EPCOS

SAW Components

Data Sheet B4226

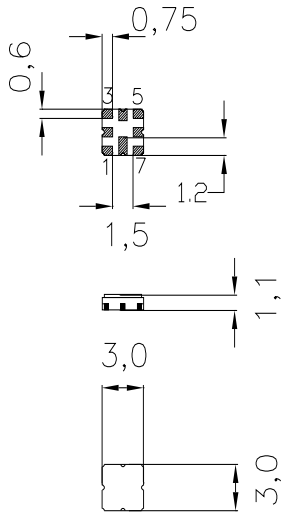
Low-Loss Dual Band Filter for Mobile Communication 881,5 & 1960,0 MHz

Data Sheet

Ceramic package **QCC8D**

Features

- Low-loss RF filter for mobile telephone AMPS and PCS bands, receive path
- Device with two integrated Rx-filters
- Usable passband :
  Filter 1 (AMPS): 25 MHz
  Filter 2 (PCS): 60MHz
- No matching network required for operation at 50 Ω
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)



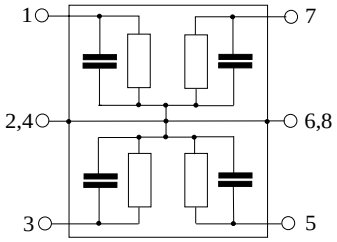
Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,037 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B4226	B39202-B4226-U810	C61157-A7-A72	F61074-V8101-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	– 20 /+ 80	˚C	
Storage temperature range	T_{stg}	– 30 /+ 85	˚C	
DC voltage	V_{DC}	3	V	
Input power max.				
824...849 MHz	P_{IN}	15	dBm	
1850...1910 MHz		13	dBm	

Characteristics of Filter 2 (PCS)

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

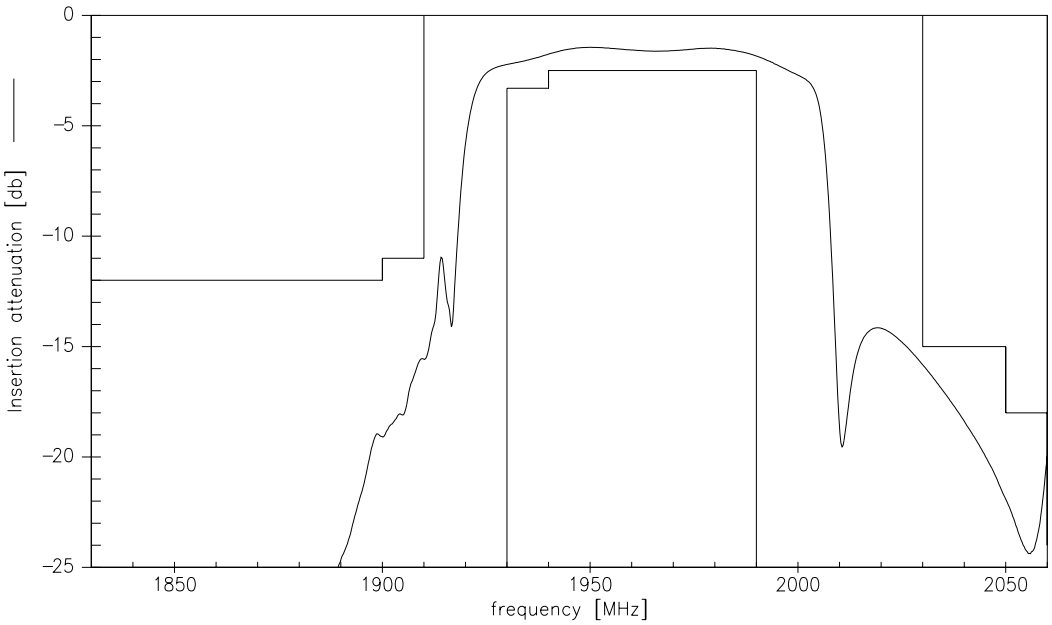
		min.	typ.	max.	
Center frequency	f_c	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0...1940,0 MHz		—	2,5	3,7	dB
1940,0...1990,0 MHz		—	2,2	2,8	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0...1990,0 MHz		—	1,1	2,3	dB
Input return loss					
1930,0...1990,0 MHz		9	10	—	dB
Output return loss					
1930,0...1990,0 MHz		9	10	—	dB
Attenuation	α				
965,0...1130,0 MHz		42	44	—	dB
1130,0...1190,0 MHz		45	47	—	dB
1530,0...1590,0 MHz		36	38	—	dB
1669,0...1694,0 MHz		33	36	—	dB
2030,0...2050,0 MHz		15	16	—	dB
2050,0...2110,0 MHz		18	19	—	dB
2110,0...3000,0 MHz		20	26	—	dB
3000,0...3600,0 MHz		24	26	—	dB
Tx band suppression					
1830,0...1900,0 MHz		12	18	—	dB
1900,0...1910,0 MHz		11	13	—	dB
Input return loss phase @ 881,5MHz					
Phase		-86	-81	-76	°

