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EPCOS

SAW Components

Data Sheet B3510

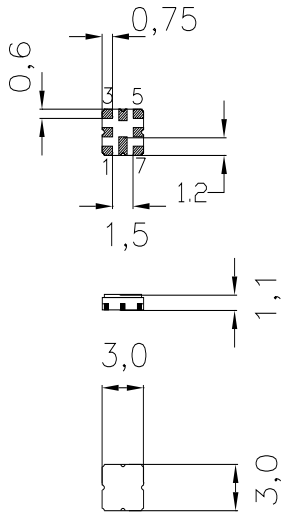
Low-Loss Dual Band Filter for Telematics Application 881,5 & 1960,0 MHz

Data Sheet

Ceramic package **QCC8D**

Features

- Low-loss 2-in-1 RF filter for mobile telephone AMPS and PCS CDMA systems, receive path
- Device with two integrated Rx-filters
- Usable passband of PCS Rx filter: 60 MHz
- Usable passband of AMPS Rx-filter: 25 MHz
- No matching network required for operation at 50 Ω
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Extended temperature range for automotiv application
- Passivation layer: Elpas



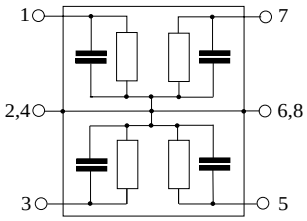
Dimensions in mm, approx. weight 0,037 g

Terminals

- Ni, gold-plated

Pin configuration

1	Input PCS filter
7	Output PCS filter
3	Input AMPS filter
5	Output AMPS filter
2,4,6,8	Case-ground, to be grounded



Type	Ordering code	Marking and Package according to	Packing according to
B3510	B39192-B3510-U810	C61157-A7-A72	F61074-V8101-Z0000

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

Maximum ratings

Operable temperature range	T	–40 /+85	˚C	
Storage temperature range	T_{stg}	–40 /+85	˚C	
DC voltage	V_{DC}	0	V	
Input power max.				
824...849 MHz	P_{IN}	13	dBm	source and load impedance 50 Ω continuous wave
1850...1910 MHz		13	dBm	continuous wave

Characteristics of PCS Rx filter

Operating temperature range: T = -30 to +75 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

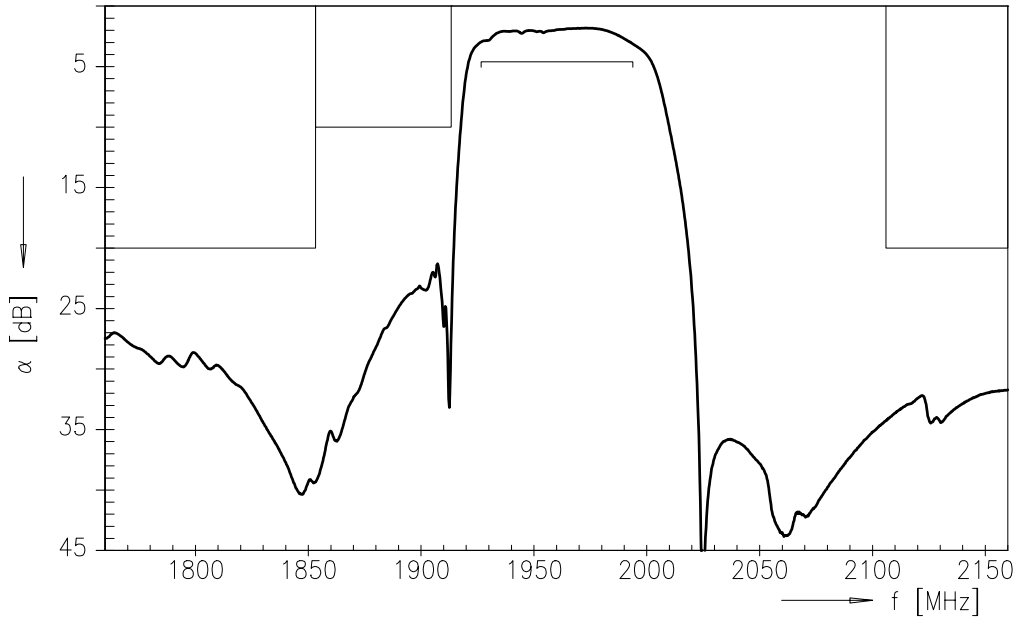
		min.	typ.	max.	
Center frequency	f_c	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0...1990,0MHz		—	3,7	4,2	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0...1990,0MHz		—	1,9	2,9	dB
Input return loss					
1930,0...1990,0 MHz		7,0	9,0	—	dB
Output return loss					
1930,0...1990,0 MHz		7,0	9,0	—	dB
Attenuation	α				
10,0...1850,0 MHz		20,0	22,0	—	dB
2110,0...2400,0 MHz		20,0	30,0	—	dB
Tx band suppression					
1850,0...1910,0 MHz		10,0	12,0	—	dB

