EPCOS

SAW Components

Data Sheet B7821

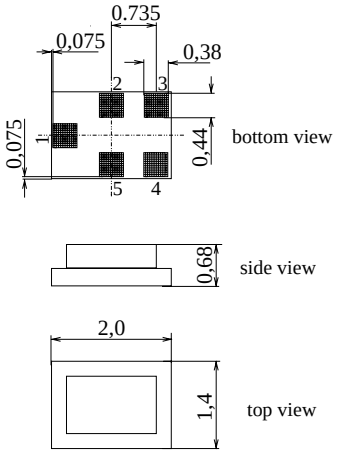
Chip sized SAW package QCS5C

Features

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Low amplitude ripple
- Usable passband 75 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 150Ω
- Suitable for GPRS class 1 to 12
- Package for **S**urface **M**ount **T**echnology (**SMT**)

Terminals

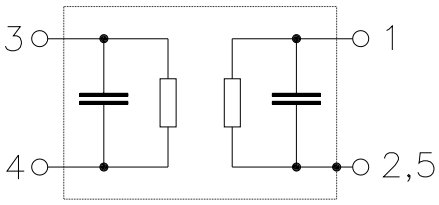
- Ni, gold-plated



Dimensions in mm, approx. weight 0,007 g

Pin configuration

1	Input, unbalanced
3, 4	Output, balanced
2, 5	Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B7821	B39182-B7821-C710	C61157-A7-A111	F61074-V8151-Z000

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

Maximum ratings

Operable temperature range	T	– 30 / + 85	˚C	
Storage temperature range	T_{stg}	– 40 / + 85	˚C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD} 1)	50	V	Machine Model, 10 pulses
Input power at				
GSM850, GSM900	P_{IN}	15	dBm	peak power of GSM signal,
GSM1800,GSM1900	P_{IN}	12	dBm	duty cycle 4:8
Tx bands				

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

Characteristics

Operating Temperature Range: T = +25 ± 2 °C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 150Ω (balanced) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	2,2	2,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	0,7	1,5	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,0	2,3	
Output VSWR					
1805,0 ...1880,0 MHz		—	1,8	2,2	
Output amplitude balance ($\lvert S_{31}/S_{21}\rvert$)					
1805,0 ...1880,0 MHz		-1,2	+0,6 / -1,0	1,2	dB
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180°$)					
1805,0 ...1880,0 MHz		-12	+6 / -8	12	°
Attenuation	α				
0,0 ... 1000,0 MHz		40	55	—	dB
1000,0 ... 1550,0 MHz		30	45	—	dB
1550,0 ... 1705,0 MHz		26	34	—	dB
1705,0 ... 1785,0 MHz		16	18	—	dB
1920,0 ... 1980,0 MHz		16	20	—	dB
1980,0 ... 2400,0 MHz		26	30	—	dB
2400,0 ... 5145,0 MHz		30	38	—	dB
5145,0 ... 5640,0 MHz		38	53	—	dB
5640,0 ... 6000,0 MHz		30	55	—	dB

Characteristics

Operating Temperature Range: T = -10 to +80˚C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 150Ω (balanced) ||15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	2,4	3,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	0,9	1,9	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,0	2,3	
Output VSWR					
1805,0 ...1880,0 MHz		—	1,8	2,2	
Output amplitude balance ($\lvert S_{21}/S_{31}\rvert$)					
1805,0 ...1880,0 MHz		-1,2	+0,6 / -1,0	1,2	dB
Output phase balance ($\phi(S_{21})-\phi(S_{31})+180^\circ$)					
1805,0 ...1880,0 MHz		-12	+6 / -8	12	˚
Attenuation	α				
0,0 ... 1000,0 MHz		40	55	—	dB
1000,0 ... 1550,0 MHz		30	45	—	dB
1550,0 ... 1705,0 MHz		26	34	—	dB
1705,0 ... 1785,0 MHz		12	18	—	dB
1920,0 ... 1980,0 MHz		15	20	—	dB
1980,0 ... 2400,0 MHz		26	30	—	dB
2400,0 ... 5145,0 MHz		30	38	—	dB
5145,0 ... 5640,0 MHz		38	53	—	dB
5640,0 ... 6000,0 MHz		30	55	—	dB

