



SAW Components

Data Sheet B7821

Data Sheet

An abstract graphic featuring the word "EPCOS" in large, glowing, 3D letters. The letters are white with a blue glow and are positioned diagonally across the frame. In the background, there is a faint, stylized globe with circuitry patterns, suggesting a global network or technology theme. The overall color scheme is dark with blue and white highlights.



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



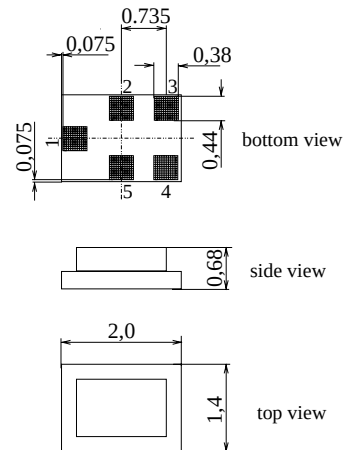
Chip sized SAW package QCS5C

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 **Surface Mount Technology (SMT)**

Terminals

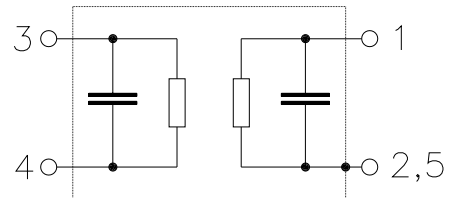
- Ni, gold-plated



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 Sensitive Device (ESD)

Maximum ratings

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

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



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



Characteristics

Operating Temperature Range: $T = +25 \pm 2 \text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
Terminating load impedance: $Z_L = 150\Omega$ (balanced) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2,2	2,8	dB
1805,0 ... 1880,0 MHz		—	2,2	2,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,5	dB
1805,0 ... 1880,0 MHz		—	0,7	1,5	dB
Input VSWR		—	2,0	2,3	
1805,0 ... 1880,0 MHz		—	2,0	2,3	
Output VSWR		—	1,8	2,2	
1805,0 ... 1880,0 MHz		—	1,8	2,2	
Output amplitude balance (S_{31} / S_{21})		-1,2	+0,6 / -1,0	1,2	dB
1805,0 ... 1880,0 MHz		-1,2	+0,6 / -1,0	1,2	dB
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)		-12	+6 / -8	12	$^{\circ}$
1805,0 ... 1880,0 MHz		-12	+6 / -8	12	$^{\circ}$
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



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



Characteristics

Operating Temperature Range: $T = -10$ to $+80^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
Terminating load impedance: $Z_L = 150\Omega$ (balanced) $\parallel 15\text{ nH}$

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2,4	3,2	dB
1805,0 ... 1880,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,9	1,9	dB
1805,0 ... 1880,0 MHz					
Input VSWR		—	2,0	2,3	
1805,0 ... 1880,0 MHz					
Output VSWR		—	1,8	2,2	
1805,0 ... 1880,0 MHz					
Output amplitude balance (S_{21}/S_{31})		-1,2	+0,6 / -1,0	1,2	dB
1805,0 ... 1880,0 MHz					
Output phase balance ($\phi(S_{21}) - \phi(S_{31}) + 180^{\circ}$)		-12	+6 / -8	12	$^{\circ}$
1805,0 ... 1880,0 MHz					
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



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



Characteristics

Operating Temperature Range: $T = -30$ to $+80^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
Terminating load impedance: $Z_L = 150\Omega$ (balanced) ||15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$	—	2,7	4,2	dB
1805,0 ... 1880,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	1,2	2,9	dB
1805,0 ... 1880,0 MHz					
Input VSWR		—	2,0	2,4	
1805,0 ... 1880,0 MHz					
Output VSWR		—	1,8	2,3	
1805,0 ... 1880,0 MHz					
Output amplitude balance (S_{21}/S_{31})		-1,4	+0,7 / -1,0	1,4	dB
1805,0 ... 1880,0 MHz					
Output phase balance ($\phi(S_{21})-\phi(S_{31})+180^{\circ}$)		-12	+6 / -8	12	$^{\circ}$
1805,0 ... 1880,0 MHz					
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



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



Characteristics

Operating Temperature Range: $T = -30$ to $+85^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50\Omega$ (unbalanced)
Terminating load impedance: $Z_L = 150\Omega$ (balanced) $\parallel 15\text{ nH}$

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	$\alpha_{\max}$				
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



