



# SAW Components

Data Sheet B4221





**SAW Components**

**B4221**

**Low-Loss Dual Band Filter for Mobile Communication**

**942,5 / 1842,5 MHz**

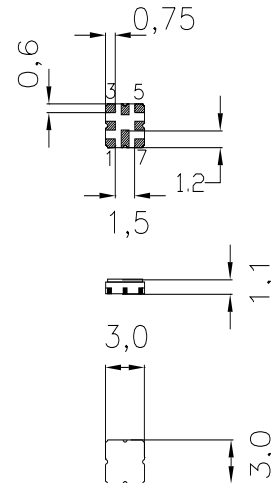
**Preliminary Data**



Ceramic package **QCC8D**

**Features**

- Low-loss RF filter for mobile telephone EGSM and PCN system , receive path
- Usable passband:  
Filter 1 (EGSM): 35 MHz  
Filter 2 (PCN): 75 MHz
- Suitable for GPRS class 1 to 12
- Ceramic package for **Surface Mounted Technology (SMT)**



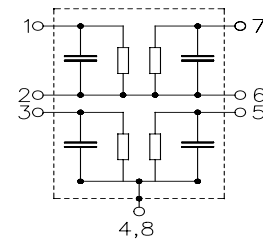
Dimensions in mm, approx. weight 0,037 g

**Terminals**

- Ni, gold-plated

**Pin configuration**

- |      |                     |
|------|---------------------|
| 1    | Input [ Filter 1 ]  |
| 3    | Input [ Filter 2 ]  |
| 5    | Output [ Filter 2 ] |
| 7    | Output [ Filter 1 ] |
| 2, 6 | to be grounded      |
| 4, 8 | Case ground         |



Type	Ordering code	Marking and Package according to	Packing according to
B4221	B39182-B4221-U810	C61157-A7-A72	F61074-V8101-Z000

Electrostatic Sensitive Device (ESD)

**Maximum ratings**

Operable temperature range	$T$	- 20 / + 70	°C	
Storage temperature range	$T_{stg}$	- 40 / + 85	°C	
DC voltage	$V_{DC}$	3	V	
Input power max.	$P_{IN}$			
EGSM:		15	dBm	
PCN:		12	dBm	



**Characteristics Filter 1 ( EGSM )**

Operating temperature range:  $T = 25 \pm 2^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

			min.	typ.	max.	
<b>Center frequency</b>	$f_c$		—	942,50	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	925,0 ... 960,0 MHz	—	3,2	3,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	925,0 ... 960,0 MHz	—	1,4	1,9	dB
<b>Input VSWR</b>		925,0 ... 960,0 MHz	—	1,7	2,1	
<b>Output VSWR</b>		925,0 ... 960,0 MHz	—	1,7	2,1	
<b>Attenuation</b>	$\alpha_{min}$	0,0 ... 700,0 MHz	40	45	—	dB
		700,0 ... 880,0 MHz	35	39	—	dB
		880,0 ... 905,0 MHz	31	36	—	dB
		905,0 ... 915,0 MHz	15	20	—	dB
		980,0 ... 982,0 MHz	20	27	—	dB
		982,0 ... 1005,0 MHz	25	29	—	dB
		1005,0 ... 1035,0 MHz	35	43	—	dB
		1035,0 ... 1300,0 MHz	33	37	—	dB
		1300,0 ... 1360,0 MHz	32	35	—	dB
		1360,0 ... 2500,0 MHz	28	32	—	dB
		2500,0 ... 3120,0 MHz	15	22	—	dB
		3120,0 ... 3700,0 MHz	8	11	—	dB
		3700,0 ... 6000,0 MHz	6	8	—	dB
<b>Input reflection coefficient @ 1842,5 Mhz</b>	Phase		-130	-120	-110	°



**Characteristics Filter 1 ( EGSM )**

Operating temperature range:  $T = -20$  to  $+70^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

			min.	typ.	max.	
<b>Center frequency</b>	$f_c$		—	942,50	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$	925,0 ... 960,0 MHz	—	3,4	3,9	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	925,0 ... 960,0 MHz	—	1,6	2,0	dB
<b>Input VSWR</b>		925,0 ... 960,0 MHz	—	1,8	2,2	
<b>Output VSWR</b>		925,0 ... 960,0 MHz	—	1,8	2,2	
<b>Attenuation</b>	$\alpha_{\min}$					
		0,0 ... 700,0 MHz	40	45	—	dB
		700,0 ... 880,0 MHz	35	39	—	dB
		880,0 ... 905,0 MHz	31	36	—	dB
		905,0 ... 915,0 MHz	15	20	—	dB
		980,0 ... 982,0 MHz	20	27	—	dB
		982,0 ... 1005,0 MHz	25	29	—	dB
		1005,0 ... 1035,0 MHz	35	43	—	dB
		1035,0 ... 1300,0 MHz	33	37	—	dB
		1300,0 ... 1360,0 MHz	32	35	—	dB
		1360,0 ... 2500,0 MHz	28	32	—	dB
		2500,0 ... 3120,0 MHz	15	22	—	dB
		3120,0 ... 3700,0 MHz	8	11	—	dB
		3700,0 ... 6000,0 MHz	6	8	—	dB
<b>Input reflection coefficient @ 1842,5 MHz</b>						
	Phase		-130	-120	-110	$^{\circ}$



