



# SAW Components

Data Sheet B9001

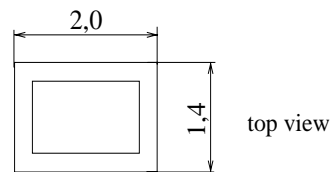
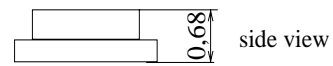
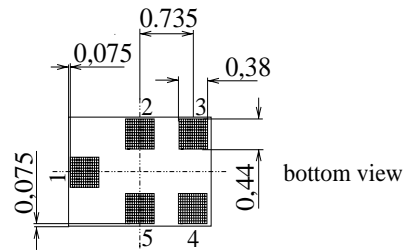




Chip sized SAW package QCS5C

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 to12
- Ceramic package for **Surface Mounted Technology (SMT)**



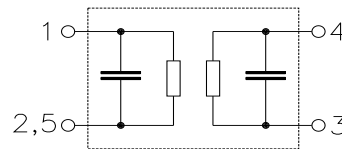
Dimensions in mm, approx. weight 0,007g

Terminals

- Ni, gold-plated

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	°C	HBM peak power of GSM signal, duty cycle 4:8
Storage temperature range	$T_{stg}$	- 40 / + 85	°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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Low-Loss Filter for Mobile Communication

881,5 MHz

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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.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	869,0 ... 894,0 MHz	—	1,7	2,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	869,0 ... 894,0 MHz	—	0,5	0,8	dB
<b>Input return loss</b>					
	869,0 ... 894,0 MHz	10,0	13,0	—	dB
<b>Output return loss</b>					
	869,0 ... 894,0 MHz	10,0	13,0	—	dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
	869,0 ... 894,0 MHz	-5	0	5	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	869,0 ... 894,0 MHz	-0,5	0	0,5	dB
<b>Attenuation</b>	$\alpha$				
	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.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	869,0 ... 894,0 MHz	—	1,9	2,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	869,0 ... 894,0 MHz	—	0,7	1,3	dB
<b>Input return loss</b>					
	869,0 ... 894,0 MHz	10,0	13,0	—	dB
<b>Output return loss</b>					
	869,0 ... 894,0 MHz	10,0	13,0	—	dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
	869,0 ... 894,0 MHz	-5	0	5	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	869,0 ... 894,0 MHz	-0,5	0	0,5	dB
<b>Attenuation</b>	$\alpha$				
	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.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	869,0 ... 894,0 MHz	—	1,9	2,2	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	869,0 ... 894,0 MHz	—	0,7	1,0	dB
<b>Input return loss</b>					
	869,0 ... 894,0 MHz	10,0	13,0	—	dB
<b>Output return loss</b>					
	869,0 ... 894,0 MHz	10,0	12,0	—	dB
<b>Output phase balance (<math>\phi(S_{31})-\phi(S_{21})+180^\circ</math>)</b>					
	869,0 ... 894,0 MHz	-5	0	5	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
	869,0 ... 894,0 MHz	-0,5	0	0,5	dB
<b>Attenuation</b>	$\alpha$				
	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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Data Sheet  
Characteristics