Characteristics of Filter 2 (PCS)

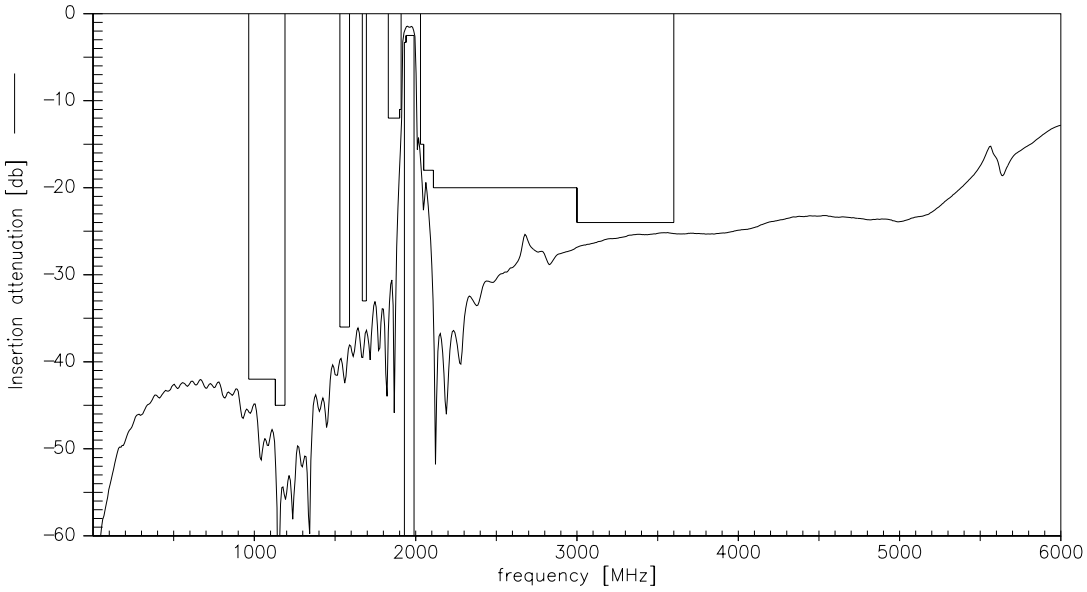
Operating temperature range: T = 25 ± 10˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0...1940,0 MHz		—	2,2	3,3	dB
1940,0...1990,0 MHz		—	1,8	2,5	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0...1990,0 MHz		—	0,8	1,9	dB
Input return loss					
1930,0...1990,0 MHz		9	11	—	dB
Output return loss					
1930,0...1990,0 MHz		9	11	—	dB
Attenuation	α				
965,0...1130,0 MHz		42	44	—	dB
1130,0...1190,0 MHz		45	47	—	dB
1530,0...1590,0 MHz		36	38	—	dB
1669,0...1694,0 MHz		33	36	—	dB
2030,0...2050,0 MHz		15	16	—	dB
2050,0...2110,0 MHz		18	19	—	dB
2110,0...3000,0 MHz		20	26	—	dB
3000,0...3600,0 MHz		24	26	—	dB
Tx band suppression					
1830,0...1900,0 MHz		12	18	—	dB
1900,0...1910,0 MHz		11	13	—	dB
Input return loss phase @ 881,5MHz					
Phase		-86	-81	-76	°

Transfer function of the PCS filter (narrow band measurement)

