



# SAW Components

Data Sheet B7701





**SAW Components**

**B7701**

**Low-Loss Filter for Mobile Communication**

**881,5 MHz**

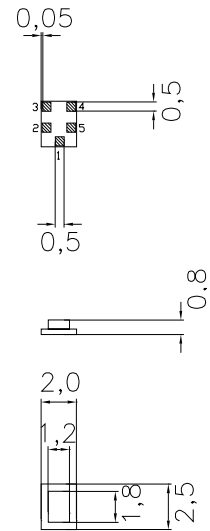
Data Sheet



**Features**

- Low-loss RF filter for mobile telephone AMPS system, receive path
- Low amplitude ripple
- Usable passband 25 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50 Ω to 200 Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mounted Technology (SMT)**

**Chip Sized SAW Package QCS5A**



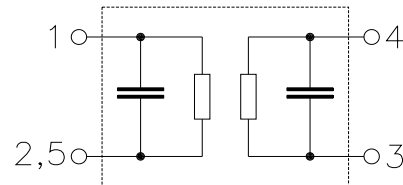
Dimensions in mm, approx. weight 0,015g

**Terminals**

- Ni, gold-plated

**Pin configuration**

- 1                    Input
- 3, 4                Balanced output
- 2, 5                Ground, to be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B7701	B39881-B7701-B610	C61157-A7-A71	F61074-V8104-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 40 / + 85	°C	peak power of GSM signal, duty cycle 4:8
Storage temperature range	$T_{stg}$	- 40 / + 85	°C	
DC voltage	$V_{DC}$	5	V	
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	$P_{IN}$	15	dBm	



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**Characteristics**

Operating temperature range:  $T = +25\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 200\ \Omega$

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
869,0 ... 894,0 MHz		—	2,3	2,6	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
869,0 ... 894,0 MHz		—	0,6	1,0	dB
<b>VSWR</b>					
869,0 ... 894,0 MHz		—	1,8	2,0	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{32}) + 180^\circ</math>)</b>					
869,0 ... 894,0 MHz		-10,0	0	10,0	degree
<b>Output amplitude balance (<math> S_{31}/S_{32} </math>)</b>					
869,0 ... 894,0 MHz		-1,0	0	1,0	dB
<b>Attenuation</b>	$\alpha$				
0,0 ... 824,0 MHz		50,0	60,0	—	dB
824,0 ... 849,0 MHz		35,0	40,0	—	dB
914,0 ... 924,0 MHz		25,0	28,0	—	dB
924,0 ... 970,0 MHz		30,0	36,0	—	dB
970,0 ... 3000,0 MHz		50,0	70,0	—	dB
3000,0 ... 6000,0 MHz		45,0	60,0	—	dB
<b>Tx band suppression</b>	$\alpha$				
824,0 ... 849,0 MHz		35,0	40,0	—	dB



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**Characteristics**

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

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	869,0 ... 894,0 MHz	—	2,6	3,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	869,0 ... 894,0 MHz	—	1,0	1,4	dB
<b>VSWR</b>					
	869,0 ... 894,0 MHz	—	1,8	2,0	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{32}) + 180^\circ</math>)</b>					
	869,0 ... 894,0 MHz	-10,0	0	10,0	degree
<b>Output amplitude balance (<math> S_{31}/S_{32} </math>)</b>					
	869,0 ... 894,0 MHz	-1,0	0	1,0	dB
<b>Attenuation</b>	$\alpha$				
	0,0 ... 824,0 MHz	50,0	60,0	—	dB
	824,0 ... 849,0 MHz	35,0	40,0	—	dB
	914,0 ... 924,0 MHz	22,0	26,0	—	dB
	924,0 ... 970,0 MHz	30,0	36,0	—	dB
	970,0 ... 3000,0 MHz	50,0	70,0	—	dB
	3000,0 ... 6000,0 MHz	45,0	60,0	—	dB
<b>Tx band suppression</b>	$\alpha$				
	824,0 ... 849,0 MHz	35,0	40,0	—	dB



