EPCOS

SAW Components

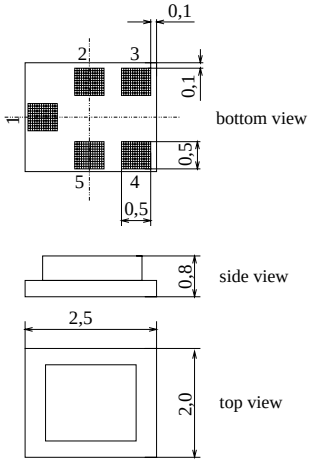
Data Sheet B7712, Pb-Free

Data Sheet

Chip **S**ized **S**AW **P**ackage **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 **S**urface **M**ounted **T**echnology (**SMT**)



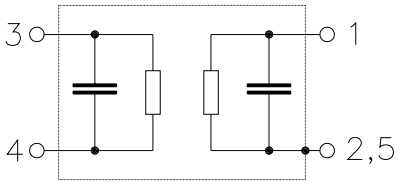
Terminals

- 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 **S**ensitive **D**evice (**ESD**)

Maximum ratings

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

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

Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 200 Ω || 15 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)	$\Delta\alpha_{5MHz}$				
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 ($\lvert S_{31}/S_{21}\rvert$)					
1920,0 ... 1980,0 MHz		-1,3	0	1,3	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
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

Characteristics

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

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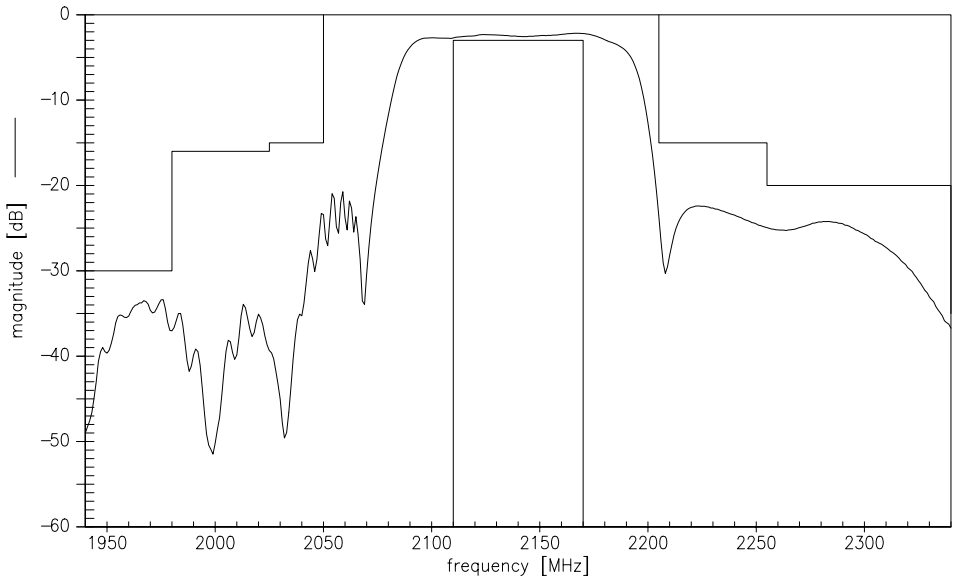
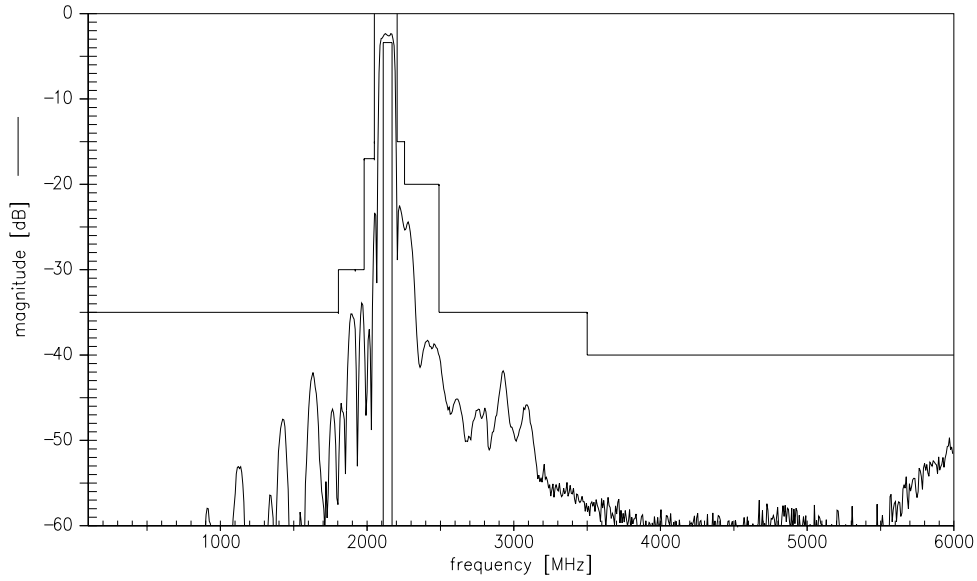
Attenuation	α				
50,0 ... 1805,0 MHz		35	43	—	dB
1805,0 ... 1880,0 MHz		30	35	—	dB
1920,0 ... 1980,0 MHz		30	33	—	dB
1980,0 ... 2050,0 MHz		17	20	—	dB
2205,0 ... 2255,0 MHz		15	19	—	dB
2255,0 ... 2490,0 MHz		20	23	—	dB
2490,0 ... 2550,0 MHz		35	38	—	dB
2550,0 ... 3500,0 MHz		35	39	—	dB
3500,0 ... 6000,0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