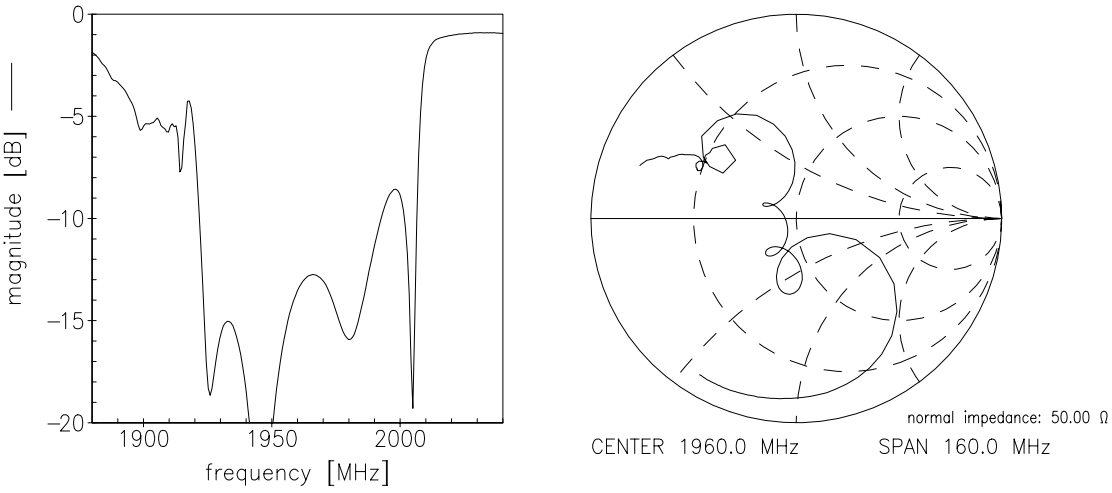


Transfer function of the PCS filter (wide band measurement)

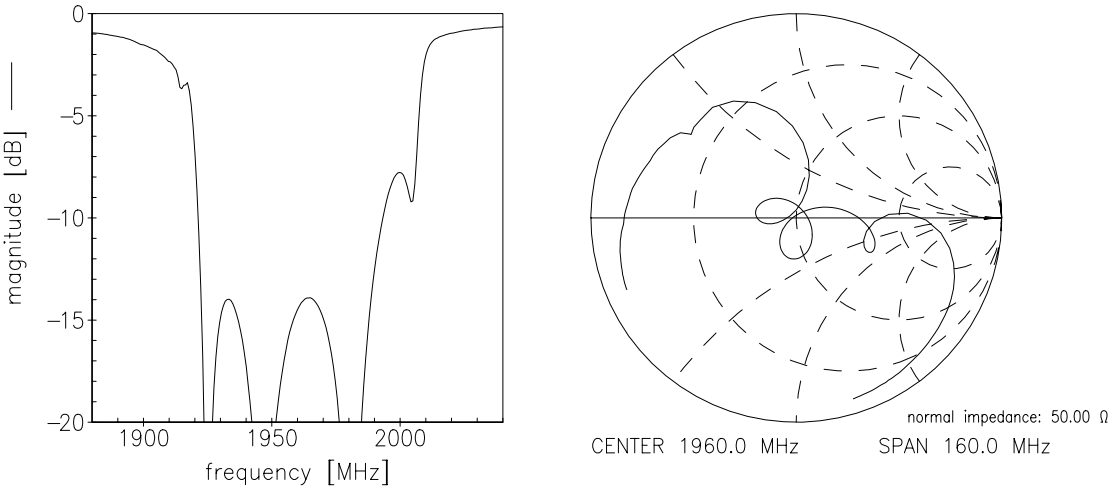


Reflection coeffiecients of the PCS filter (measurement)

