



SAW Components

Data Sheet B7712





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Low-Loss Filter for Mobile Communication

2140,0 MHz

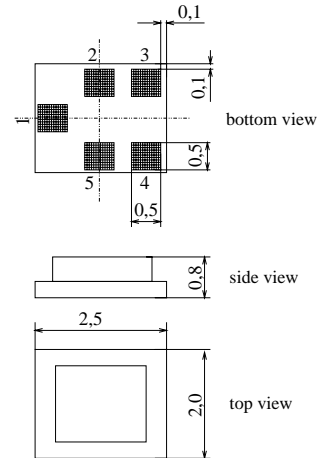
Data Sheet



Chip sized SAW package QCS5A

Features

- Low-loss RF filter for W-CDMA mobile telephone system, receive path
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Suitable for GPRS class 1 to 12
- Package for **Surface Mounted Technology (SMT)**



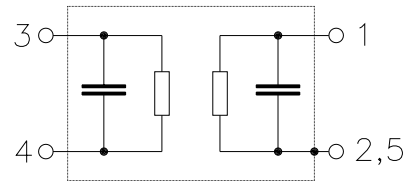
Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,015 g

Pin configuration

- 1 Input, unbalanced
- 2, 5 Input ground
- 3, 4 Output, balanced
- 2, 5 To be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B7712	B39212-B7712-B610	C61157-A7-A71	F61074-V8153-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operating temperature range	T	- 20 /+ 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	- 40 /+ 85	°C	
DC voltage	V_{DC}	3	V	
ESD voltage	V^*_{ESD}	50*	V	
Source power	P_S	10	dBm	

*- acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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Characteristics

Operating temperature range: $T = +25\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 200\ \Omega \parallel 15\text{ nH (balanced)}$

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	α_{\max}	—	2,7	3,2	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,6	1,0	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5\text{MHz}}$	—	0,2	0,5	dB
2110,0 ... 2170,0 MHz					
Input VSWR		—	2,5	2,8	
2110,0 ... 2170,0 MHz					
Output VSWR		—	1,9	2,2	
2110,0 ... 2170,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1,3	0	1,3	dB
1920,0 ... 1980,0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-12	0	12	°
1920,0 ... 1980,0 MHz					
Attenuation	α				
50,0 ... 1805,0 MHz		35	43	—	dB
1805,0 ... 1920,0 MHz		30	35	—	dB
1920,0 ... 1980,0 MHz		30	33	—	dB
1980,0 ... 2050,0 MHz		17	20	—	dB
2205,0 ... 2255,0 MHz		15	23	—	dB
2255,0 ... 2490,0 MHz		20	23	—	dB
2490,0 ... 2550,0 MHz		35	38	—	dB
2550,0 ... 3500,0 MHz		35	39	—	dB
3500,0 ... 6000,0 MHz		40	50	—	dB



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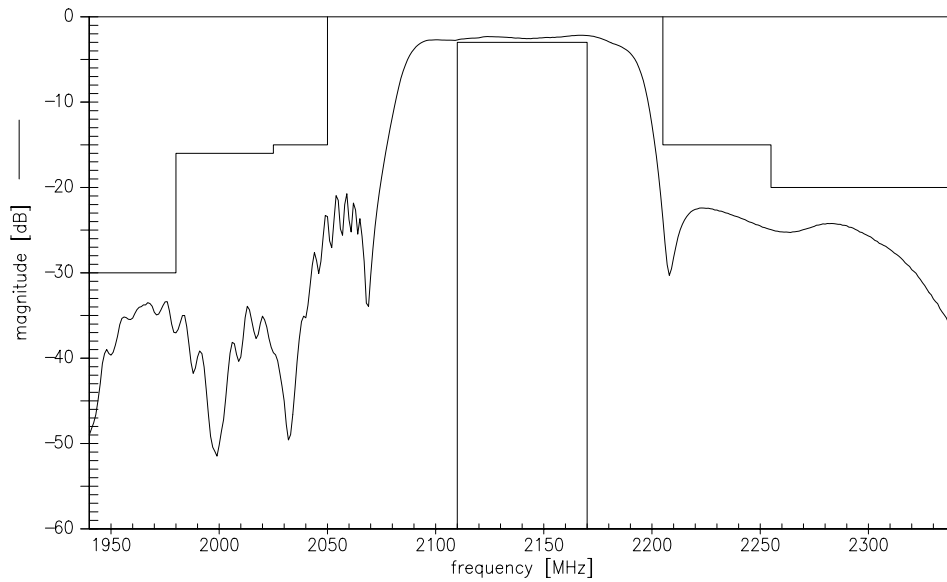
Characteristics

Operating temperature range: $T = -20$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 200 \Omega$ (balanced) || 15 nH

