



SAW Components

Data Sheet B7712

Data Sheet

An abstract, grayscale graphic featuring the word "EPCOS" in large, bold, sans-serif letters. The letters are partially obscured by a series of overlapping, curved, metallic-looking bands that create a sense of depth and motion. The background is dark and textured.



SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

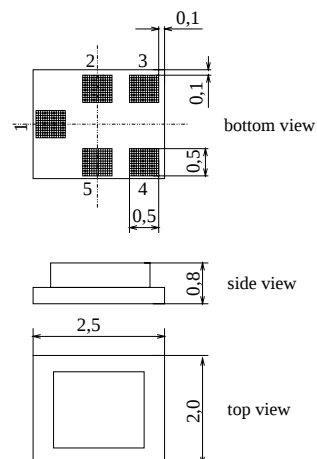
Data Sheet



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)**



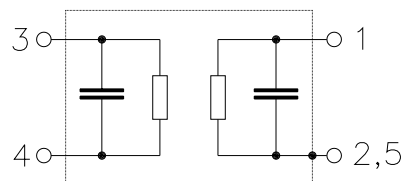
Terminals

- 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: $T = +25\text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\text{ }\Omega$
Terminating load impedance: $Z_L = 200\text{ }\Omega \parallel 15\text{ nH (balanced)}$

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	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	$^{\circ}$
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	$\alpha_{\max}$	—	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)	$\Delta\alpha_{5\text{MHz}}$	—	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



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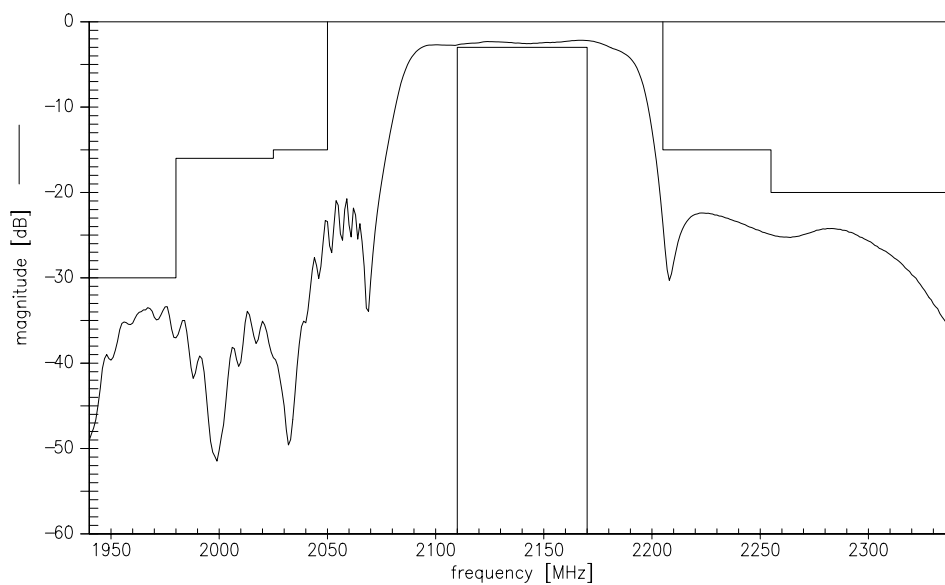
Low-Loss Filter for Mobile Communication