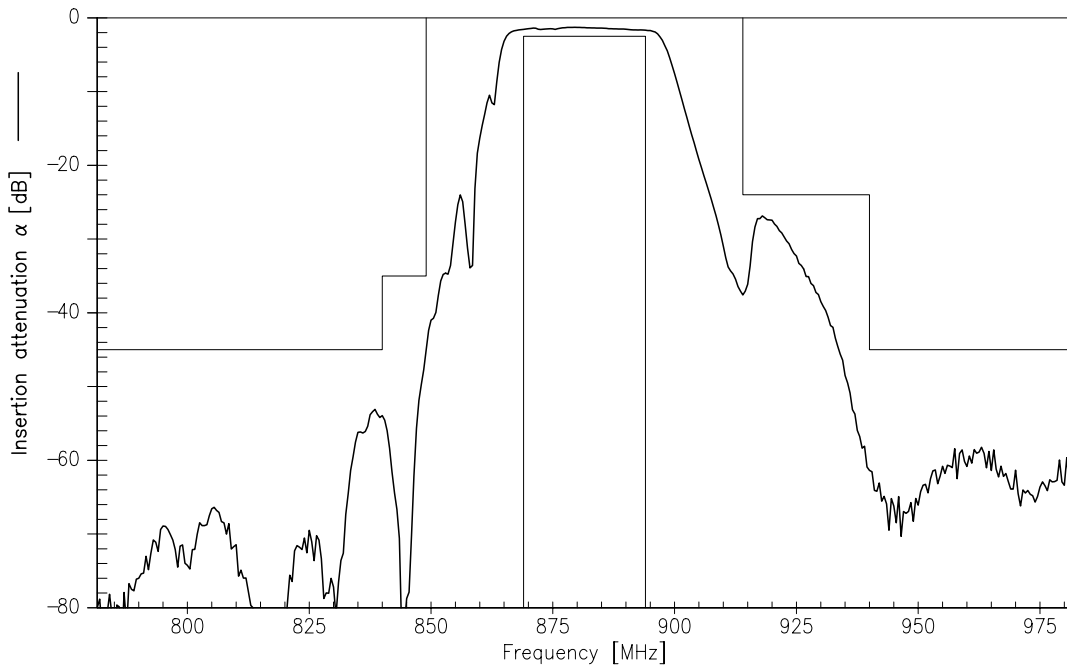


Operating temperature range:  $T = -30$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50$   $\Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 200$   $\Omega$  (balanced)

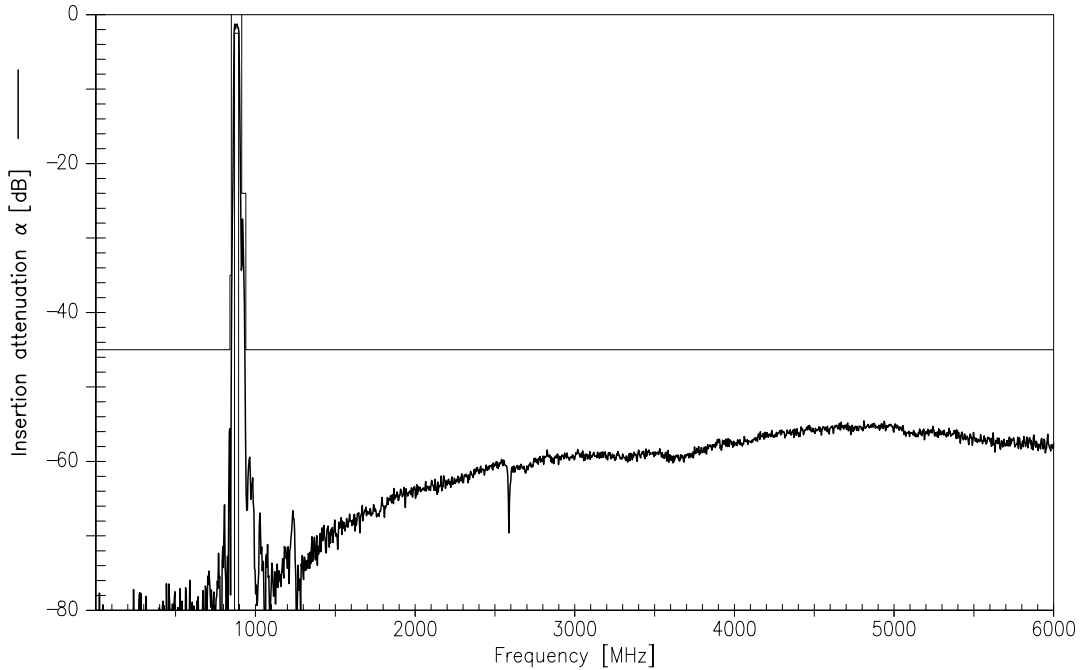
		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
869,0 ... 894,0 MHz		—	2,1	2,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,9	1,3	dB
<b>Input return loss</b>					
869,0 ... 894,0 MHz		10,0	13,0	—	dB
<b>Output return loss</b>					
869,0 ... 894,0 MHz		10,0	12,0	—	dB
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b>					
869,0 ... 894,0 MHz		-5	0	5	degree
<b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>					
869,0 ... 894,0 MHz		-0,5	0	0,5	dB
<b>Attenuation</b>	$\alpha$				
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  $\Omega$  to 150  $\Omega$  operation)