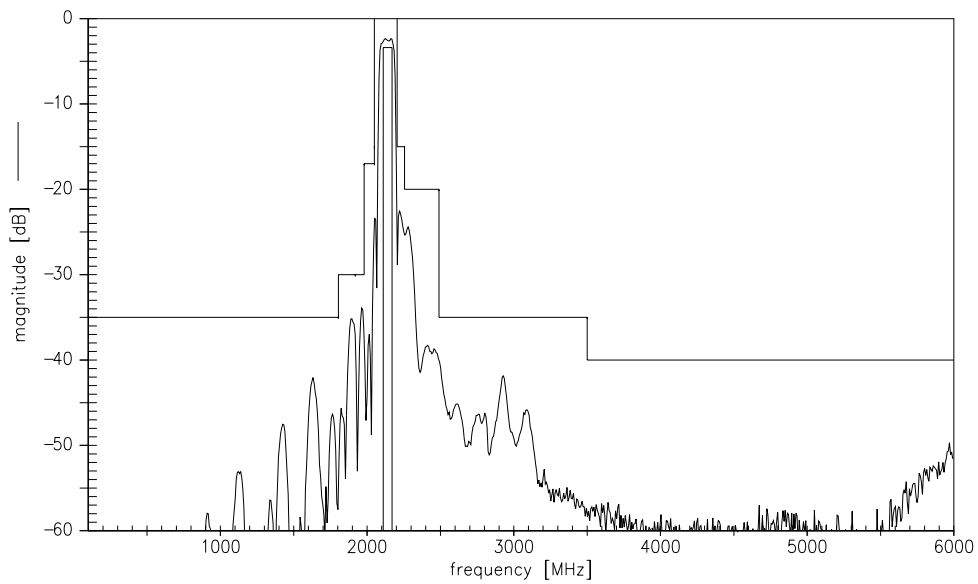
		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	α_{max}	—	2,8	3,4	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,3	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5MHz}$	—	0,2	0,6	dB
2110,0 ... 2170,0 MHz					
Input VSWR		—	2,5	2,8	
2110,0 ... 2170,0 MHz					
Output VSWR		—	1,9	2,2	
2110,0 ... 2170,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1,3	0	1,3	dB
1920,0 ... 1980,0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-12	0	12	°
1920,0 ... 1980,0 MHz					
Attenuation	α				
50,0 ... 1805,0 MHz		35	43	—	dB
1805,0 ... 1880,0 MHz		30	35	—	dB
1920,0 ... 1980,0 MHz		30	33	—	dB
1980,0 ... 2050,0 MHz		17	20	—	dB
2205,0 ... 2255,0 MHz		15	19	—	dB
2255,0 ... 2490,0 MHz		20	23	—	dB
2490,0 ... 2550,0 MHz		35	38	—	dB
2550,0 ... 3500,0 MHz		35	39	—	dB
3500,0 ... 6000,0 MHz		40	50	—	dB



Transfer function (narrow band):

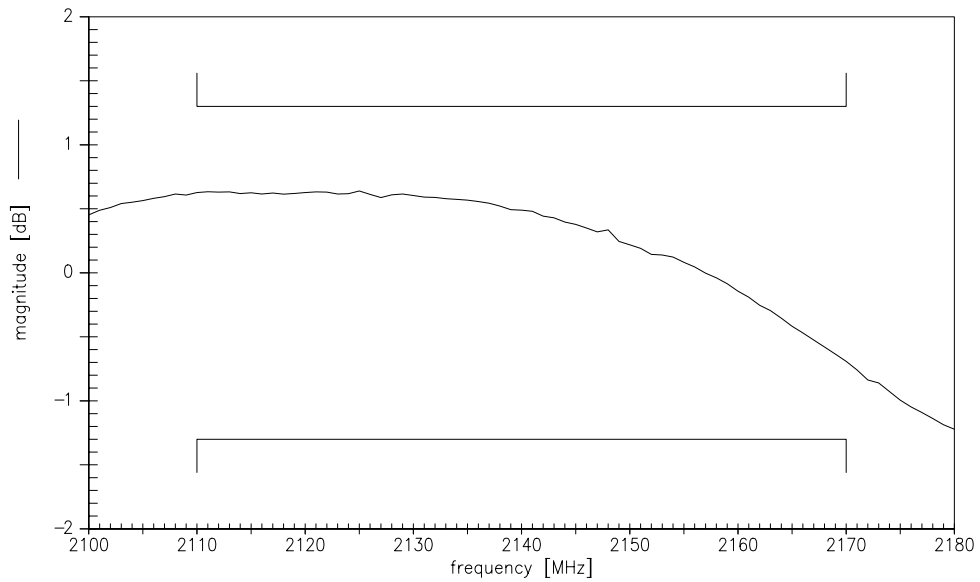


Transfer function (wide band):