Characteristics

Operating Temperature Range: T = -30 to +80˚C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 150Ω (balanced) ||15 nH

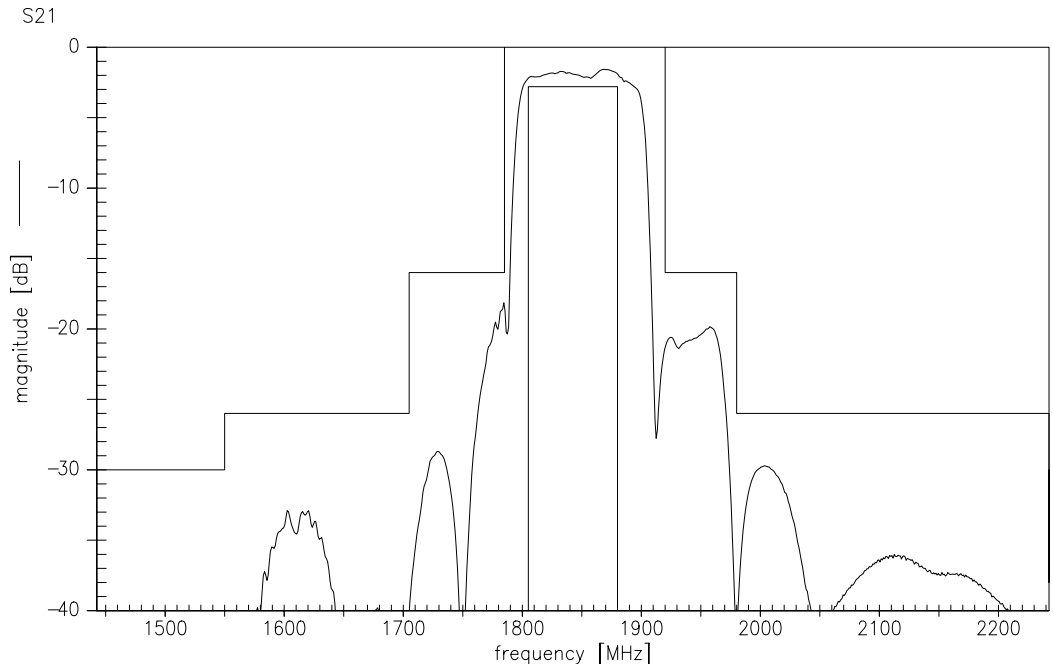
		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	2,7	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	1,2	2,9	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,0	2,4	
Output VSWR					
1805,0 ...1880,0 MHz		—	1,8	2,3	
Output amplitude balance ($\lvert S_{21}/S_{31}\rvert$)					
1805,0 ...1880,0 MHz		-1,4	+0,7 / -1,0	1,4	dB
Output phase balance ($\phi(S_{21})-\phi(S_{31})+180^\circ$)					
1805,0 ...1880,0 MHz		-12	+6 / -8	12	˚
Attenuation	α				
0,0 ... 1000,0 MHz		40	55	—	dB
1000,0 ... 1550,0 MHz		30	45	—	dB
1550,0 ... 1705,0 MHz		26	34	—	dB
1705,0 ... 1785,0 MHz		12	18	—	dB
1920,0 ... 1980,0 MHz		15	20	—	dB
1980,0 ... 2400,0 MHz		22	30	—	dB
2400,0 ... 5145,0 MHz		30	38	—	dB
5145,0 ... 5640,0 MHz		38	53	—	dB
5640,0 ... 6000,0 MHz		30	55	—	dB

