



THE DATASHEET OF B7706





SAW Components

Data Sheet B7706





SAW Components

B7706

Low-Loss Filter for Mobile Communication

942,5 MHz

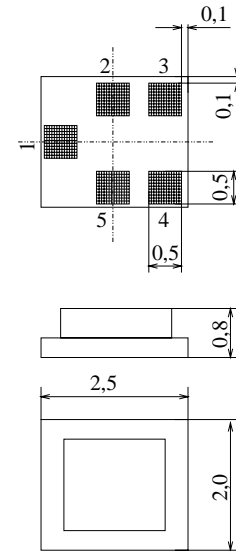
Data Sheet



Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Excellent symmetry between balanced ports
- Impedance transformation from 50 Ω to 200 Ω
- Suitable for GPRS class 1 to 12
- Ceramic Package for **Surface Mounted Technology (SMT)**

Chip sized SAW package QCS5A



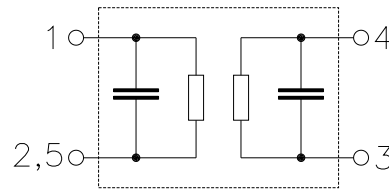
Dimensions in mm, approx. weight 0,015 g

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
B7706	B39941-B7706-B610	C61157-A7-A71	F61074-V8104-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 30 / + 85	°C	peak power of GSM signal, duty cycle 4:8
Storage temperature range	T_{stg}	- 40 / + 85	°C	
DC voltage	V_{DC}	3	V	
Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands	P_{IN}	15	dBm	



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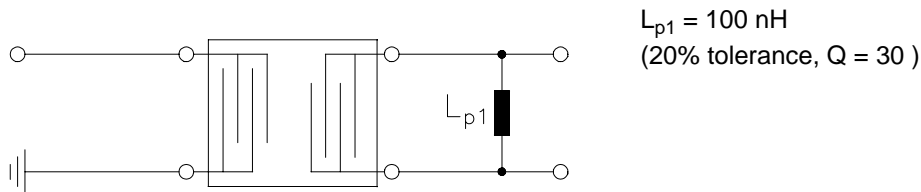


Characteristics

Operating temperature: $T = 25 \pm 2^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega$ including matching network

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{\max}	—	2,6	3,2	dB
925,0 ... 960,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,3	1,9	dB
925,0 ... 960,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-4	0	4	degree
925,0 ... 960,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-0,3	0	0,3	dB
925,0 ... 960,0 MHz					
Input VSWR		—	1,8	2,3	
925,0 ... 960,0 MHz					
Output VSWR		—	1,8	2,3	
925,0 ... 960,0 MHz					
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		20	27	—	dB
980,0 ... 1050,0 MHz		22	24	—	dB
1050,0 ... 6000,0 MHz		50	65	—	dB

Test matching network





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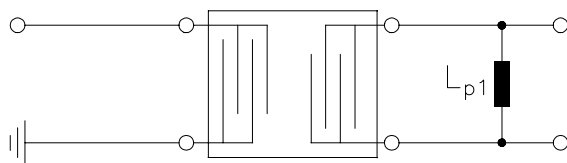


Characteristics

Operating temperature range: $T = -10$ to $+80$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega$ including matching network

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}	—	2,7	3,5	dB
925,0 ... 960,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,4	2,2	dB
925,0 ... 960,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-4	0	4	degree
925,0 ... 960,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-0,3	0	0,3	dB
925,0 ... 960,0 MHz					
Input VSWR		—	1,8	2,3	
925,0 ... 960,0 MHz					
Output VSWR		—	1,8	2,3	
925,0 ... 960,0 MHz					
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		20	27	—	dB
980,0 ... 1050,0 MHz		22	23	—	dB
1050,0 ... 6000,0 MHz		50	65	—	dB

Test matching network



$L_{p1} = 100$ nH
 (20% tolerance, $Q = 30$)



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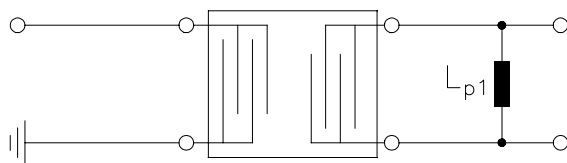


Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
 Terminating source impedance: $Z_S = 50$ Ω
 Terminating load impedance: $Z_L = 200$ Ω including matching network

		min.	typ.	max.	
Center frequency	f_C	—	942,5	—	MHz
Maximum insertion attenuation	α_{max}	—	2,8	3,6	dB
925,0 ... 960,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,5	2,3	dB
925,0 ... 960,0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-10	0	10	degree
925,0 ... 960,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1	0	1	dB
925,0 ... 960,0 MHz					
Input VSWR		—	2,0	—	
925,0 ... 960,0 MHz					
Output VSWR		—	2,0	—	
925,0 ... 960,0 MHz					
Attenuation	α				
0,0 ... 880,0 MHz		50	60	—	dB
880,0 ... 905,0 MHz		30	40	—	dB
905,0 ... 915,0 MHz		16	20	—	dB
980,0 ... 1050,0 MHz		20	22	—	dB
1050,0 ... 6000,0 MHz		50	65	—	dB