2140,0 MHz

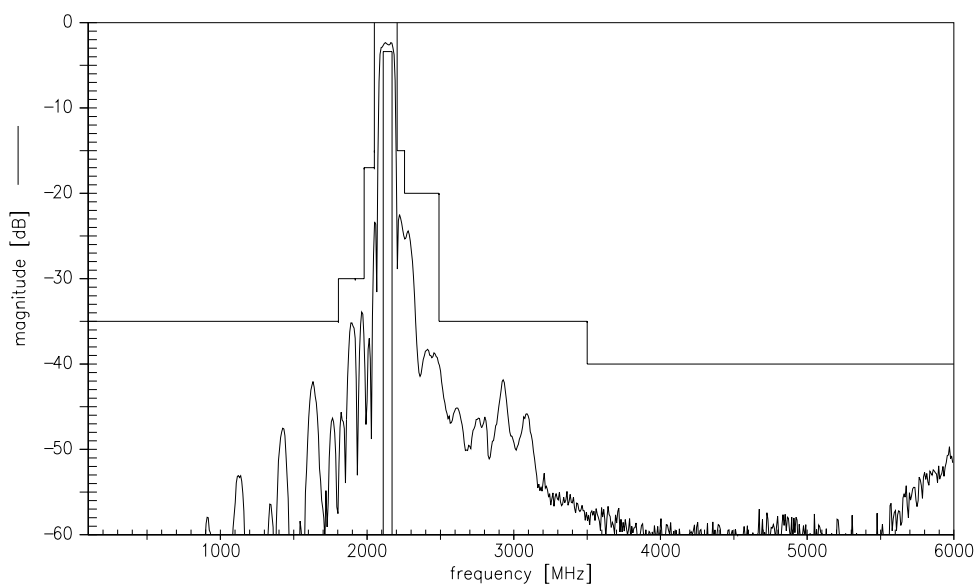
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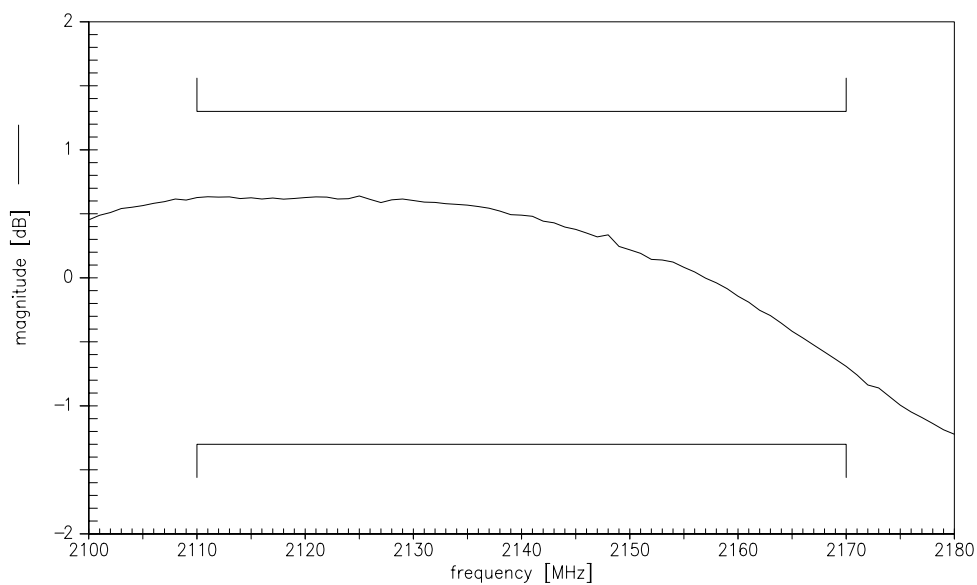
Transfer function (narrow band):



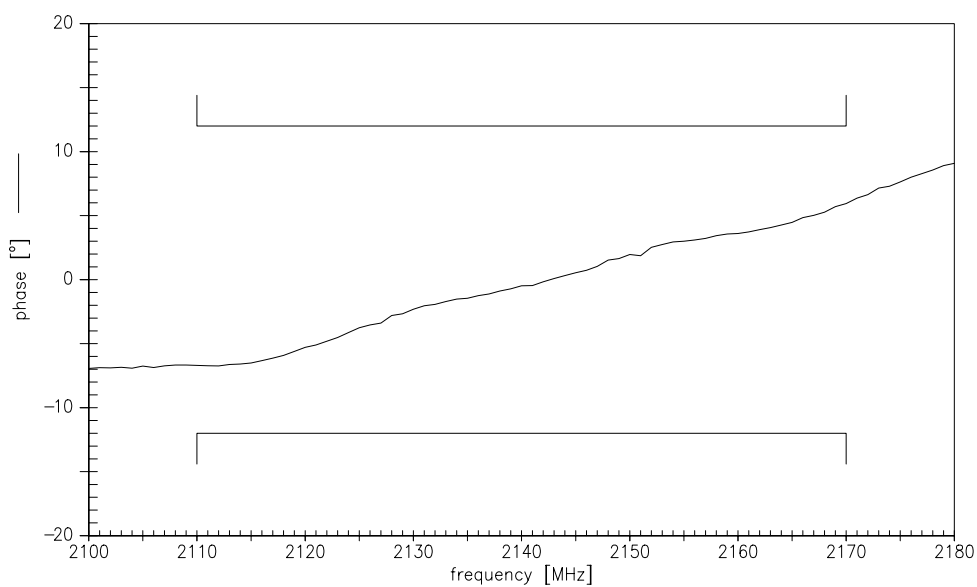
Transfer function (wide band):



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



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





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Operating temperature range: $T = +25\text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\text{ }\Omega \parallel 5,6\text{ nH}$
Terminating load impedance: $Z_L = 200\text{ }\Omega \parallel 15\text{ nH (balanced)}$

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	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	$^{\circ}$
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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Characteristics

Operating temperature range: $T = -20$ to $+85$ °C
Terminating source impedance: $Z_S = 50 \Omega \parallel 5,6$ nH
Terminating load impedance: $Z_L = 200 \Omega \parallel 15$ nH (balanced)

		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
2110,0 ... 2170,0 MHz		—	2,8	3,4	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
2110,0 ... 2170,0 MHz		—	0,6	1,3	dB
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5\text{MHz}}$				
2110,0 ... 2170,0 MHz		—	0,2	0,5	dB
Input VSWR					
2110,0 ... 2170,0 MHz		—	1,8	2,1	
Output VSWR					
2110,0 ... 2170,0 MHz		—	1,7	2,1	
Output amplitude balance (S_{31}/S_{21})					
1920,0 ... 1980,0 MHz		-1,3	0	1,3	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)					
1920,0 ... 1980,0 MHz		-12	0	12	°
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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