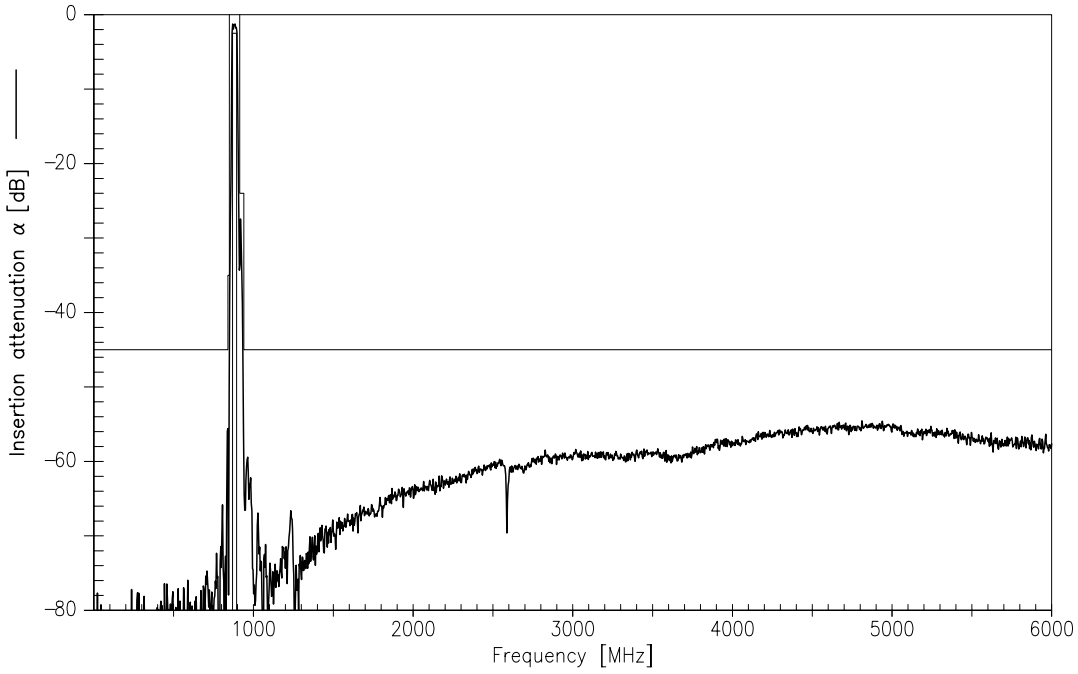
Operating temperature range: T = -30 to +85 °C
Terminating source impedance: Z_S = 50 Ω (unbalanced)
Terminating load impedance: Z_L = 200 Ω (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0 ... 894,0 MHz		—	2,1	2,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,9	1,3	dB
Input return loss					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
Output return loss					
869,0 ... 894,0 MHz		10,0	12,0	—	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 840,0 MHz		45	52	—	dB
840,0 ... 849,0 MHz		35	40	—	dB
914,0 ... 940,0 MHz		24	26	—	dB
940,0 ...6000,0 MHz		45	55	—	dB

Transfer function (narrowband; 50 Ω to 150 Ω operation)