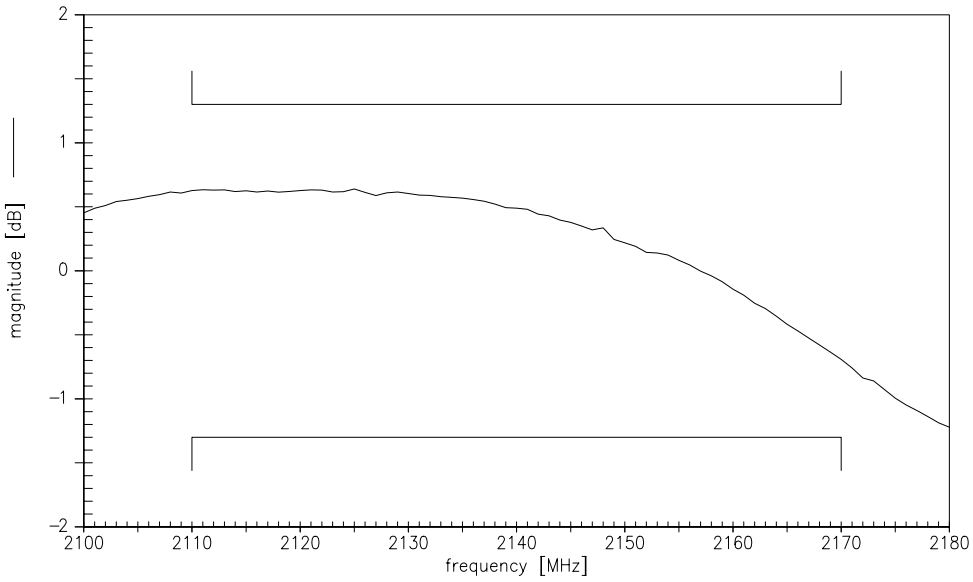
Transfer function (narrow band):



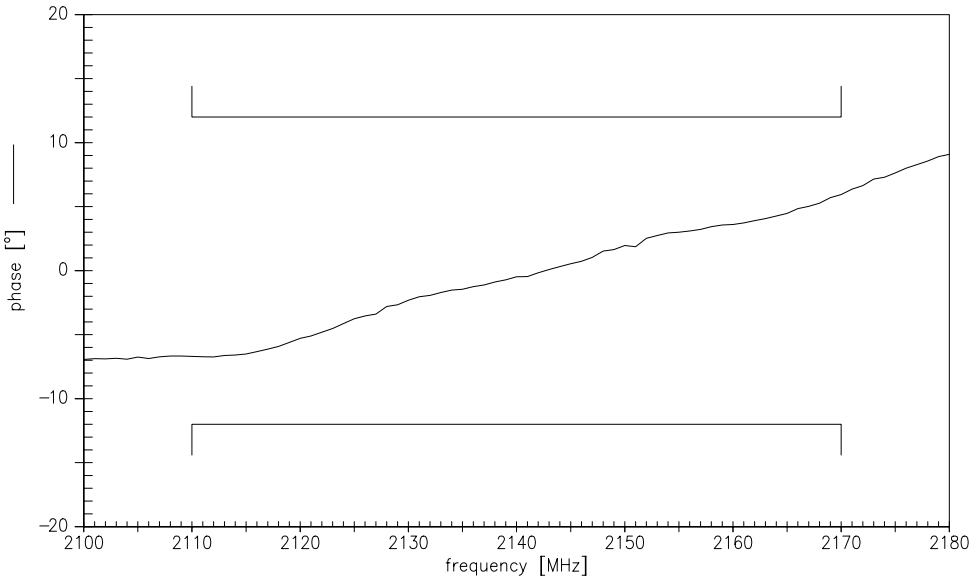
Transfer function (wide band):



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



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



Characteristics

Operating temperature range: T = +25 °C
Terminating source impedance: Z_S = 50 Ω || 5,6 nH
Terminating load impedance: Z_L = 200 Ω || 15 nH (balanced)

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

Characteristics

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

		min.	typ.	max.	
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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 ($\lvert S_{31}/S_{21}\rvert$)					
1920,0 ... 1980,0 MHz		-1,3	0	1,3	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
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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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