**Characteristics Filter 2 ( PCN )**

Operating temperature range:  $T = 25 \pm 2^\circ\text{C}$

Terminating source impedance:  $Z_S = 50 \Omega$

Terminating load impedance:  $Z_L = 50 \Omega$

			min.	typ.	max.	
<b>Center frequency</b>	$f_c$		—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{\max}$					
	1805,0 ... 1815,0	MHz	—	3,0	3,5	dB
	1815,0 ... 1870,0	MHz	—	2,5	3,3	dB
	1870,0 ... 1880,0	MHz	—	3,0	3,5	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$					
	1805,0 ... 1880,0	MHz	—	1,5	1,9	dB
<b>Input VSWR</b>						
	1805,0 ... 1880,0	MHz	—	1,8	2,1	
<b>Output VSWR</b>						
	1805,0 ... 1880,0	MHz	—	1,8	2,1	
<b>Attenuation</b>	$\alpha_{\min}$					
	0,0 ... 1480,0	MHz	37	40	—	dB
	1480,0 ... 1710,0	MHz	25	35	—	dB
	1710,0 ... 1765,0	MHz	16	24	—	dB
	1765,0 ... 1785,0	MHz	11	19	—	dB
	1907,0 ... 1914,0	MHz	11	22	—	dB
	1914,0 ... 1980,0	MHz	16	23	—	dB
	1980,0 ... 3000,0	MHz	22	26	—	dB
	3000,0 ... 3400,0	MHz	20	29	—	dB
	3400,0 ... 4000,0	MHz	18	24	—	dB
	4000,0 ... 5000,0	MHz	12	19	—	dB
	5000,0 ... 6000,0	MHz	8	12	—	dB
<b>Input reflection coefficient @ 947,5 MHz</b>						
	Phase		-150	-140	-130	°



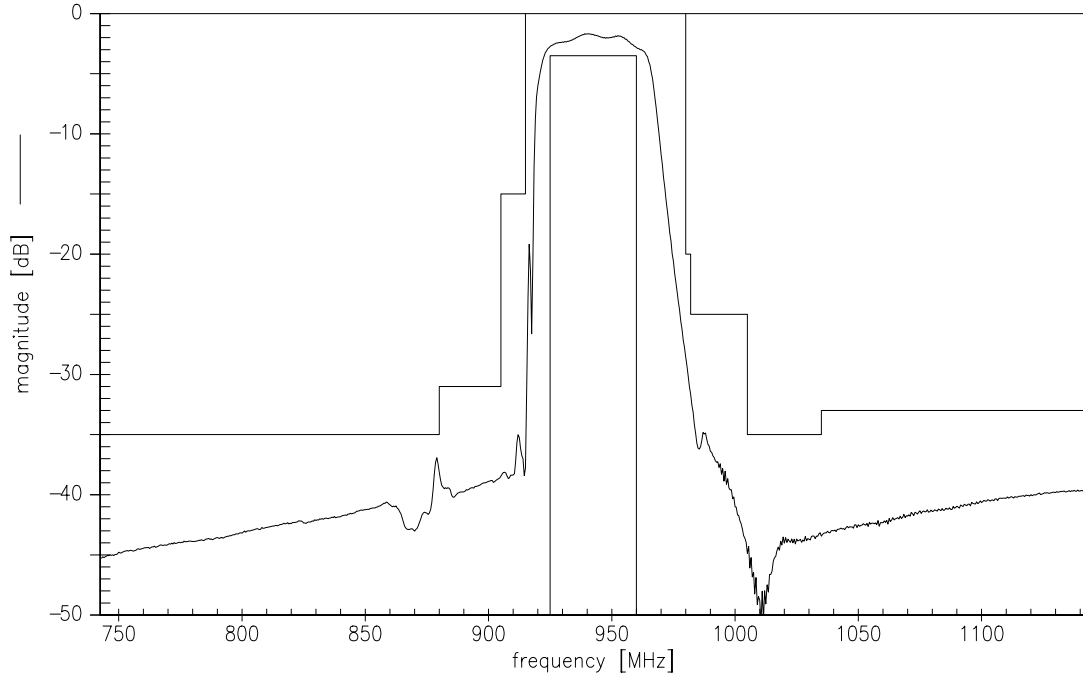
**Characteristics Filter 2 ( PCN )**

Operating temperature range:  $T = -20$  to  $+70^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

