



SAW Components

Data Sheet B9001





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Low-Loss Filter for Mobile Communication

881,5 MHz

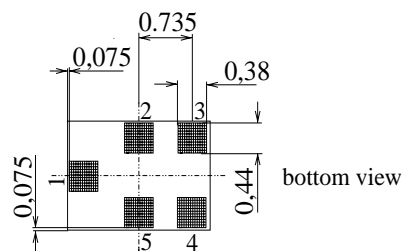
Data Sheet



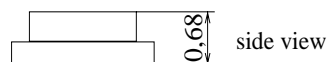
Chip sized SAW package QCS5C

Features

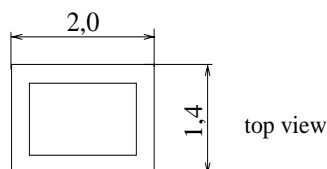
- Low-loss RF filter for mobile telephone GSM850/AMPS system, receive path
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 150 Ω or 50 Ω to 200 Ω optional
- Suitable for GPRS class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



bottom view



side view



top view

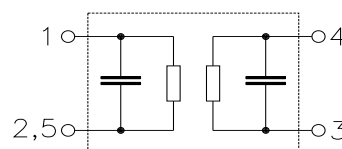
Terminals

- Ni, gold-plated

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 Sensitive Device (ESD)

Maximum ratings

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



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Characteristics

Operating temperature range:	$T = +25\text{ °C}$
Terminating source impedance:	$Z_S = 50\ \Omega$ (unbalanced)
Terminating load impedance:	$Z_L = 150\ \Omega$ (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 ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
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


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Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$ (unbalanced)
 Terminating load impedance: $Z_L = 150 \Omega$ (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 ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
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



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Characteristics

Operating temperature range:	$T = +25\text{ °C}$
Terminating source impedance:	$Z_S = 50\ \Omega$ (unbalanced)
Terminating load impedance:	$Z_L = 200\ \Omega$ (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 ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
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



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Operating temperature range: $T = -30$ to $+85$ °C
Terminating source impedance: $Z_S = 50 \Omega$ (unbalanced)
Terminating load impedance: $Z_L = 200 \Omega$ (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 ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
869,0 ... 894,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
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