Characteristics of PCS Rx filter

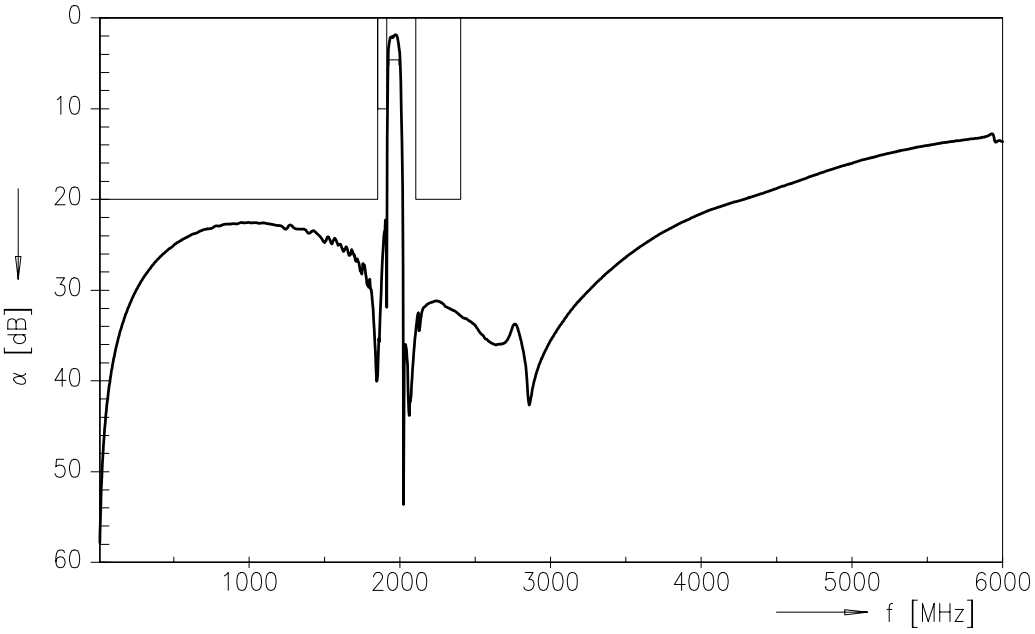
Operating temperature range: T = -40 to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}				
1930,0...1990,0MHz		—	3,7	4,6	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
1930,0...1990,0MHz		—	2,0	2,9	dB
Input return loss					
1930,0...1990,0 MHz		7,0	9,0	—	dB
Output return loss					
1930,0...1990,0 MHz		7,0	9,0	—	dB
Attenuation	α				
10,0...1850,0 MHz		20,0	22,0	—	dB
2110,0...2400,0 MHz		20,0	30,0	—	dB
Tx band suppression					
1850,0...1910,0 MHz		7,0	10,0	—	dB