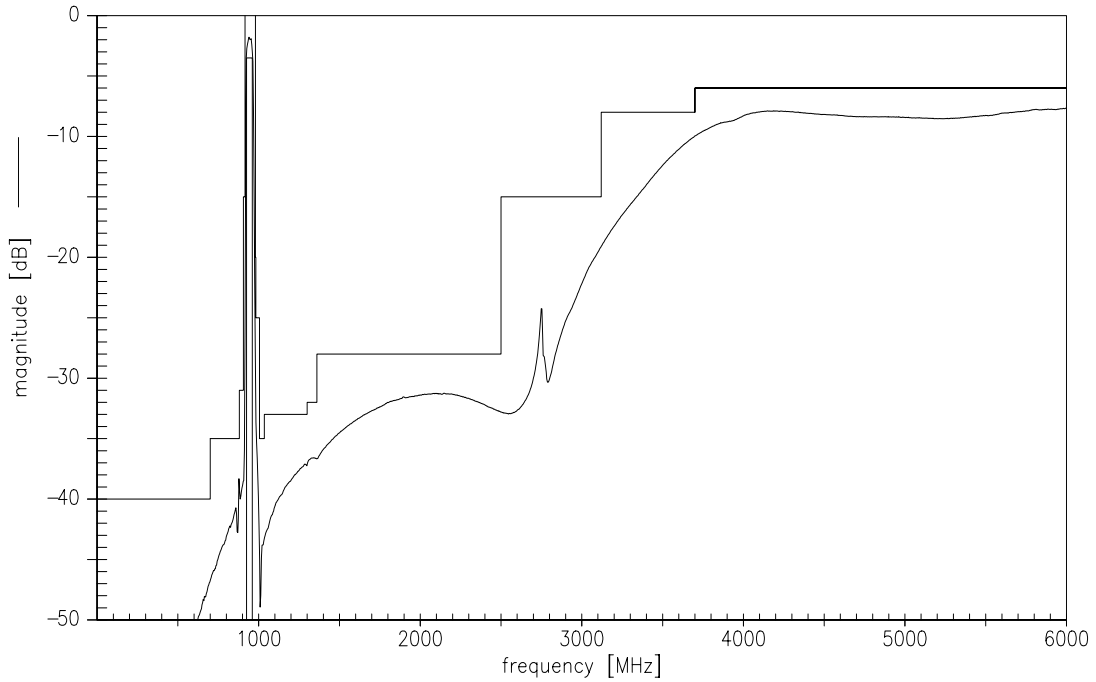
		min.	typ.	max.	
<b>Center frequency</b>	$f_c$	—	1842,5	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
1805,0 ...1815,0	MHz	—	3,3	3,9	dB
1815,0 ...1870,0	MHz	—	2,6	3,3	dB
1870,0 ...1880,0	MHz	—	3,3	3,9	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
1805,0 ...1880,0	MHz	—	1,6	2,0	dB
<b>Input VSWR</b>					
1805,0 ...1880,0	MHz	—	1,9	2,2	
<b>Output VSWR</b>					
1805,0 ...1880,0	MHz	—	1,9	2,2	
<b>Attenuation</b>	$\alpha_{min}$				
0,0 ...1480,0	MHz	37	40	—	dB
1480,0 ...1710,0	MHz	25	35	—	dB
1710,0 ...1765,0	MHz	15	24	—	dB
1765,0 ...1785,0	MHz	10	19	—	dB
1907,0 ...1914,0	MHz	10	22	—	dB
1914,0 ...1980,0	MHz	15	23	—	dB
1980,0 ...3000,0	MHz	22	26	—	dB
3000,0 ...3400,0	MHz	20	29	—	dB
3400,0 ...4000,0	MHz	18	24	—	dB
4000,0 ...5000,0	MHz	12	19	—	dB
5000,0 ...6000,0	MHz	8	12	—	dB
<b>Input reflection coefficient @ 947,5 MHz</b>					
	Phase	-150	-140	-130	°