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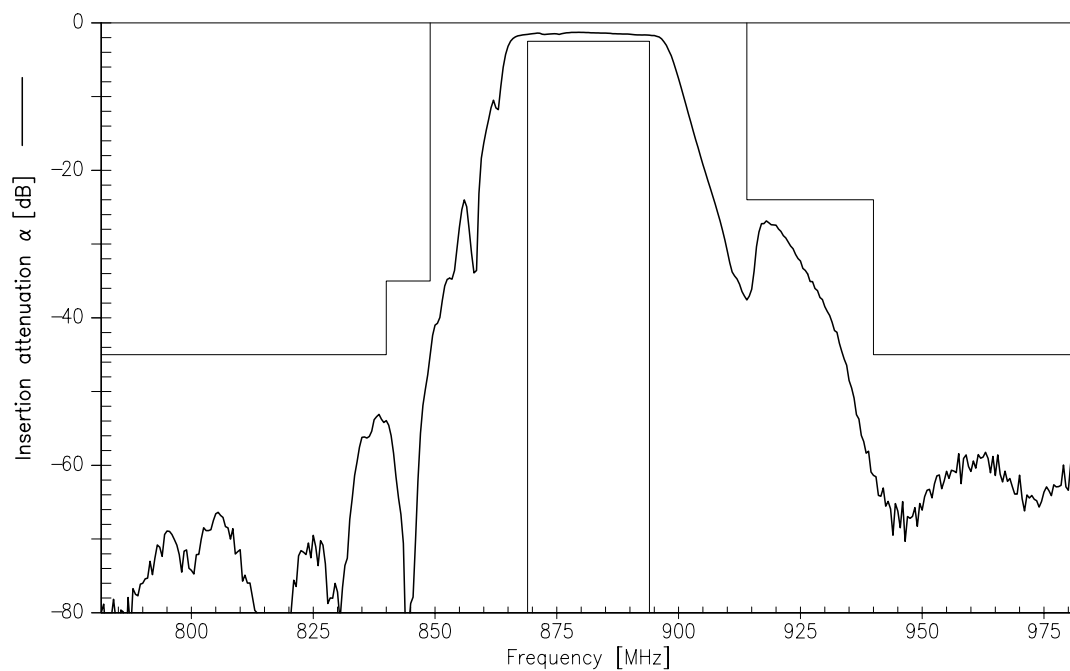
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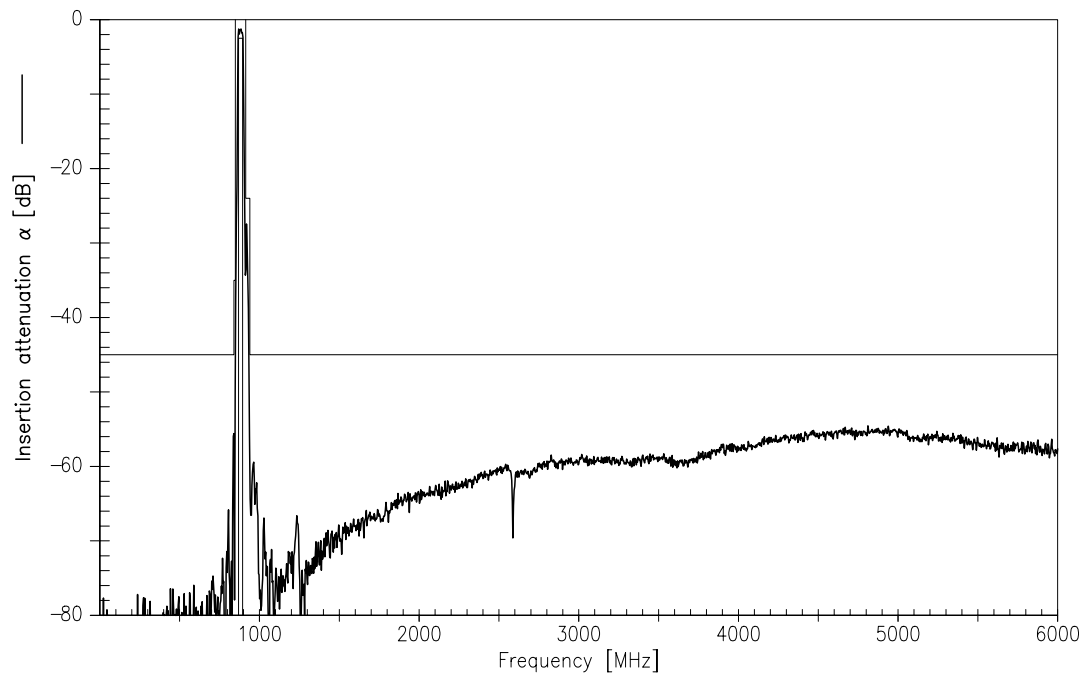
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Transfer function (narrowband; 50 Ω to 150 Ω operation)



