EPCOS

SAW Components

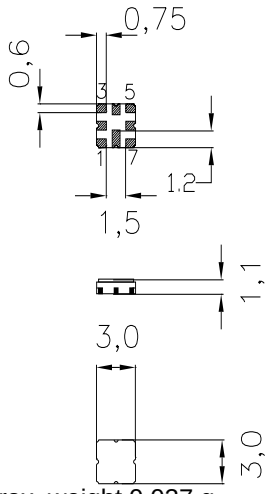
Data Sheet B4221

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 **S**urface **M**ounted **T**echnology (**SMT**)



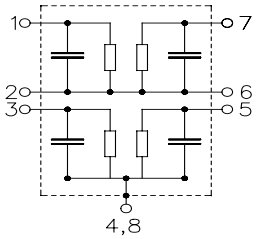
Dimensions in mm, approx. weight 0,037 g

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 **S**ensitive **D**evice (**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 ± 2°C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	942,50	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	3,2	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,4	1,9	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,7	2,1	
Output VSWR					
925,0 ... 960,0 MHz		—	1,7	2,1	
Attenuation	α_{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
Input reflection coefficient @ 1842,5 Mhz					
Phase		-130	-120	-110	°

Characteristics Filter 1 (EGSM)

Operating temperature range: T = -20 to +70˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	942,50	—	MHz
Maximum insertion attenuation	α_{max}				
925,0 ... 960,0 MHz		—	3,4	3,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
925,0 ... 960,0 MHz		—	1,6	2,0	dB
Input VSWR					
925,0 ... 960,0 MHz		—	1,8	2,2	
Output VSWR					
925,0 ... 960,0 MHz		—	1,8	2,2	
Attenuation	α_{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
Input reflection coefficient @ 1842,5 MHz					
Phase		-130	-120	-110	˚

Characteristics Filter 2 (PCN)

Operating temperature range: T = 25 ± 2°C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

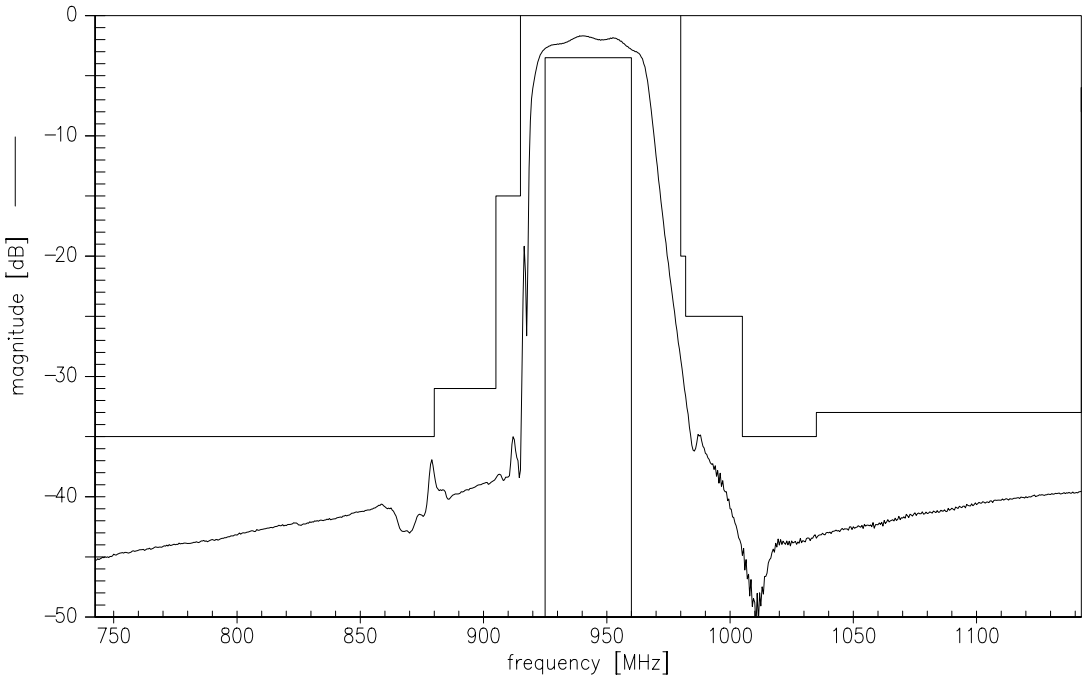
			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	α_{max}					
1805,0 ...1815,0 MHz			—	3,0	3,5	dB
1815,0 ...1870,0 MHz			—	2,5	3,3	dB
1870,0 ...1880,0 MHz			—	3,0	3,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$					
1805,0 ...1880,0 MHz			—	1,5	1,9	dB
Input VSWR						
1805,0 ...1880,0 MHz			—	1,8	2,1	
Output VSWR						
1805,0 ...1880,0 MHz			—	1,8	2,1	
Attenuation	α_{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
Input reflection coefficient @ 947,5 MHz						
Phase			-150	-140	-130	°