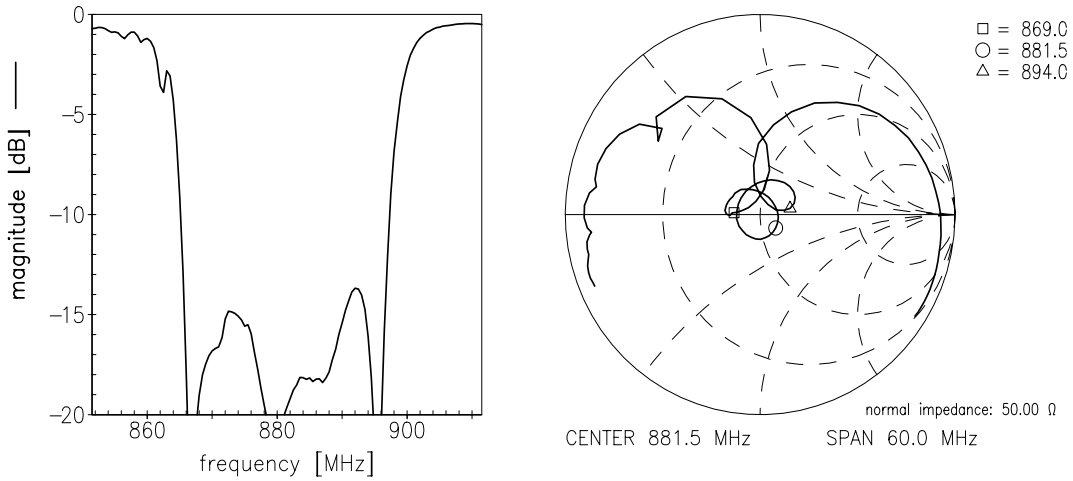


Transfer function (wideband; 50 Ω to 150 Ω operation)

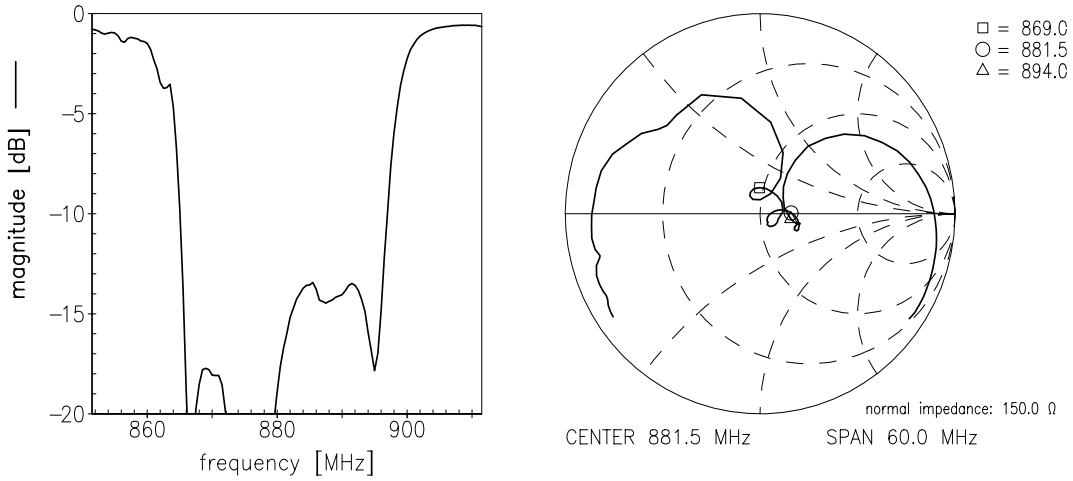


Matching (measurement; 50 Ω to 150 Ω operation)