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





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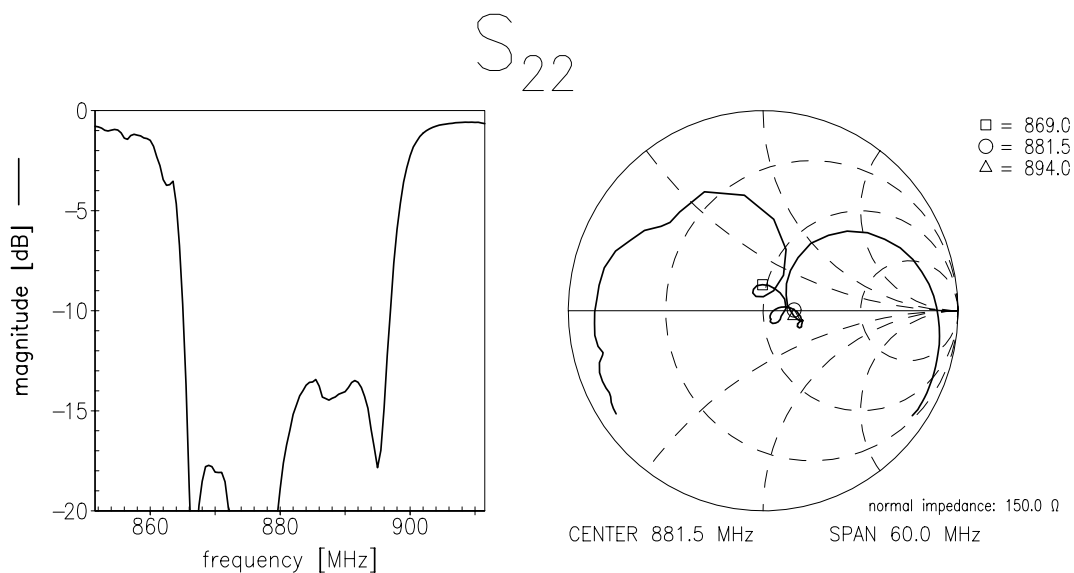
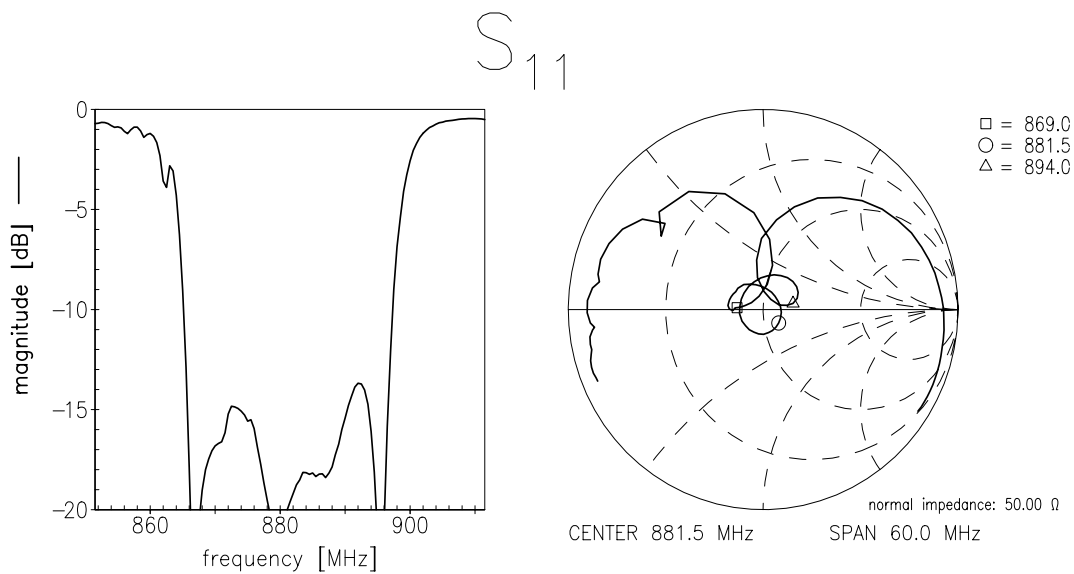
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Matching (measurement; 50 Ω to 150 Ω operation)





