



SAW Components

Data Sheet B7712, Pb-Free





SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

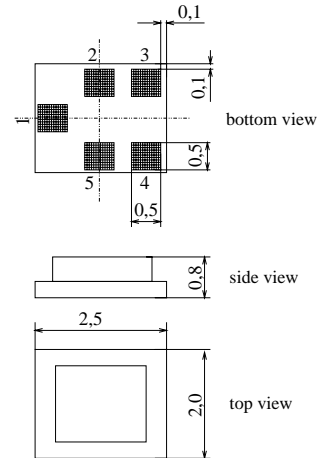
Data Sheet



Chip Sized SAW Package QCS5H

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
- Pb-Free
- Package for **Surface Mounted Technology (SMT)**



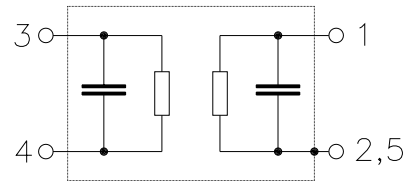
Terminals

- 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-K910	C61157-A7-A139	F61074-V8189-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



SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

Data Sheet



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}				
	2110,0 ... 2170,0 MHz	—	2,7	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	2110,0 ... 2170,0 MHz	—	0,6	1,0	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	—	2,5	2,8	
Output VSWR					
	2110,0 ... 2170,0 MHz	—	1,9	2,2	
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	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



SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

Data Sheet



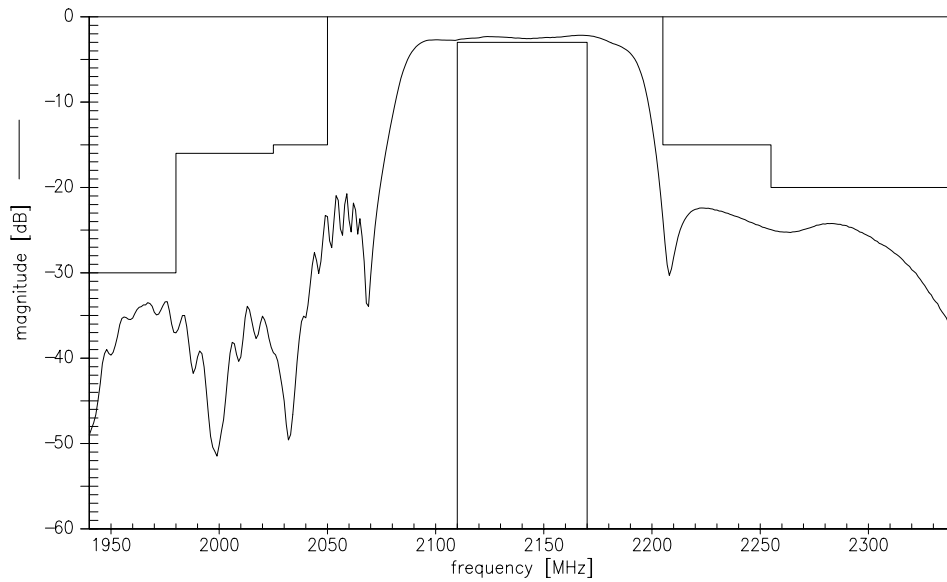
Characteristics

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

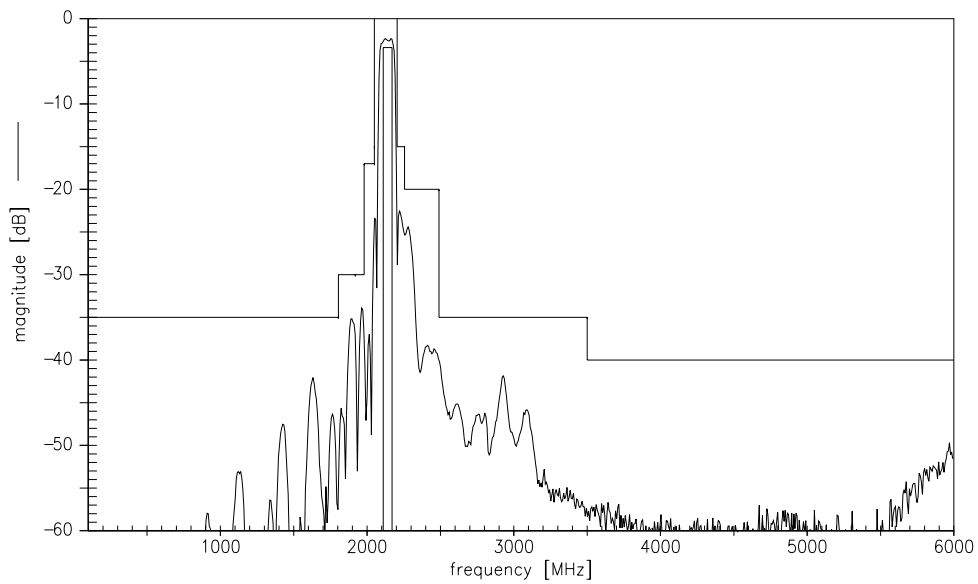
		min.	typ.	max.	
Center frequency	f_C	—	2140,0	—	MHz
Maximum insertion attenuation	α_{max}	—	2,8	3,4	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,3	dB
2110,0 ... 2170,0 MHz					
Amplitude ripple per 5MHz channel (p-p)	$\Delta\alpha_{5MHz}$	—	0,2	0,6	dB
2110,0 ... 2170,0 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):