Test matching network



$L_{p1} = 100$ nH
 (20% tolerance, $Q = 30$)



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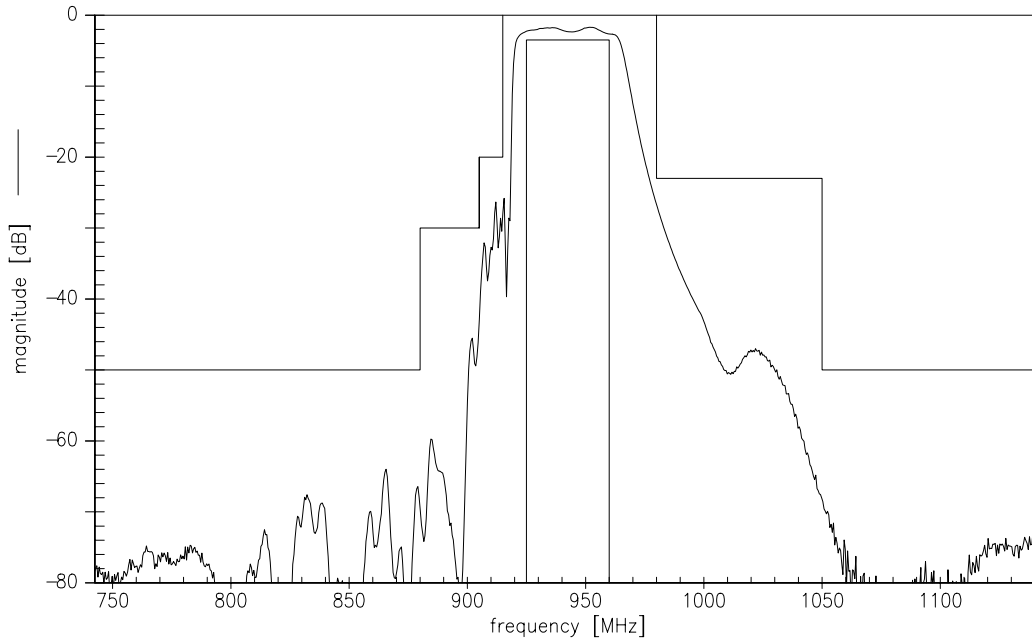
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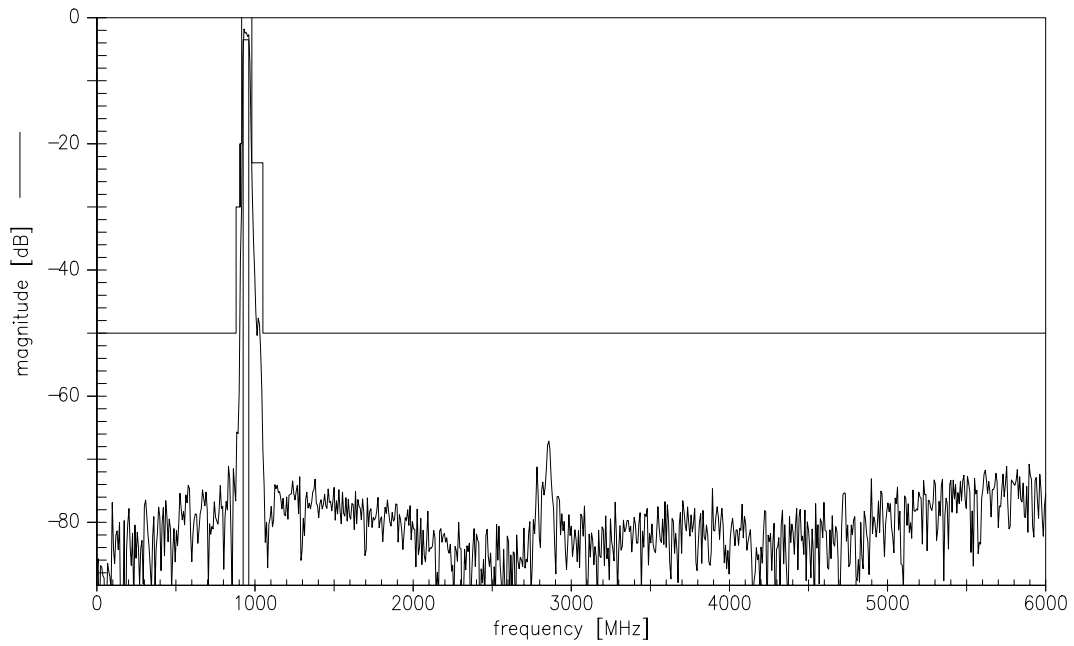
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Transfer function