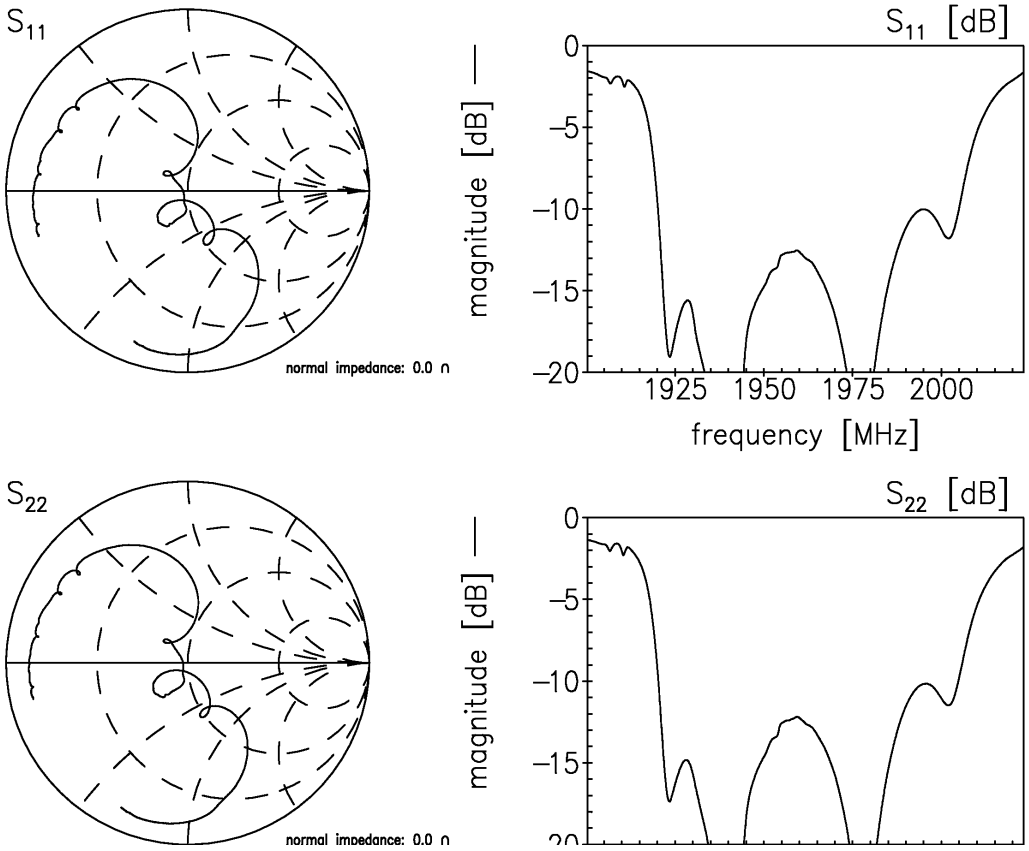
Transfer function of the PCS filter (narrow band measurement)



Transfer function of the PCS filter (wide band measurement)



Reflection coefficients of the PCS filter (measurement)



Characteristics of AMPS Rx filter

Operating temperature range: T = -30 to +75 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

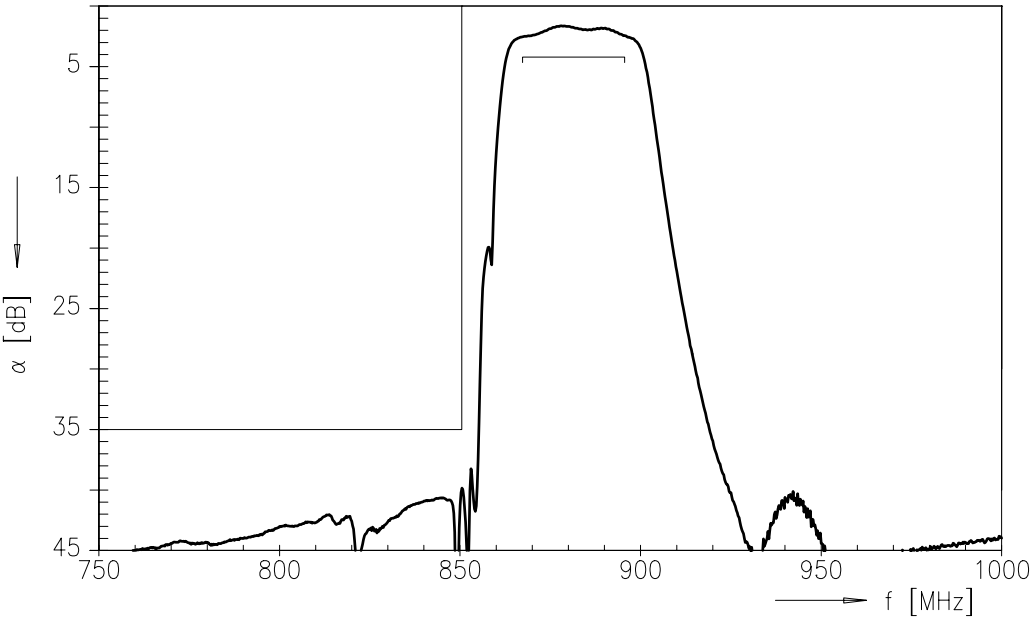
		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0...894,0MHz		—	2,6	3,1	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0...894,0MHz		—	1,0	1,5	dB
Input return loss					
869,0...894,0 MHz		10,0	11,0	—	dB
Output return loss					
869,0...894,0 MHz		10,0	12,0	—	dB
Attenuation	α				
30,0...824,0MHz		35,0	42,0	—	dB
1050,0...1080,0MHz		38,0	42,0	—	dB
1080,0...2300,0MHz		30,0	32,0	—	dB
2300,0...2600,0MHz		25,0	30,0	—	dB
Tx band suppression					
824,0...849,0MHz		35,0	40,0	—	dB

