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# *SAW Components*

*Data Sheet B7716*

Data Sheet

A large, stylized, 3D-rendered graphic of the EPCOS logo. The letters "EPCOS" are rendered in a bold, sans-serif font, appearing to be part of a curved, metallic-looking structure. The background is dark and textured, suggesting a globe or a complex circuit board layout.



**SAW Components**

**B7716**

**Low-Loss Filter for Mobile Communication**

**1842,50 MHz**

**Data Sheet**



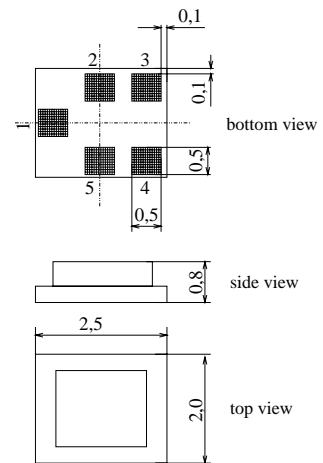
Chip sized SAW package

**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 200Ω
- Suitable for GPRS class 1 to 12
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Ceramic SMD package

**Terminals**

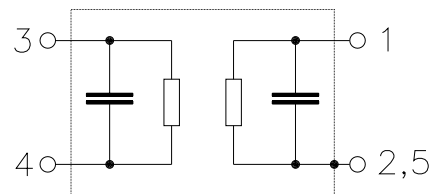
- Ni, gold-plated



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
B7716	B39182-B7716-B610	C61157-A7-A71	F61074-V8104-Z000

Electrostatic Sensitive Device (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	$V_{ESD}$	50	V	
Input power at				
GSM850, GSM900	$P_{IN}$	15	dBm	peak power of GSM signal duty cycle 4:8
GSM1800, GSM1900	$P_{IN}$	12	dBm	
Tx bands				



**Characteristics**

Operating Temperature Range:  $T = +25 \pm 2^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50\Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 200\Omega$  (balanced) || 18nH

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	—	3,0	3,5	dB
1805,0 ... 1880,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,1	1,6	dB
1805,0 ... 1880,0 MHz					
<b>Input VSWR</b>		—	2,2	2,4	
1805,0 ... 1880,0 MHz					
<b>Output VSWR</b>		—	2,2	2,4	
1805,0 ... 1880,0 MHz					
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^\circ$ )		-12	—	+12	degree
1805,0 ... 1880,0 MHz					
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )		-1,4	—	1,4	dB
1805,0 ... 1880,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1200,0 MHz		40	47	—	dB
1200,0 ... 1705,0 MHz		30	36	—	dB
1705,0 ... 1785,0 MHz		15	19	—	dB
1920,0 ... 1980,0 MHz		15	20	—	dB
1980,0 ... 2200,0 MHz		20	22	—	dB
2200,0 ... 3000,0 MHz		30	38	—	dB
3000,0 ... 6000,0 MHz		40	48	—	dB



SAW Components

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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:  $Z_L = 200\Omega$  (balanced) ||  $18\text{nH}$

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$	—	3,2	3,5	dB
1805,0 ... 1880,0 MHz					
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	1,3	1,6	dB
1805,0 ... 1880,0 MHz					
<b>Input VSWR</b>		—	2,4	2,6	
1805,0 ... 1880,0 MHz					
<b>Output VSWR</b>		—	2,4	2,6	
1805,0 ... 1880,0 MHz					
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$ )		-12	—	+12	degree
1805,0 ... 1880,0 MHz					
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )		-1,4	—	1,4	dB
1805,0 ... 1880,0 MHz					
<b>Attenuation</b>	$\alpha$				
0,0 ... 1200,0 MHz		40	47	—	dB
1200,0 ... 1705,0 MHz		30	36	—	dB
1705,0 ... 1785,0 MHz		10	15	—	dB
1920,0 ... 1980,0 MHz		10	20	—	dB
1980,0 ... 2200,0 MHz		20	22	—	dB
2200,0 ... 3000,0 MHz		30	38	—	dB
3000,0 ... 6000,0 MHz		40	48	—	dB



**Characteristics**

Operating Temperature Range:  $T = -30$  to  $+85^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\Omega$  (unbalanced)  
 Terminating load impedance:  $Z_L = 200\Omega$  (balanced) ||  $18\text{nH}$

		min.	typ.	max.	
<b>Center frequency</b>	$f_C$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\text{max}}$				
	1805,0 ... 1880,0 MHz	—	3,5	4,0	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	1805,0 ... 1880,0 MHz	—	1,6	2,1	dB
<b>Input VSWR</b>					
	1805,0 ... 1880,0 MHz	—	2,5	2,7	
<b>Output VSWR</b>					
	1805,0 ... 1880,0 MHz	—	2,5	2,7	
<b>Output phase balance</b> ( $\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$ )					
	1805,0 ... 1880,0 MHz	-12	—	+12	degree
<b>Output amplitude balance</b> ( $ S_{31}/S_{21} $ )					
	1805,0 ... 1880,0 MHz	-1,4	—	1,4	dB
<b>Attenuation</b>	$\alpha$				
	0,0 ... 1200,0 MHz	40	47	—	dB
	1200,0 ... 1705,0 MHz	30	36	—	dB
	1705,0 ... 1785,0 MHz	9	12	—	dB
	1920,0 ... 1980,0 MHz	10	20	—	dB
	1980,0 ... 2200,0 MHz	20	22	—	dB
	2200,0 ... 3000,0 MHz	30	38	—	dB
	3000,0 ... 6000,0 MHz	40	48	—	dB