S_{11}



S_{22}



Characteristics of AMPS Rx filter

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

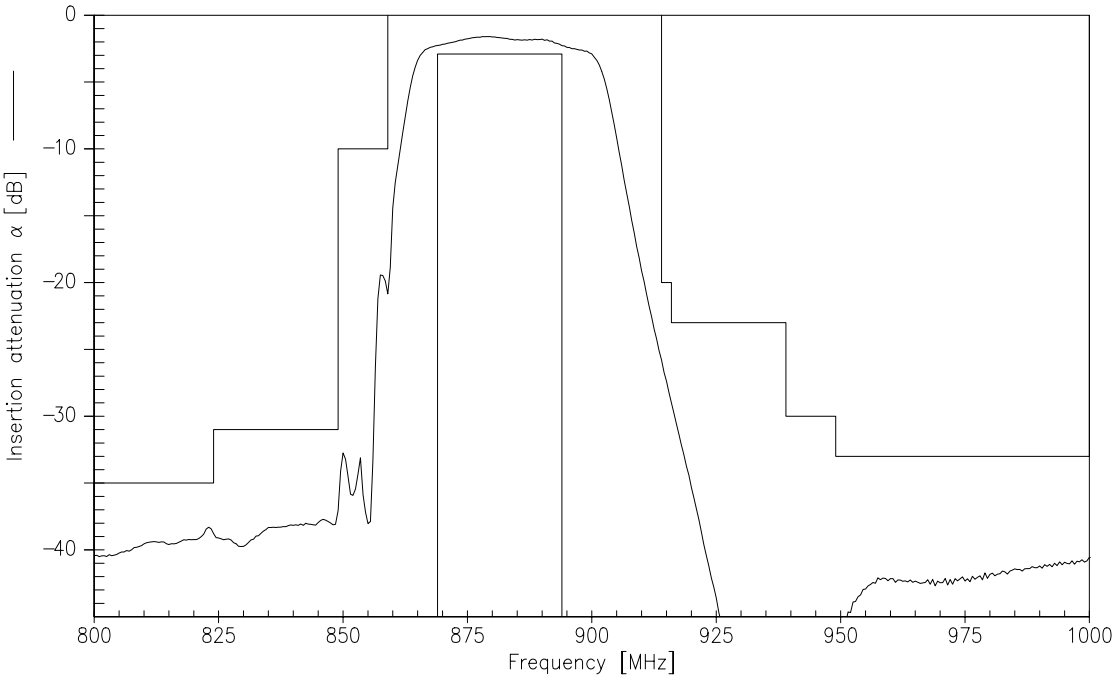
		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0...894,0 MHz		—	2,4	3,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0...894,0MHz		—	0,8	1,4	dB
Input return loss					
869,0...894,0 MHz		10	12	—	dB
Output return loss					
869,0...894,0 MHz		10	12	—	dB
Attenuation	α				
10,0...700,0 MHz		40	45	—	dB
700,0...824,0 MHz		35	38	—	dB
849,0...859,0 MHz		10	14	—	dB
914,0...916,0 MHz		20	23	—	dB
916,0...939,0 MHz		23	26	—	dB
939,0...949,0 MHz		30	45	—	dB
949,0...1200,0 MHz		33	37	—	dB
1200,0...1294,0 MHz		32	35	—	dB
1294,0...1694,0 MHz		28	31	—	dB
1694,0...2400,0 MHz		27	30	—	dB
2400,0...3000,0 MHz		25	28	—	dB
3000,0...3500,0 MHz		12	16	—	dB
3500,0...6000,0 MHz		4	6	—	dB
Tx band suppression					
824,0...849,0 MHz		31	33	—	dB
Input return loss phase @ 1960,0MHz					
Phase		-170	-165	-160	°

Characteristics of AMPS Rx filter

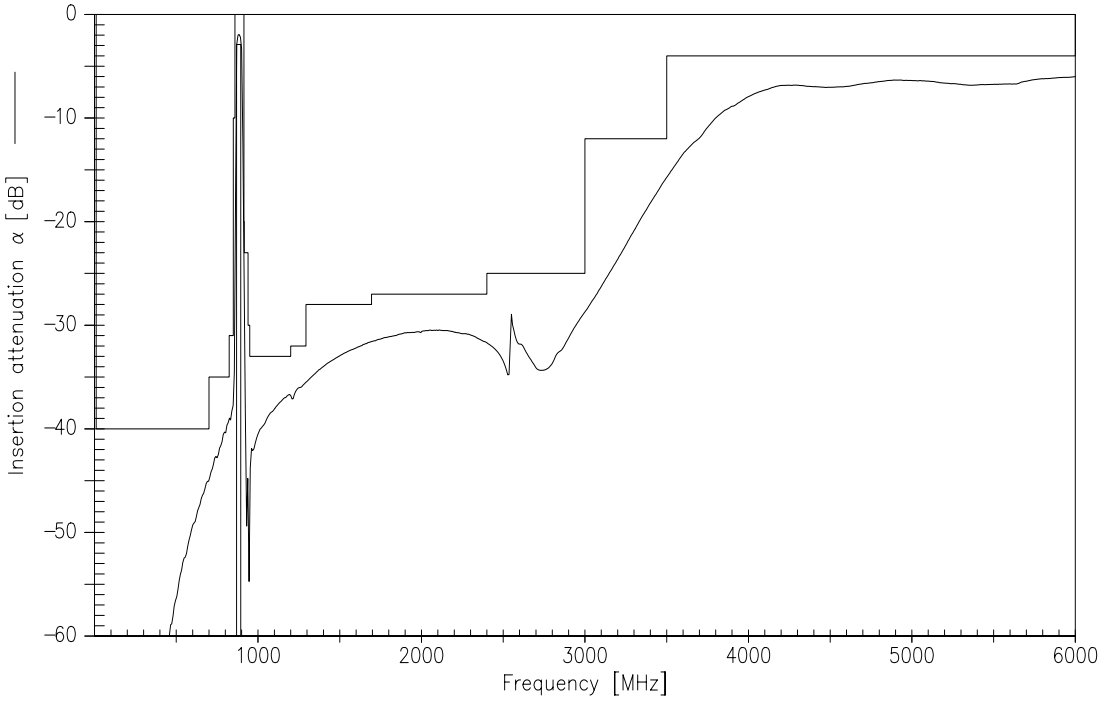
Operating temperature range: T = 25 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0...894,0 MHz		—	2,3	2,9	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0...894,0 MHz		—	0,9	1,3	dB
Input return loss					
869,0...894,0 MHz		10	13	—	dB
Output return loss					
869,0...894,0 MHz		10	13	—	dB
Attenuation	α				
10,0...700,0 MHz		40	45	—	dB
700,0...824,0 MHz		35	38	—	dB
849,0...859,0 MHz		10	14	—	dB
914,0...916,0 MHz		20	23	—	dB
916,0...939,0 MHz		23	26	—	dB
939,0...949,0 MHz		30	45	—	dB
949,0...1200,0 MHz		33	37	—	dB
1200,0...1294,0 MHz		32	35	—	dB
1294,0...1694,0 MHz		28	31	—	dB
1694,0...2400,0 MHz		27	30	—	dB
2400,0...3000,0 MHz		25	28	—	dB
3000,0...3500,0 MHz		12	16	—	dB
3500,0...6000,0 MHz		4	6	—	dB
Tx band suppression					
824,0...849,0 MHz		31	33	—	dB
Input return loss phase @ 1960,0MHz					
Phase		-170	-165	-160	˚