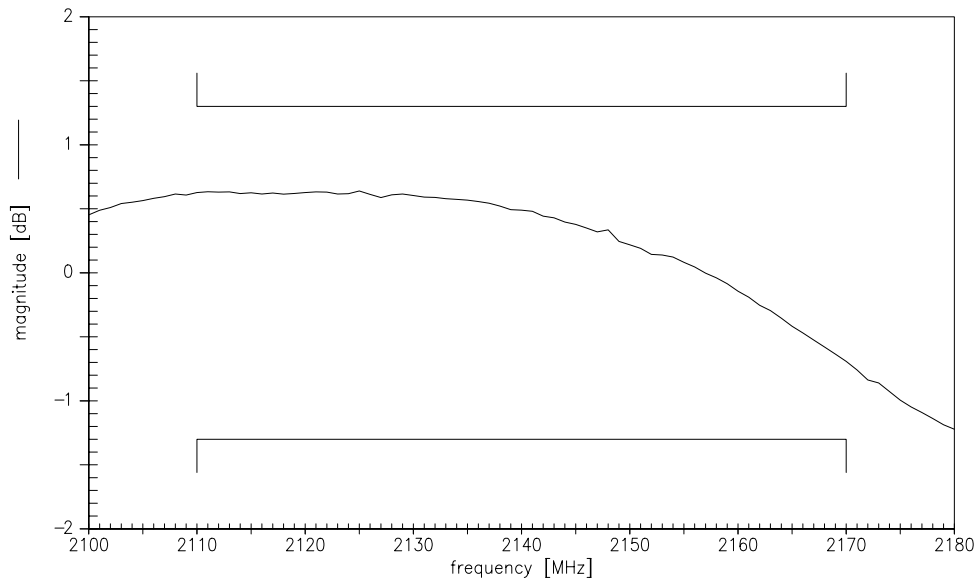


Transfer function (wide band):

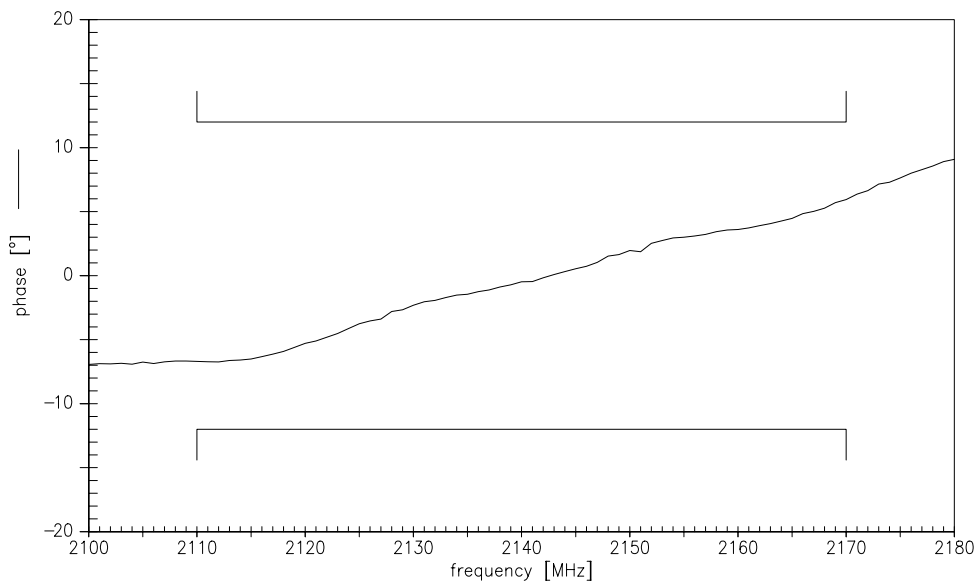




Output amplitude balance ($|S_{31}/S_{21}|$):



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





SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

Data Sheet



Characteristics

Operating temperature range: $T = +25\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega \parallel 5,6\ \text{nH}$
 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



SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

Data Sheet



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	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



SAW Components

B7712

Low-Loss Filter for Mobile Communication

2140,0 MHz

Data Sheet



Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC PD

P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2005. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.