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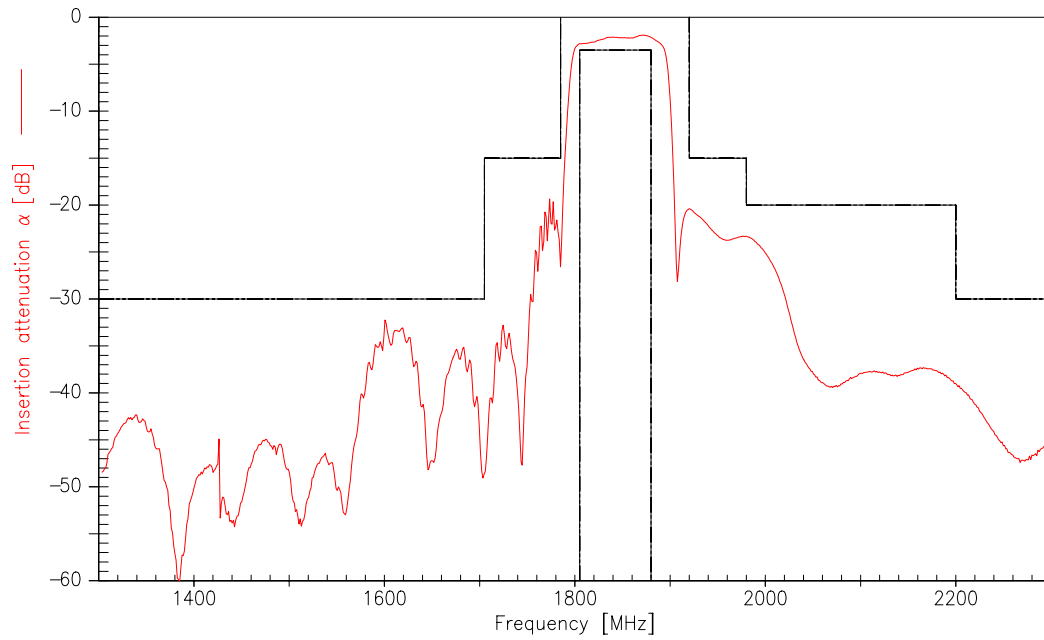
Low-Loss Filter for Mobile Communication

1842,50 MHz

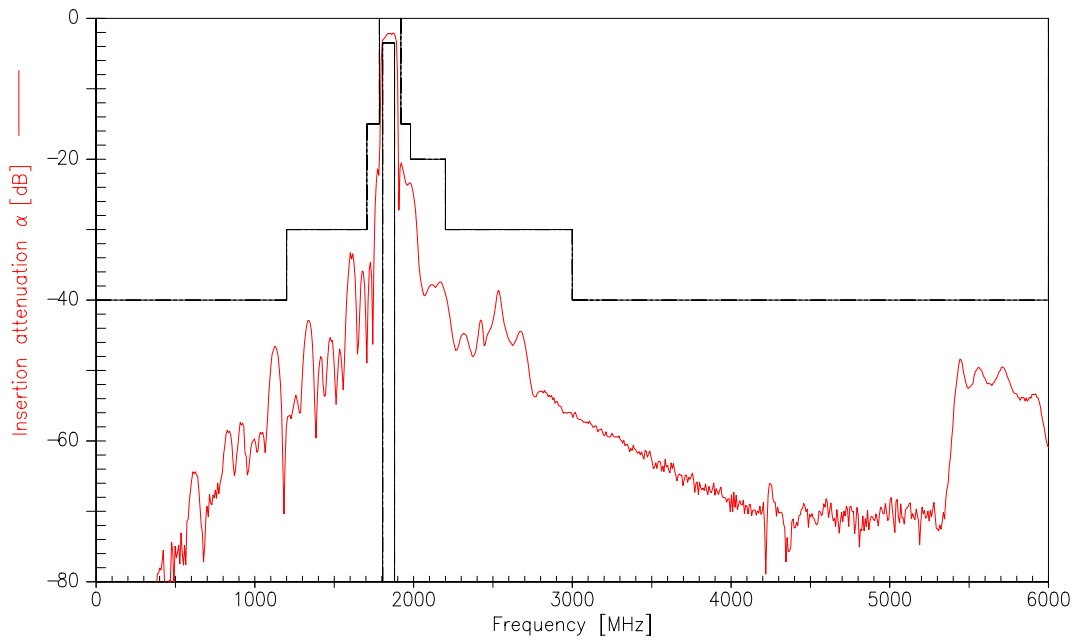
Data Sheet



Transfer function (spec for 25° C)



Transfer function (wideband)





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Data Sheet



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