Characteristics Filter 2 (PCN)

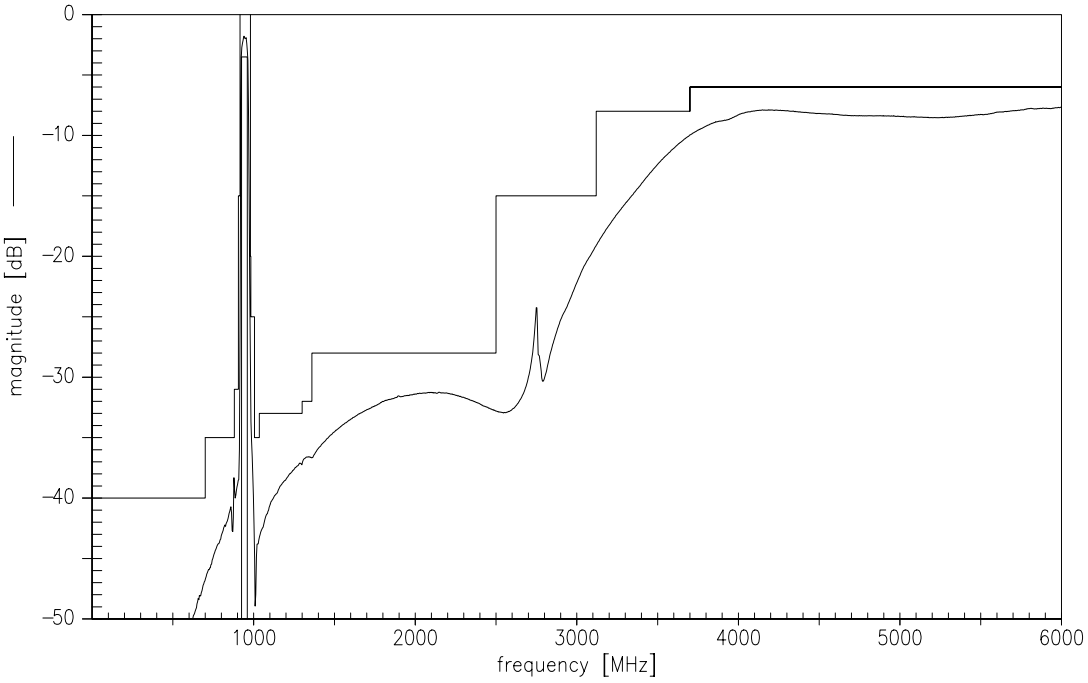
Operating temperature range: T = -20 to +70˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

			min.	typ.	max.	
Center frequency	f_c		—	1842,5	—	MHz
Maximum insertion attenuation	α_{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
Amplitude ripple (p-p)	$\Delta\alpha$					
1805,0 ...1880,0	MHz		—	1,6	2,0	dB
Input VSWR						
1805,0 ...1880,0	MHz		—	1,9	2,2	
Output VSWR						
1805,0 ...1880,0	MHz		—	1,9	2,2	
Attenuation	α_{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
Input reflection coefficient @ 947,5 MHz						
	Phase		-150	-140	-130	˚

