



SAW Components

Data Sheet B7821

Data Sheet

A large, stylized, 3D-rendered graphic of the EPCOS logo. The letters "EPCOS" are rendered in a white, glowing, sans-serif font, appearing to be part of a larger, curved structure that resembles the top of the EPCOS logo triangle. The background is dark and textured, with a faint map of the world visible.



SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



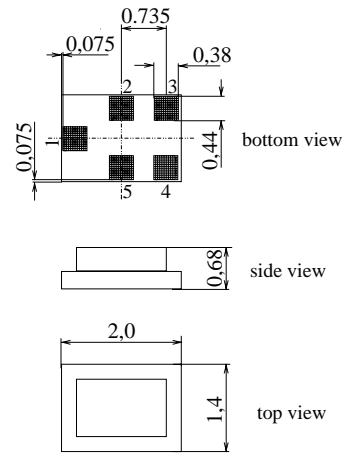
Chip sized SAW package QCS5C

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

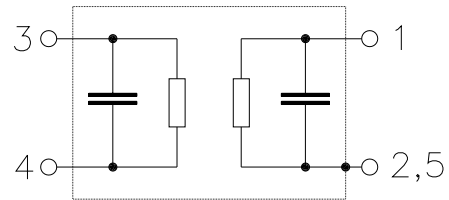
- Ni, gold-plated



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



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	α_{max}	—	2,2	2,8	dB
	1805,0 ... 1880,0 MHz				
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,7	1,5	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_{31} / S_{21})		-1,2	+0,6 / -1,0	1,2	dB
	1805,0 ... 1880,0 MHz				
Output phase balance ($\phi(S_{31})-\phi(S_{21})+180^\circ$)		-12	+6 / -8	12	°
	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	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) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{\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	°
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	α_{\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) || 15 nH

		min.	typ.	max.	
Center frequency	f_C	—	1842,5	—	MHz
Maximum insertion attenuation	α_{\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	°
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		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

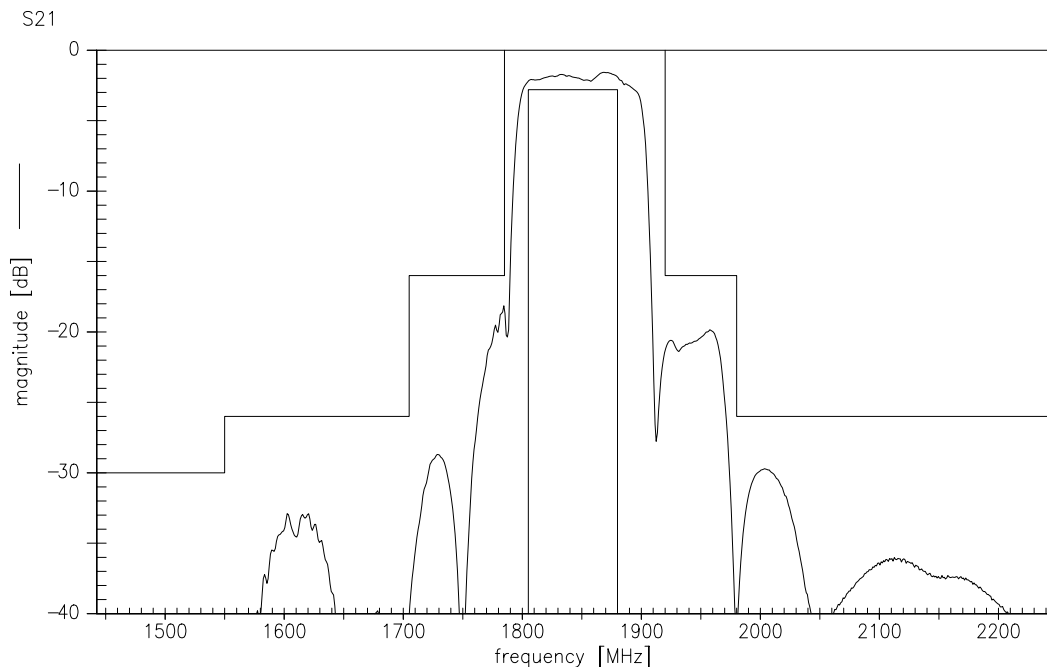
Low-Loss Filter for Mobile Communication

1842,50 MHz

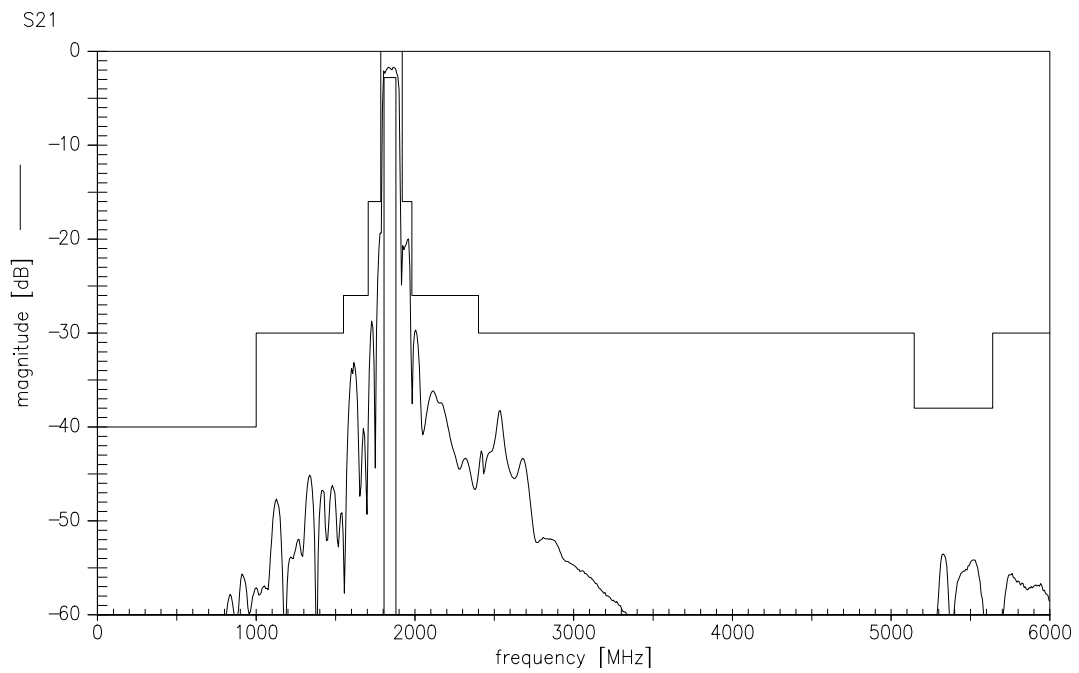
Data Sheet



Transfer function (spec for 25°C)



Transfer function (wideband)





SAW Components

B7821

Low-Loss Filter for Mobile Communication

1842,50 MHz

Data Sheet



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.