Transfer function Filter 1 ( EGSM )- spec at 25 °C

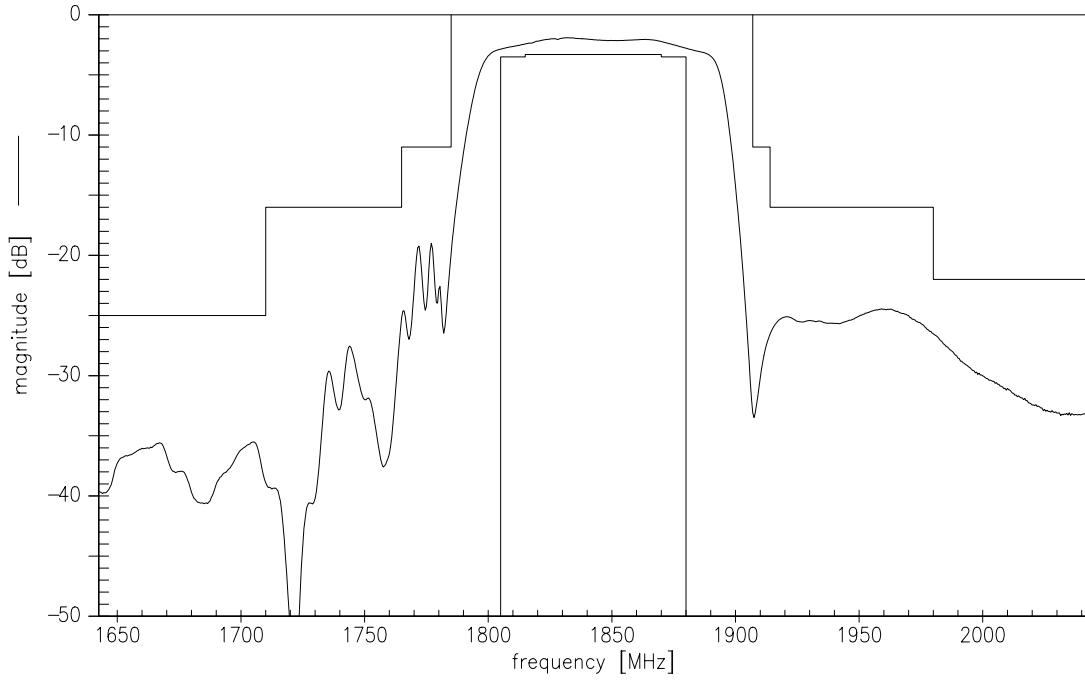


Transfer function Filter 1 ( EGSM ) - wideband

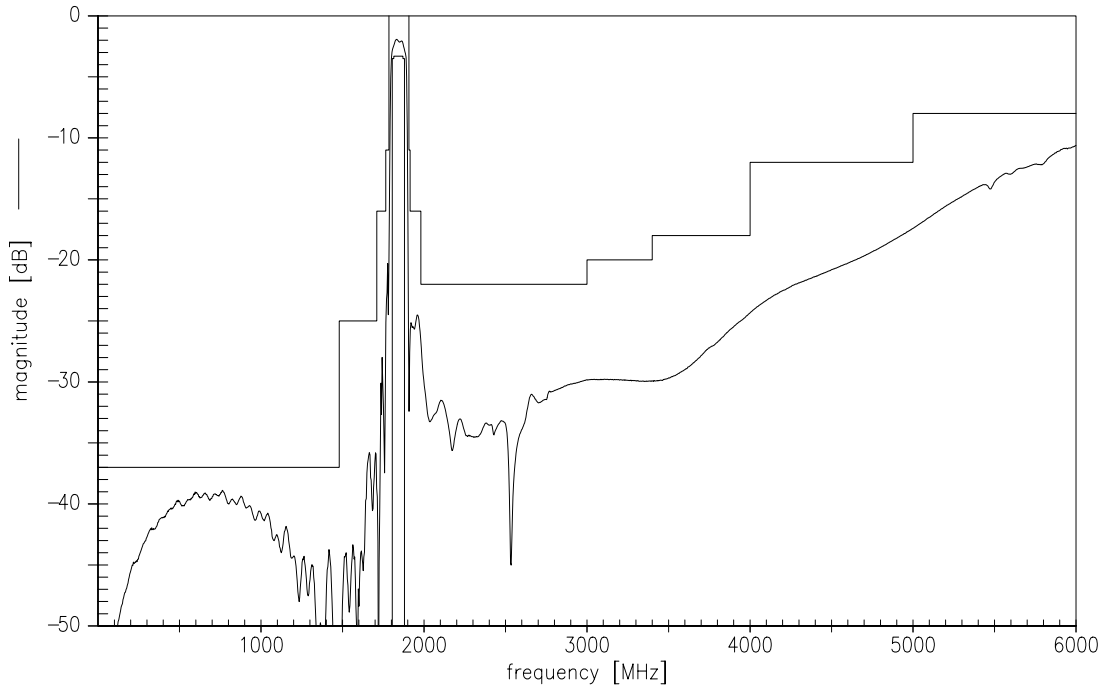




Transfer function Filter 2 ( PCN ) - spec at 25 °C



Transfer function Filter 2 ( PCN ) - wideband







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**B4221**

**Low-Loss Dual Band Filter for Mobile Communication**

**942,5 / 1842,5 MHz**

Preliminary Data



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