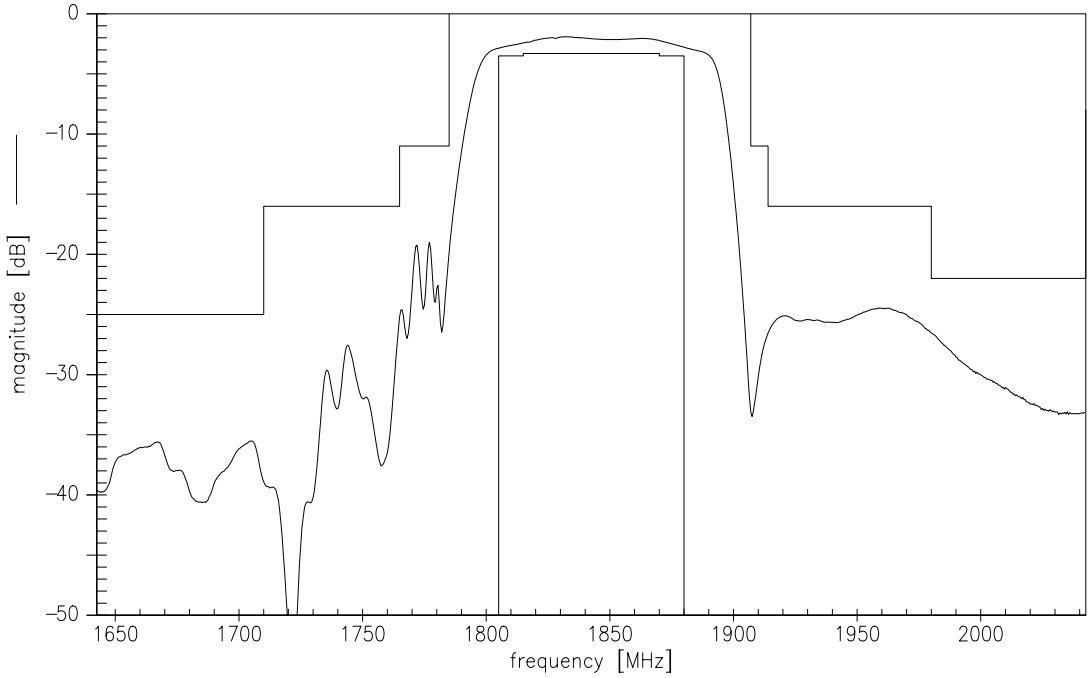
Transfer function Filter 1 (EGSM)- spec at 25 ˚C



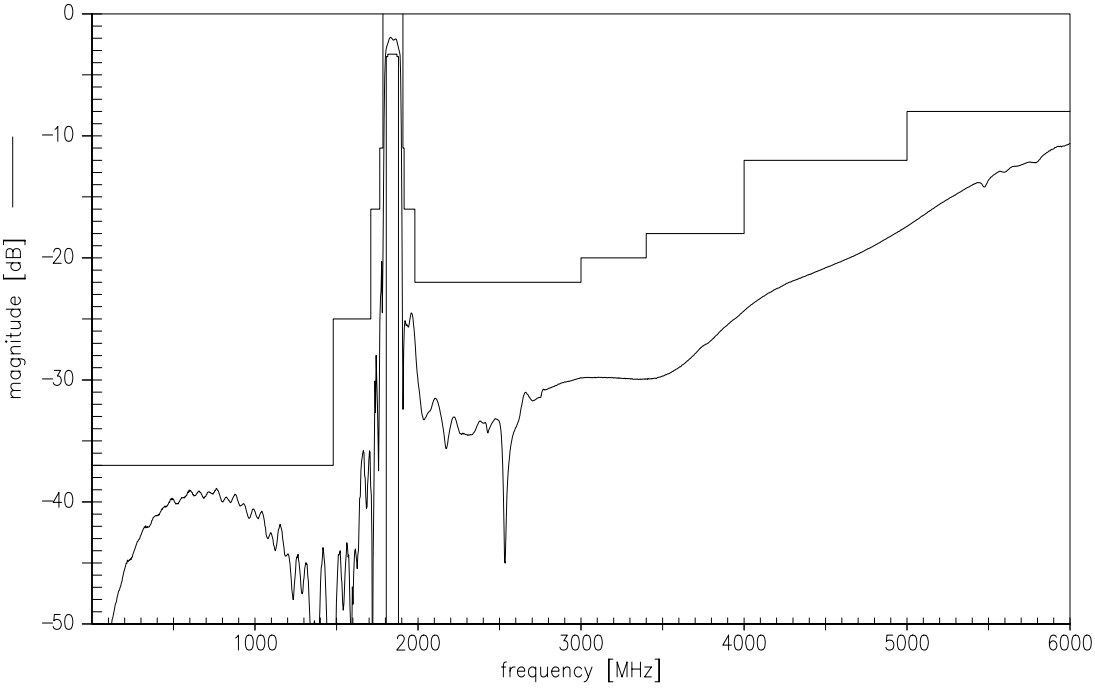
Transfer function Filter 1 (EGSM) - wideband



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



Transfer function Filter 2 (PCN) - wideband



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