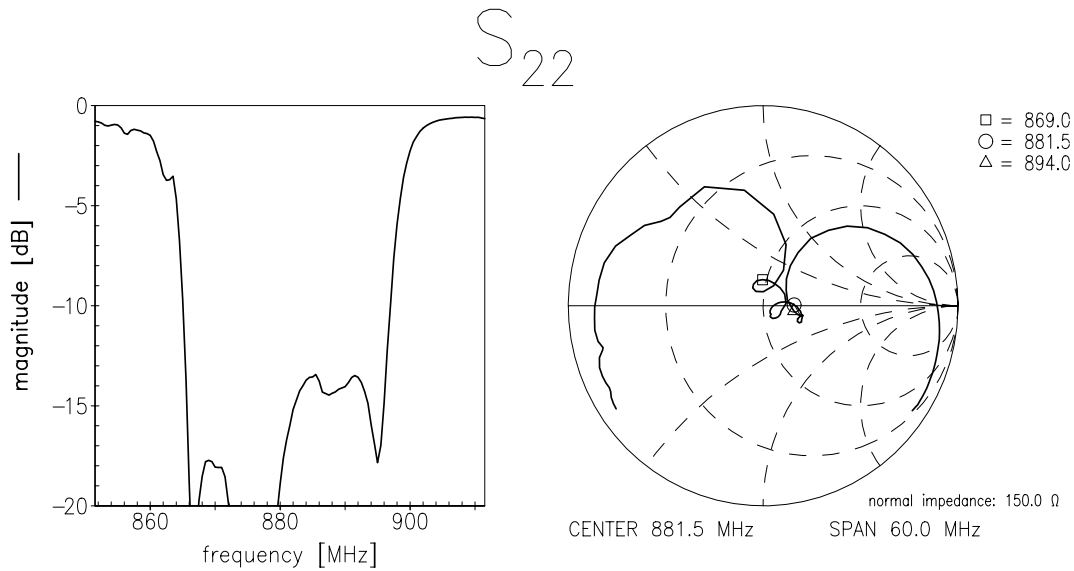
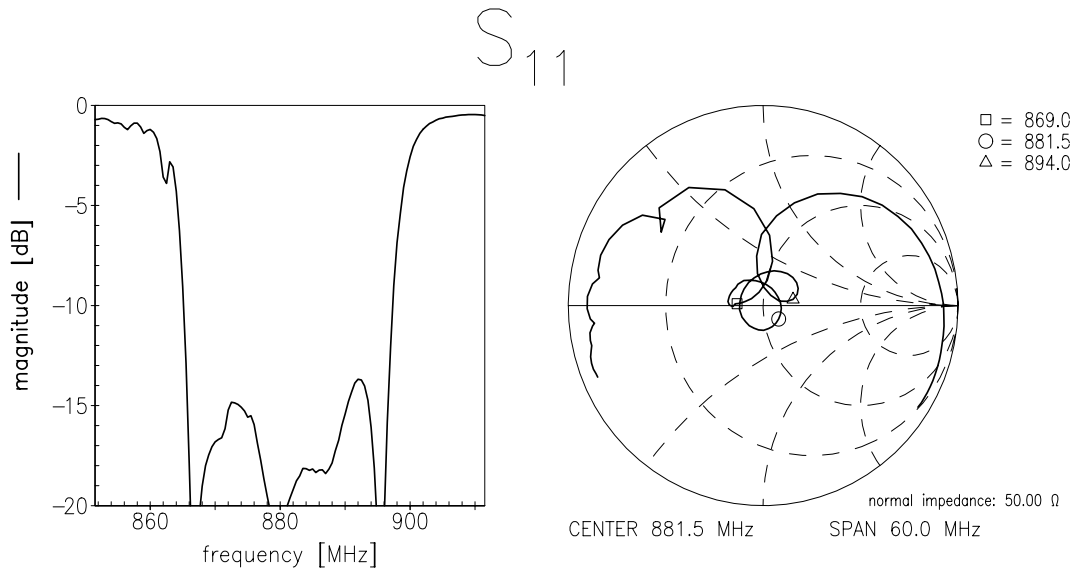


Transfer function (wideband; 50  $\Omega$  to 150  $\Omega$  operation)