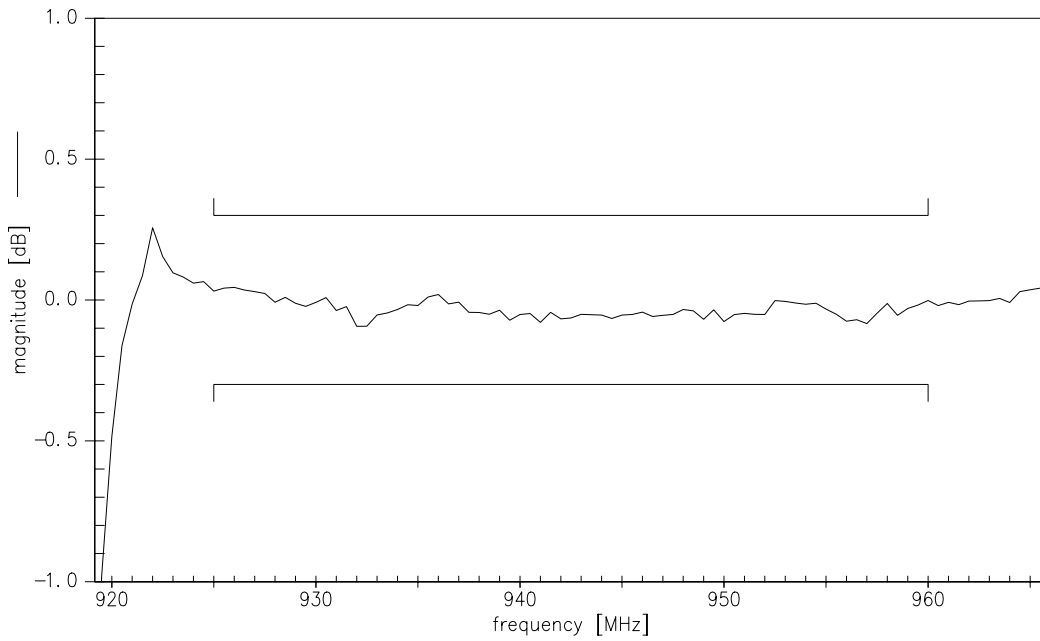


Transfer function (wideband)

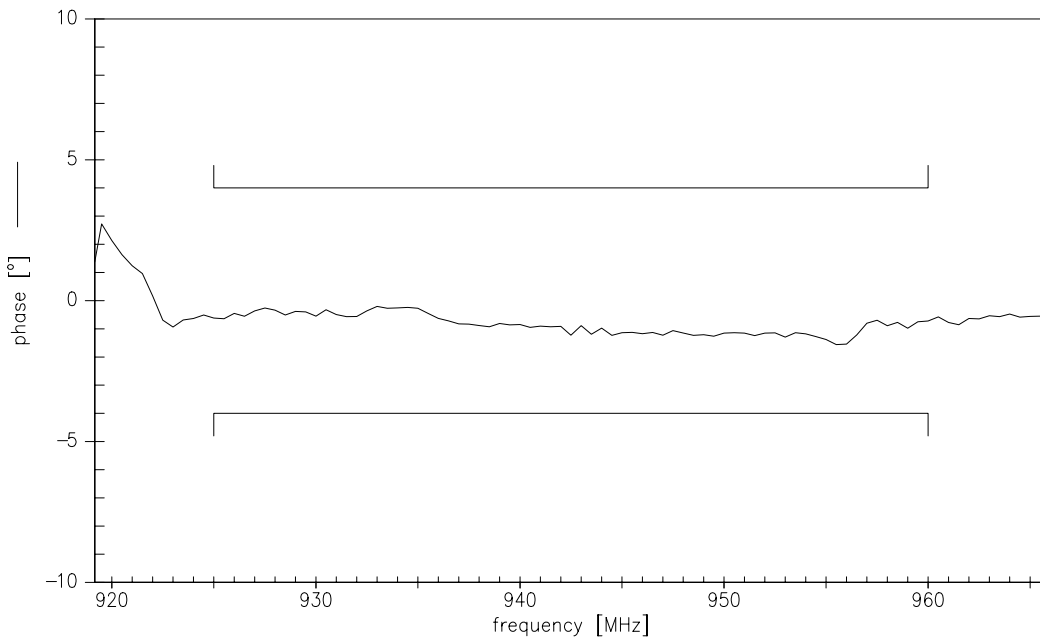




Output amplitude balance ($|S_{31}|/|S_{21}|$)



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





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