Transfer function of the AMPS filter (narrow band measurement)

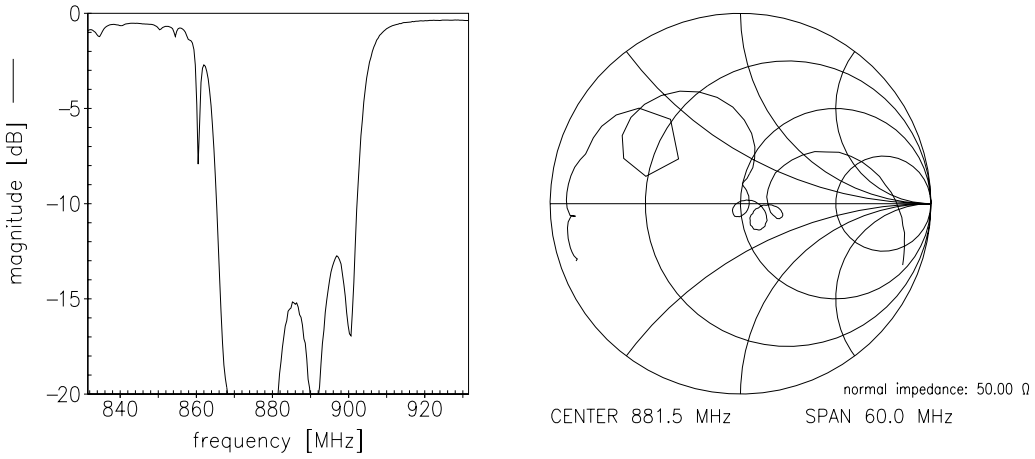


Transfer function of the AMPS filter (wide band measurement)

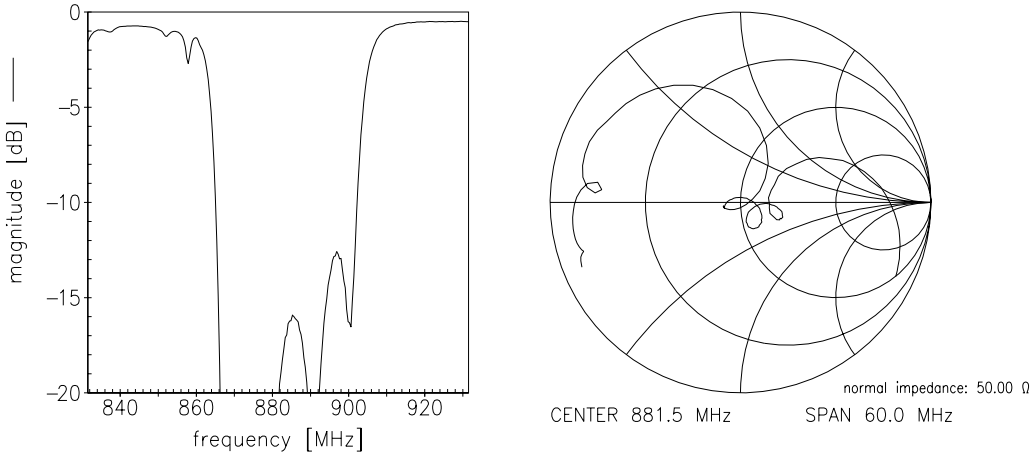


Reflection coefficients of the AMPS filter (measurement)

S_{11}



S_{22}



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