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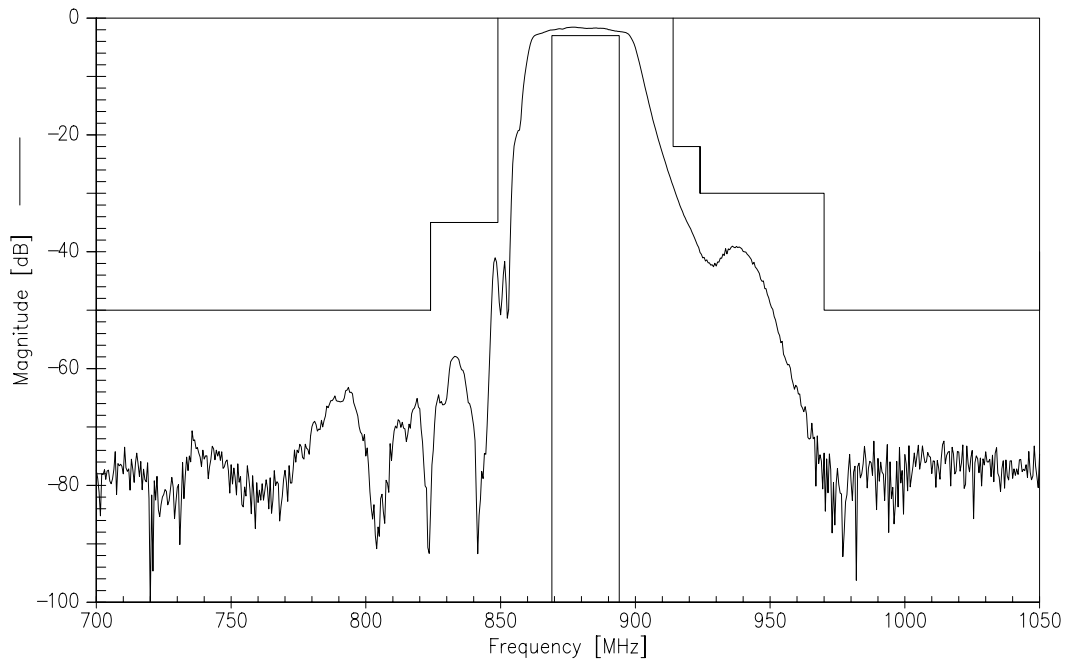
**Characteristics**

Operating temperature range:  $T = -40$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 200 \Omega$

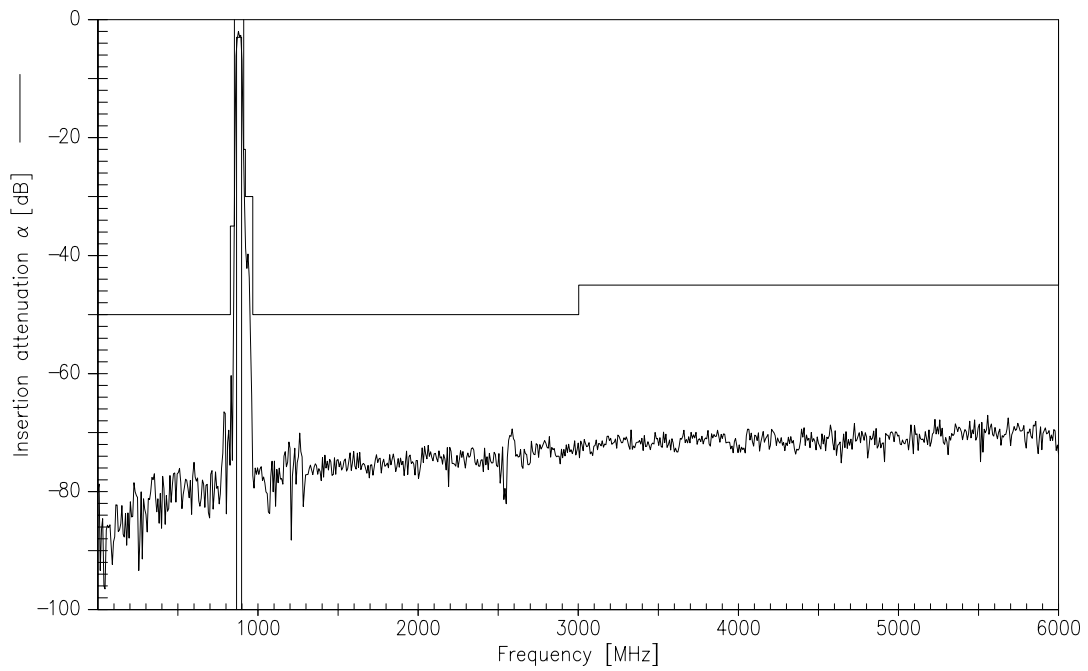
		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	881,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	869,0 ... 894,0 MHz	—	2,6	3,1	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	869,0 ... 894,0 MHz	—	1,0	1,5	dB
<b>VSWR</b>					
	869,0 ... 894,0 MHz	—	1,8	2,2	
<b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{32}) + 180^\circ</math>)</b>					
	869,0 ... 894,0 MHz	-10,0	0	10,0	degree
<b>Output amplitude balance (<math> S_{31}/S_{32} </math>)</b>					
	869,0 ... 894,0 MHz	-1,0	0	1,0	dB
<b>Attenuation</b>	$\alpha$				
	0,0 ... 824,0 MHz	50,0	60,0	—	dB
	824,0 ... 849,0 MHz	35,0	40,0	—	dB
	914,0 ... 924,0 MHz	22,0	26,0	—	dB
	924,0 ... 970,0 MHz	30,0	36,0	—	dB
	970,0 ... 3000,0 MHz	50,0	70,0	—	dB
	3000,0 ... 6000,0 MHz	45,0	60,0	—	dB
<b>Tx band suppression</b>	$\alpha$				
	824,0 ... 849,0 MHz	35,0	40,0	—	dB