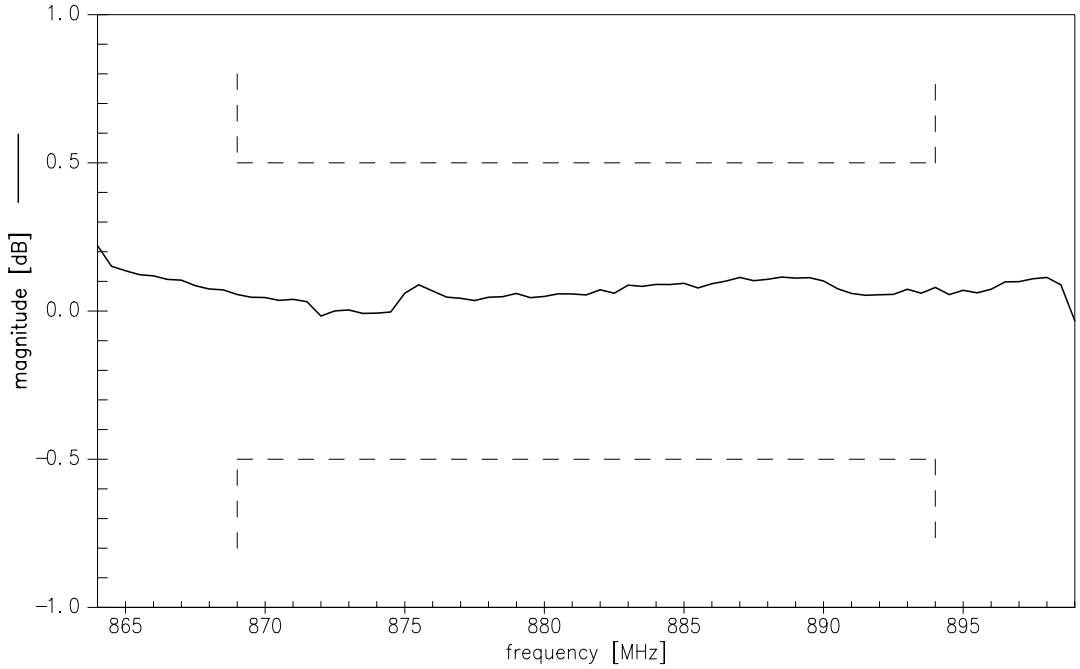
S_{11}



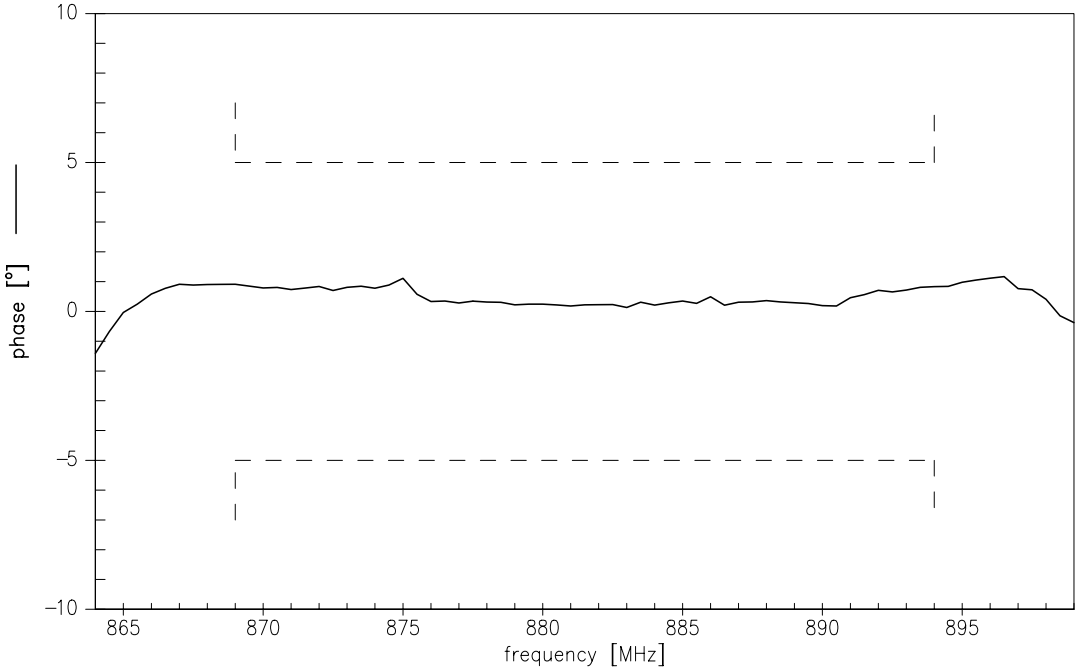
S_{22}



Output amplitude balance ($|S_{31}/S_{21}|$; 50 Ω to 150 Ω operation)



Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$; 50 Ω to 150 Ω operation)



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