Characteristics

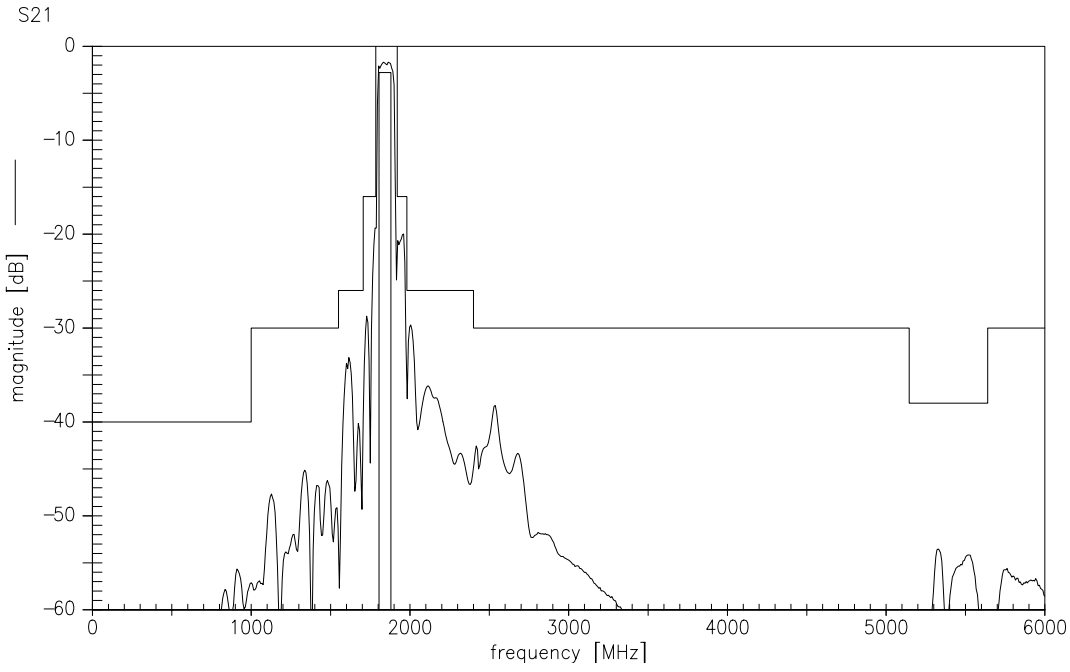
Operating Temperature Range: T = -30 to +85˚C
Terminating source impedance: Z_S = 50Ω (unbalanced)
Terminating load impedance: Z_L = 150Ω (balanced) ||15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}				
1805,0 ... 1880,0 MHz		—	2,7	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1805,0 ... 1880,0 MHz		—	1,2	2,9	dB
Input VSWR					
1805,0 ...1880,0 MHz		—	2,0	2,4	
Output VSWR					
1805,0 ...1880,0 MHz		—	1,8	2,3	
Output amplitude balance ($\|S_{21}/S_{31}\|$)					
1805,0 ...1880,0 MHz		-1,4	+0,7 / -1,0	1,4	dB
Output phase balance ($\phi(S_{21})-\phi(S_{31})+180^\circ$)					
1805,0 ...1880,0 MHz		-12	+6 / -8	12	˚
Attenuation	α				
0,0 ... 1000,0 MHz		40	55	—	dB
1000,0 ... 1550,0 MHz		30	45	—	dB
1550,0 ... 1705,0 MHz		26	34	—	dB
1705,0 ... 1785,0 MHz		11	18	—	dB
1920,0 ... 1980,0 MHz		15	20	—	dB
1980,0 ... 2400,0 MHz		22	30	—	dB
2400,0 ... 5145,0 MHz		30	38	—	dB
5145,0 ... 5640,0 MHz		38	53	—	dB
5640,0 ... 6000,0 MHz		30	55	—	dB

Transfer function (spec for 25˚C)



Transfer function (wideband)



Published by EPCOS AG
Surface Acoustic Wave Components Division, SAW MC WT
P.O. Box 80 17 09, D-81617 München

The information contained in this brochure describes the type of component and shall not be considered as guaranteed characteristics. 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.