



SAW Components

Data Sheet B7705

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a blue glow and are positioned diagonally across the frame. In the background, there is a faint, stylized globe and some circuitry patterns, all in a dark, monochromatic color scheme.



SAW Components

B7705

Low-Loss Filter for Mobile Communication

942,5 MHz

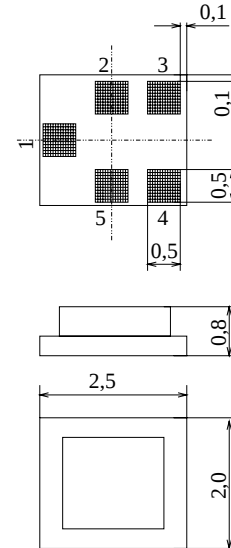
Data Sheet



Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 150 Ω
- Ceramic package for Surface Mounted Technology (SMT)

Chip sized SAW package QCS5A



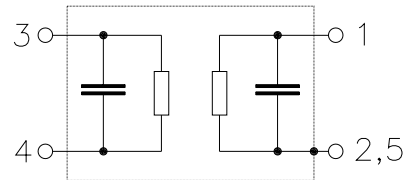
Dimensions in mm, approx. weight 0,015 g

Terminals

- Ni, gold-plated

Pin configuration

- | | |
|------|-------------------|
| 1 | Input, unbalanced |
| 3, 4 | Output, balanced |
| 2, 5 | Case ground |



Type	Ordering code	Marking and Package according to	Packing according to
B7705	B39941-B7705-B610	C61157-A7-A71	F61074-V8104-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 25 / + 85	$^{\circ}\text{C}$	source impedance 50 Ω , load impedance 150 Ω ; CW input for min. 2000h
Storage temperature range	T_{stg}	- 40 / + 85	$^{\circ}\text{C}$	
DC voltage	V_{DC}	3,5	V	
Input power max.	P_{IN}		dBm	
880 ... 915 MHz		18		
925 ... 960 MHz		8		
1710 ... 1910 MHz		18		
1920 ... 1980 MHz		10		
2402 ... 2480 MHz		4		
elsewhere		0	dBm	



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Characteristics

Operating temperature range: $T = +25\text{ °C}$

Terminating source impedance: $Z_S = 50\ \Omega$

Terminating load impedance: $Z_L = 150\ \Omega$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
925,0 ... 960,0 MHz		—	2,7	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	0,9	1,6	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,2	2,4	
Output VSWR					
925,0 ... 960,0 MHz		—	2,2	2,3	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	75	—	dB
880,0 ... 905,0 MHz		30	45	—	dB
905,0 ... 915,0 MHz		23	27	—	dB
980,0 ... 1050,0 MHz		23	26	—	dB
1050,0 ... 6000,0 MHz		50	60	—	dB



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Characteristics

Operating temperature range: $T = -10$ to $+80$ °C

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 150 \Omega$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
925,0 ... 960,0 MHz		—	2,8	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,0	1,9	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,2	2,4	
Output VSWR					
925,0 ... 960,0 MHz		—	2,2	2,3	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	75	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		18	27	—	dB
980,0 ... 1050,0 MHz		23	25	—	dB
1050,0 ... 6000,0 MHz		50	60	—	dB



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Characteristics

Operating temperature range: $T = -20$ to $+80$ °C

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 150 \Omega$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
925,0 ... 960,0 MHz		—	2,9	3,7	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,0	2,1	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,2	2,4	
Output VSWR					
925,0 ... 960,0 MHz		—	2,2	2,3	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	75	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		18	27	—	dB
980,0 ... 1050,0 MHz		22	25	—	dB
1050,0 ... 6000,0 MHz		50	60	—	dB



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Characteristics

Operating temperature range: $T = -30$ to $+85$ °C

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 150 \Omega$

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
925,0 ... 960,0 MHz		—	3,5	4,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,5	2,4	dB
Input VSWR					
925,0 ... 960,0 MHz		—	2,2	2,5	
Output VSWR					
925,0 ... 960,0 MHz		—	2,2	2,5	
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
925,0 ... 960,0 MHz		-5	0	5	degree
Output amplitude balance ($ S_{31}/S_{21} $)					
925,0 ... 960,0 MHz		-0,5	0	0,5	dB
Attenuation	α				
0,0 ... 880,0 MHz		50	75	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		10	15	—	dB
980,0 ... 1050,0 MHz		21	23	—	dB
1050,0 ... 6000,0 MHz		50	60	—	dB