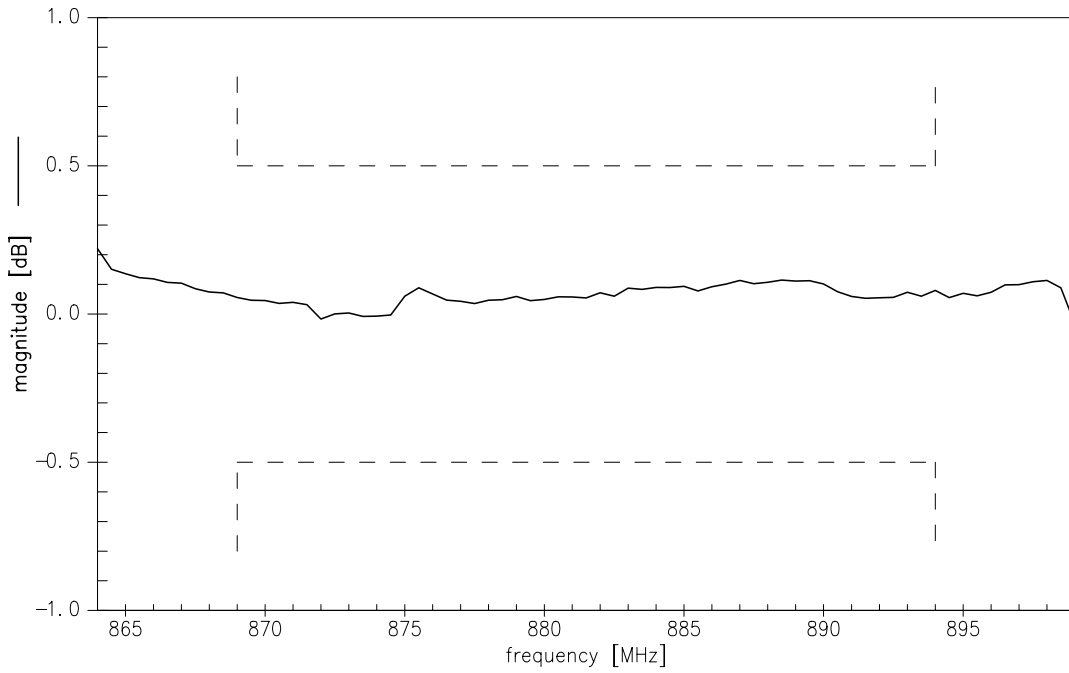
Matching (measurement; 50 Ω to 150 Ω operation)



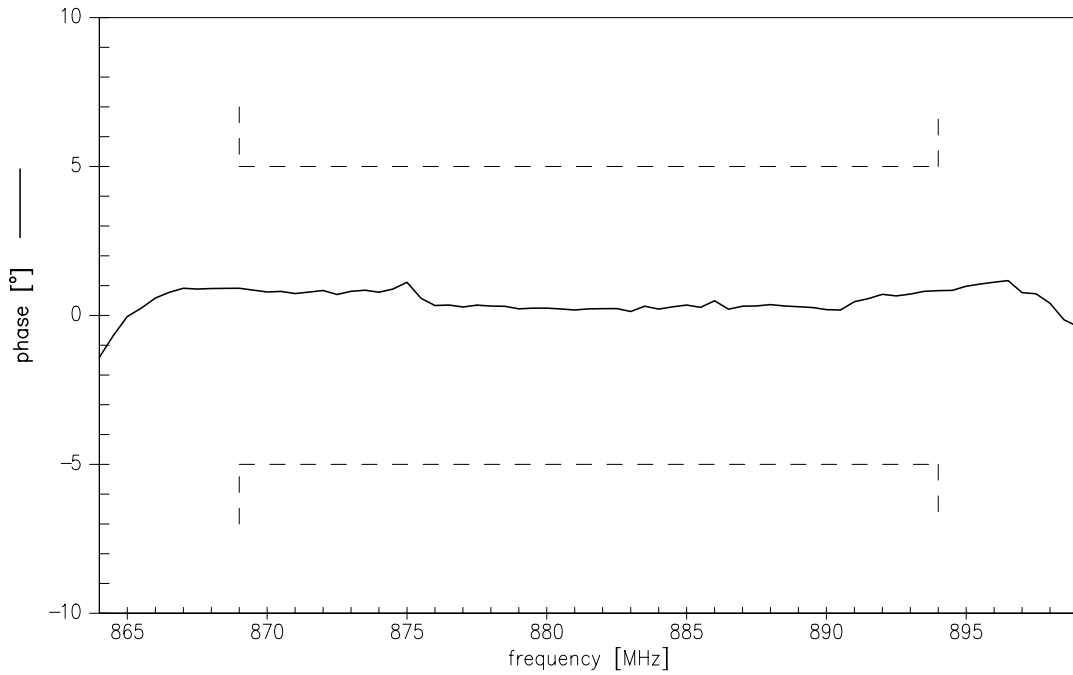




Output amplitude balance ( $|S_{31}/S_{21}|$ ; 50  $\Omega$  to 150  $\Omega$  operation)



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





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**Published by EPCOS AG**

**Surface Acoustic Wave Components Division, SAW MC WT**

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

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