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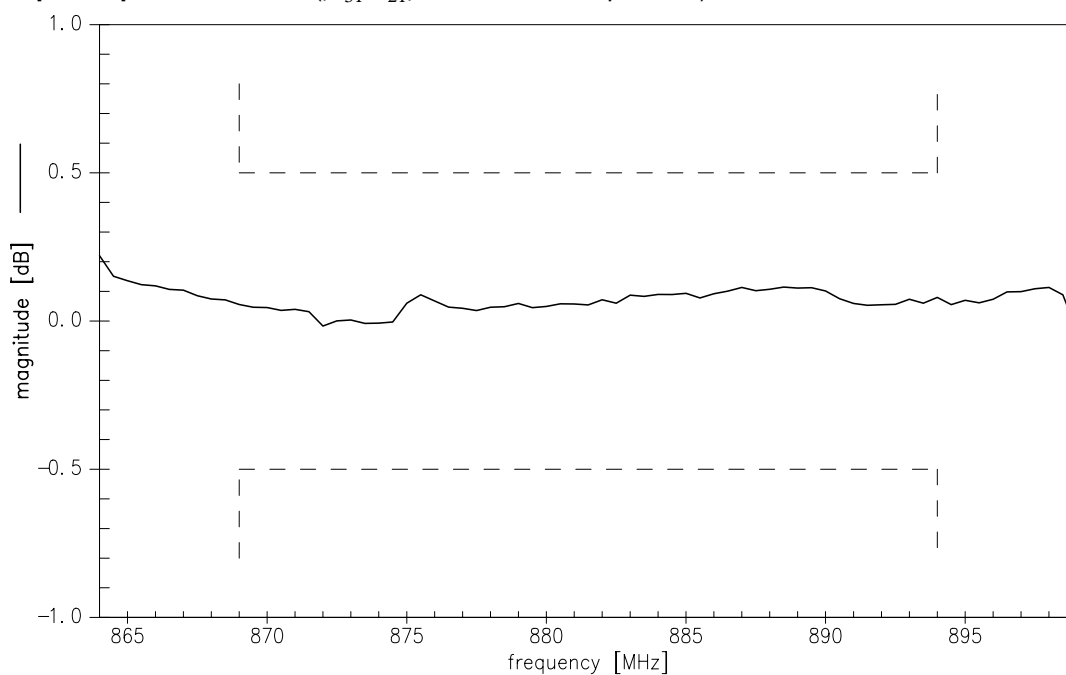
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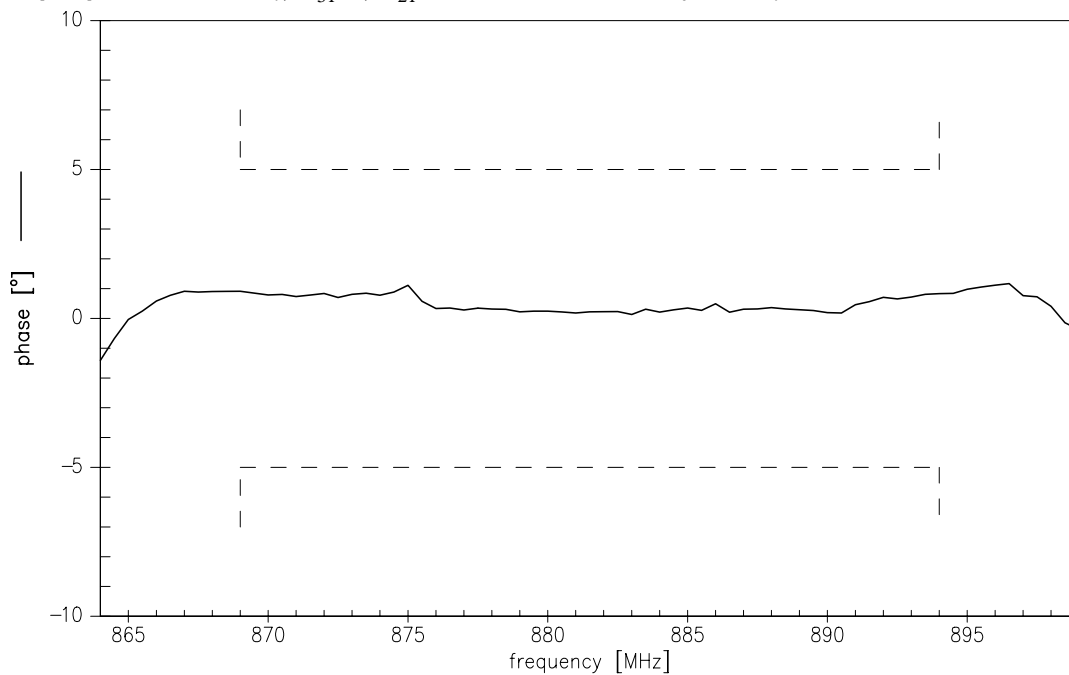
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Output amplitude balance ($|S_{31}/S_{21}|$; 50 Ω to 150 Ω operation)



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





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