Transfer function (narrowband measurement)



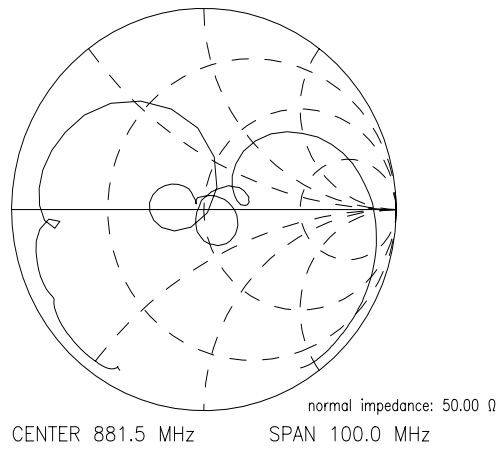
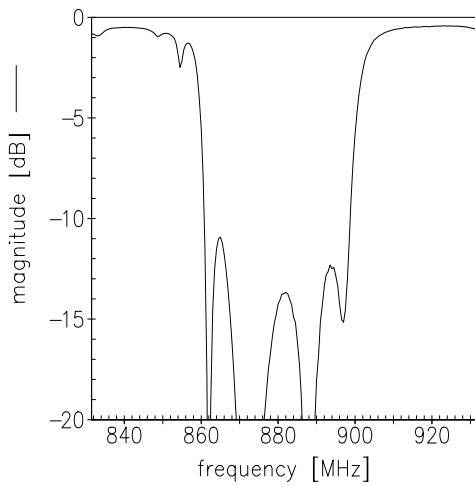
Transfer function (wideband measurement)



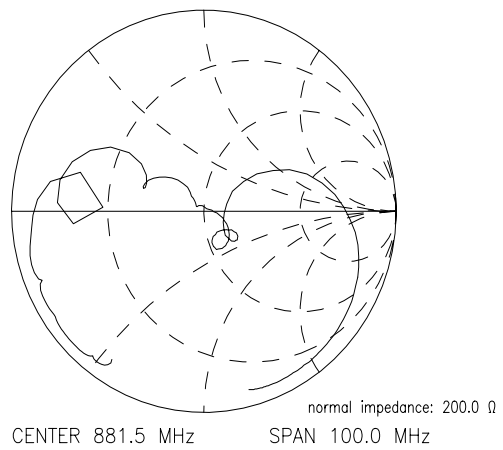
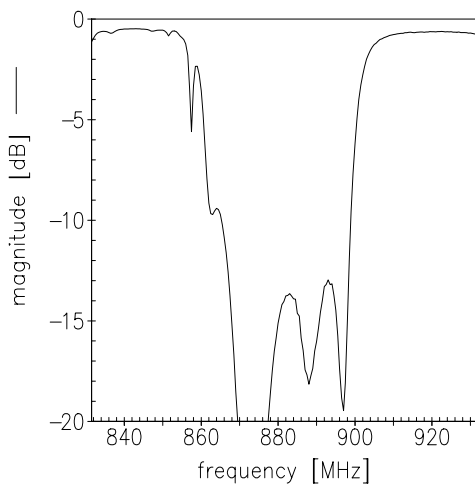


Reflection functions (measurement)