SAW Components

B7821

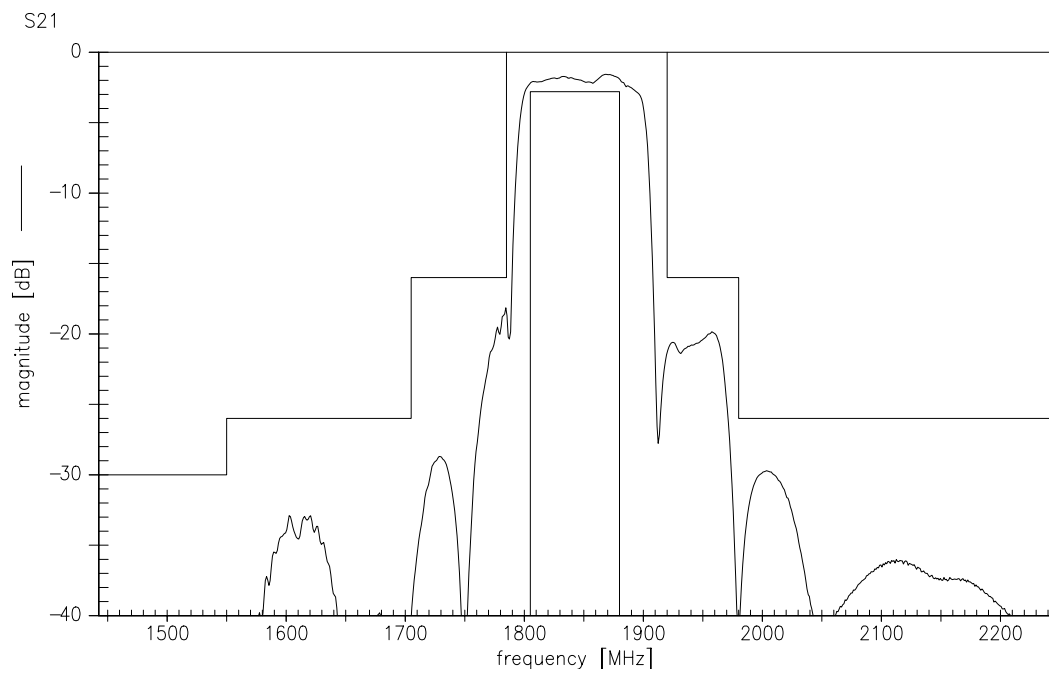
Low-Loss Filter for Mobile Communication

1842,50 MHz

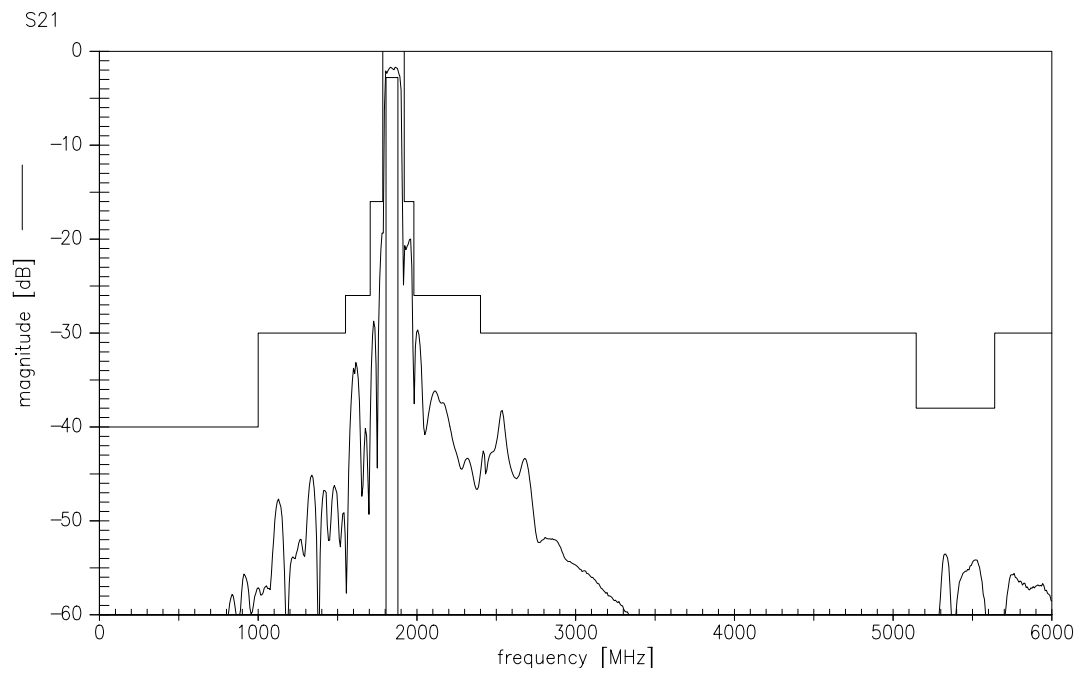
Data Sheet



Transfer function (spec for 25°C)



Transfer function (wideband)





SAW Components	B7821
Low-Loss Filter for Mobile Communication	1842,50 MHz
Data Sheet	SMD

Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC WT

P.O. Box 80 17 09, D-81617 München

© EPCOS AG 2004. All Rights Reserved. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

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.