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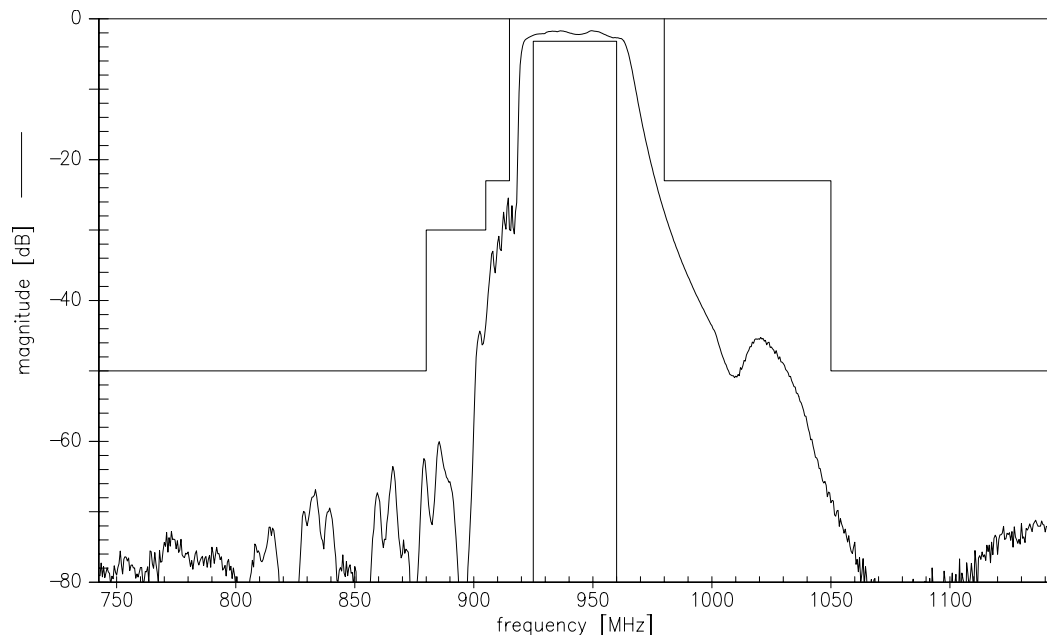
Low-Loss Filter for Mobile Communication

942,5 MHz

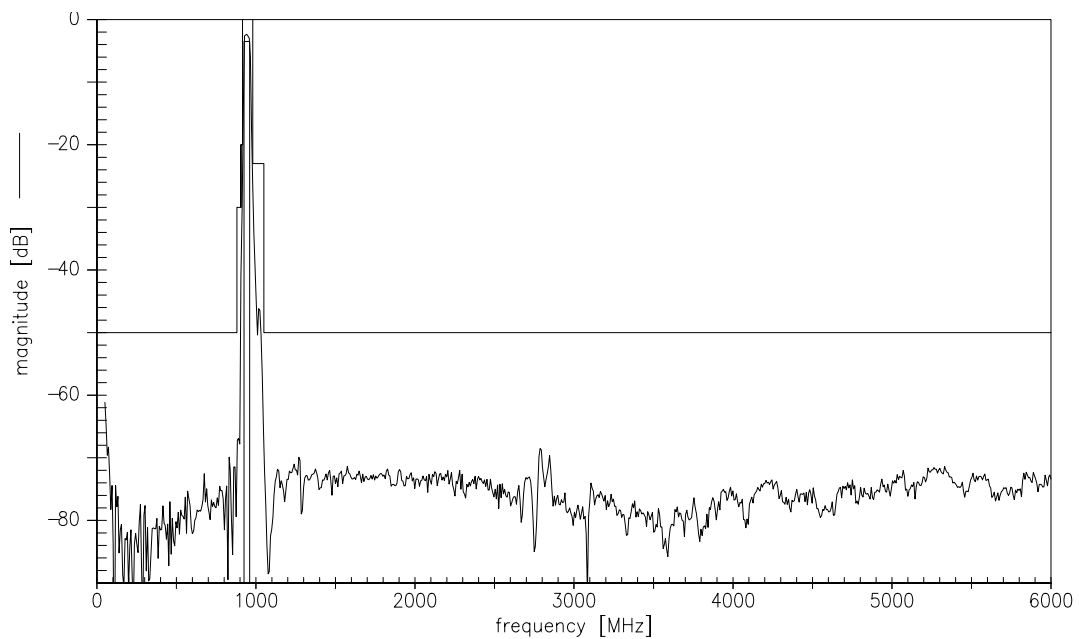
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Transfer function



Transfer function (wideband)