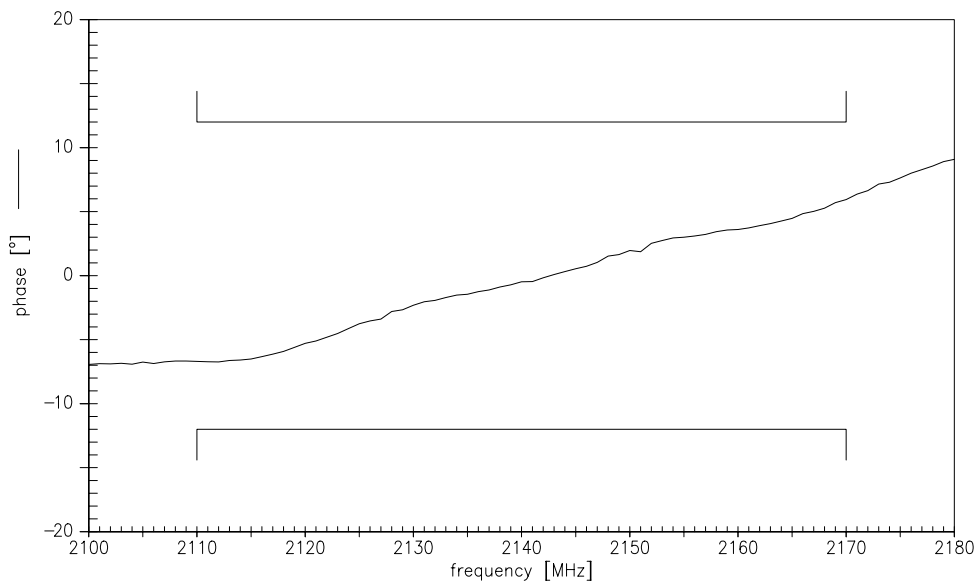




Output amplitude balance ($|S_{31}/S_{21}|$):



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





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 Terminating load impedance: $Z_L = 200\ \Omega \parallel 15\ \text{nH (balanced)}$

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	α_{\max}	—	2,4	2,8	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,5	0,8	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5\text{MHz}}$	—	0,2	0,4	dB
2110,0 ... 2170,0 MHz					
Input VSWR		—	1,6	2,0	
2110,0 ... 2170,0 MHz					
Output VSWR		—	1,5	2,0	
2110,0 ... 2170,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1,3	0	1,3	dB
1920,0 ... 1980,0 MHz					
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-12	0	12	°
1920,0 ... 1980,0 MHz					
Attenuation	α				
50,0 ... 1805,0 MHz		35	43	—	dB
1805,0 ... 1920,0 MHz		30	33	—	dB
1920,0 ... 1980,0 MHz		29	32	—	dB
1980,0 ... 2050,0 MHz		17	20	—	dB
2205,0 ... 2255,0 MHz		15	20	—	dB
2255,0 ... 2490,0 MHz		20	23	—	dB
2490,0 ... 2550,0 MHz		35	38	—	dB
2550,0 ... 3500,0 MHz		35	39	—	dB
3500,0 ... 6000,0 MHz		40	50	—	dB



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 Terminating load impedance: $Z_L = 200 \Omega \parallel 15$ nH (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	α_{max}	—	2,8	3,4	dB
	2110,0 ... 2170,0 MHz				
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,6	1,3	dB
	2110,0 ... 2170,0 MHz				
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5MHz}$	—	0,2	0,5	dB
	2110,0 ... 2170,0 MHz				
Input VSWR		—	1,8	2,1	
	2110,0 ... 2170,0 MHz				
Output VSWR		—	1,7	2,1	
	2110,0 ... 2170,0 MHz				
Output amplitude balance (S_{31}/S_{21})		-1,3	0	1,3	dB
	1920,0 ... 1980,0 MHz				
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-12	0	12	°
	1920,0 ... 1980,0 MHz				
Attenuation	α				
	50,0 ... 1805,0 MHz	35	43	—	dB
	1805,0 ... 1920,0 MHz	30	35	—	dB
	1920,0 ... 1980,0 MHz	30	33	—	dB
	1980,0 ... 2050,0 MHz	17	20	—	dB
	2205,0 ... 2255,0 MHz	15	20	—	dB
	2255,0 ... 2490,0 MHz	20	23	—	dB
	2490,0 ... 2550,0 MHz	35	38	—	dB
	2550,0 ... 3500,0 MHz	35	39	—	dB
	3500,0 ... 6000,0 MHz	40	50	—	dB



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