$S_{11}$

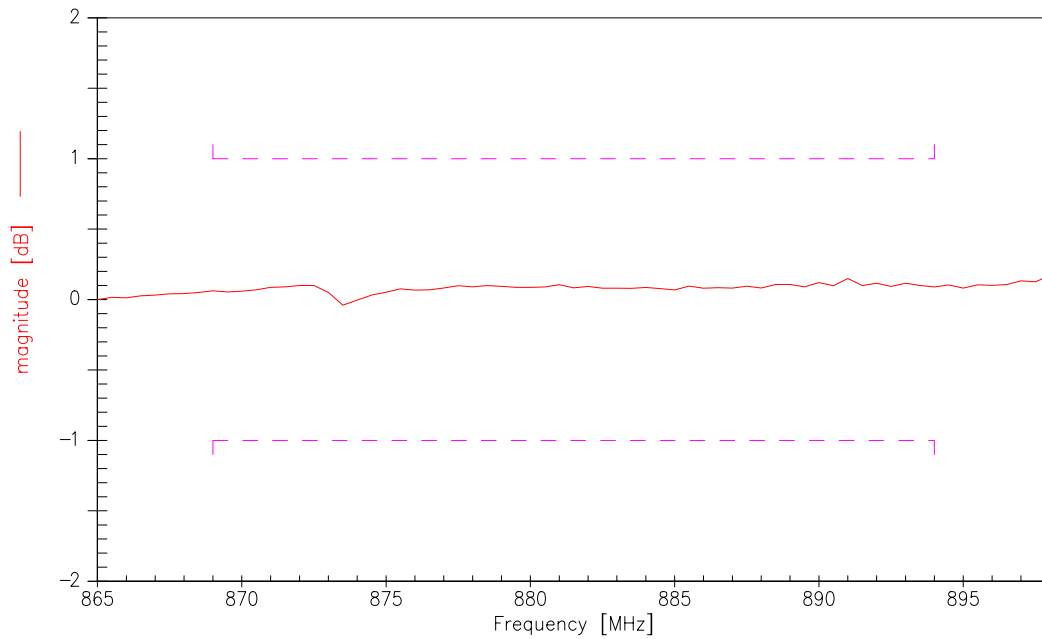


$S_{22}$

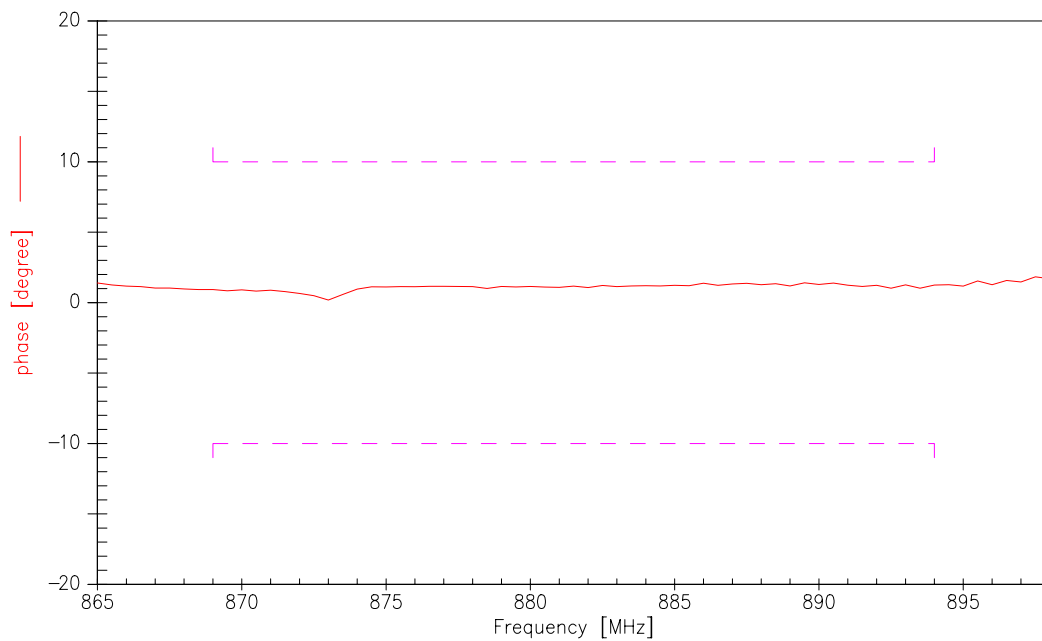




Output amplitude balance ( $|S_{31}/S_{21}|$ ; measurement)



Output phase balance ( $\phi(S_{31})-\phi(S_{21})+180^\circ$ ; measurement)







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