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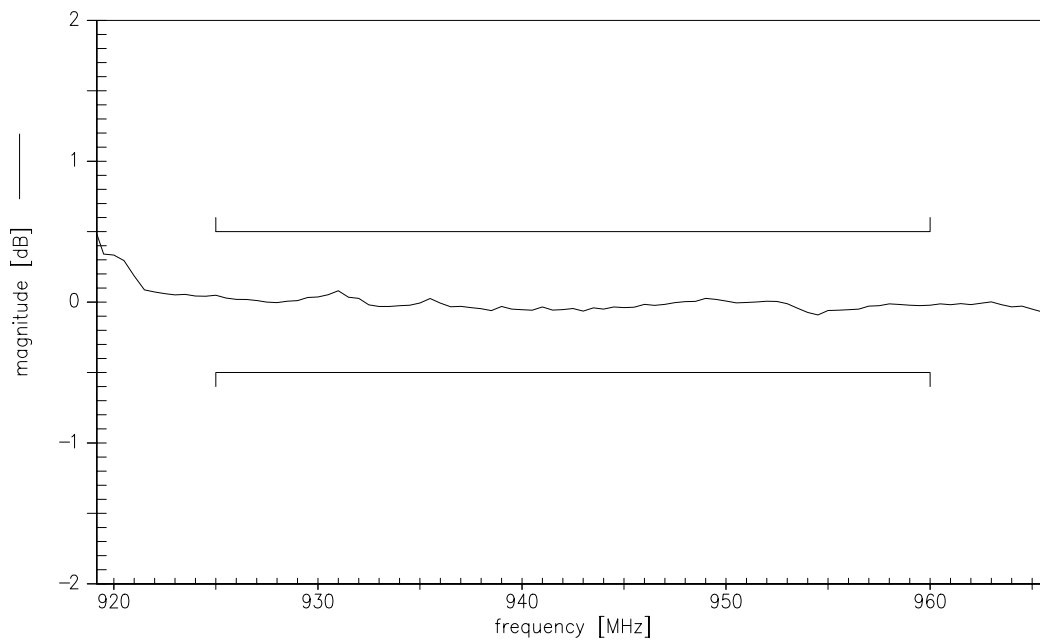
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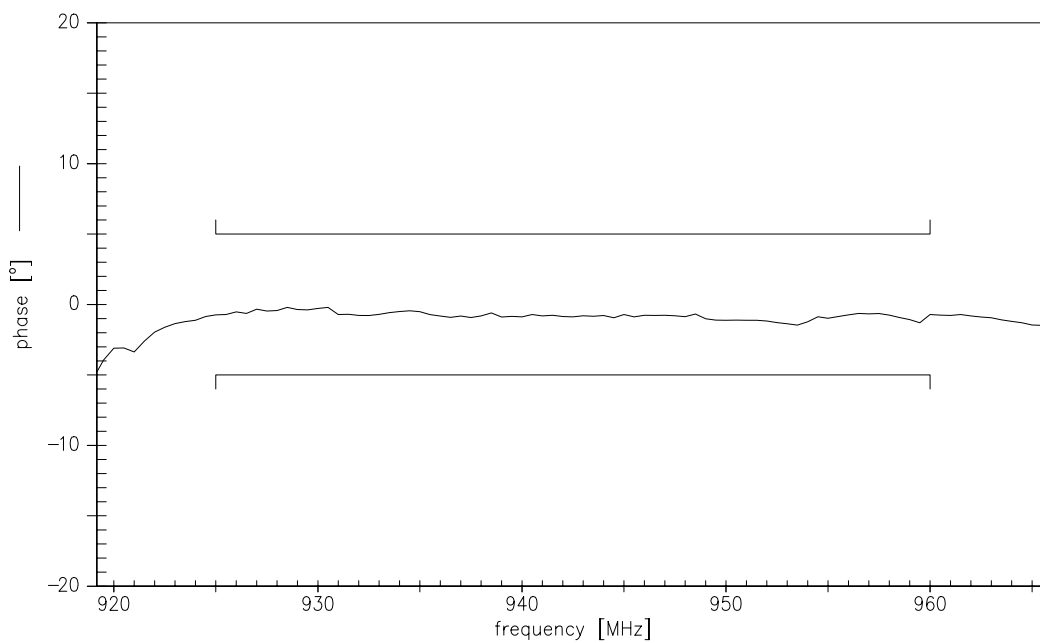
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Output amplitude balance ($|S_{31}|/|S_{21}|$)



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





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Data Sheet	SMD

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