Characteristics of AMPS Rx filter

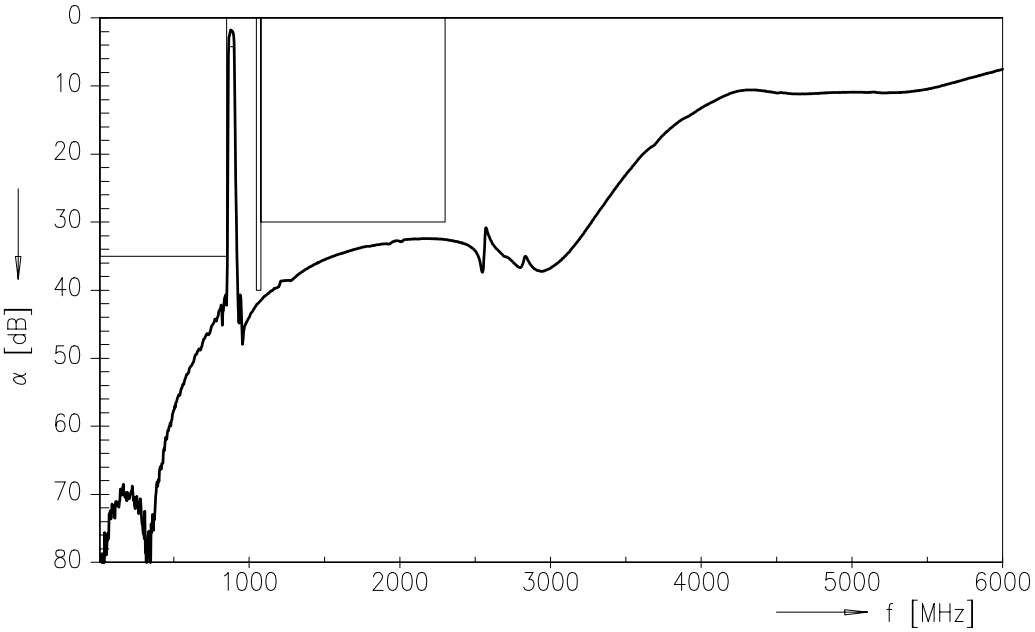
Operating temperature range: T = -40 to +85 ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 50 Ω

		min.	typ.	max.	
Center frequency	f_c	—	881,5	—	MHz
Maximum insertion attenuation	α_{max}				
869,0...894,0MHz		—	2,6	3,3	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
869,0...894,0MHz		—	1,0	1,5	dB
Input return loss					
869,0...894,0 MHz		9,5	11,0	—	dB
Output return loss					
869,0...894,0 MHz		9,5	12,0	—	dB
Attenuation	α				
30,0...824,0MHz		35,0	42,0	—	dB
1050,0...1080,0MHz		38,0	42,0	—	dB
1080,0...2300,0MHz		30,0	32,0	—	dB
2300,0...2600,0MHz		25,0	30,0	—	dB
Tx band suppression					
824,0...849,0MHz		35,0	40,0	—	dB

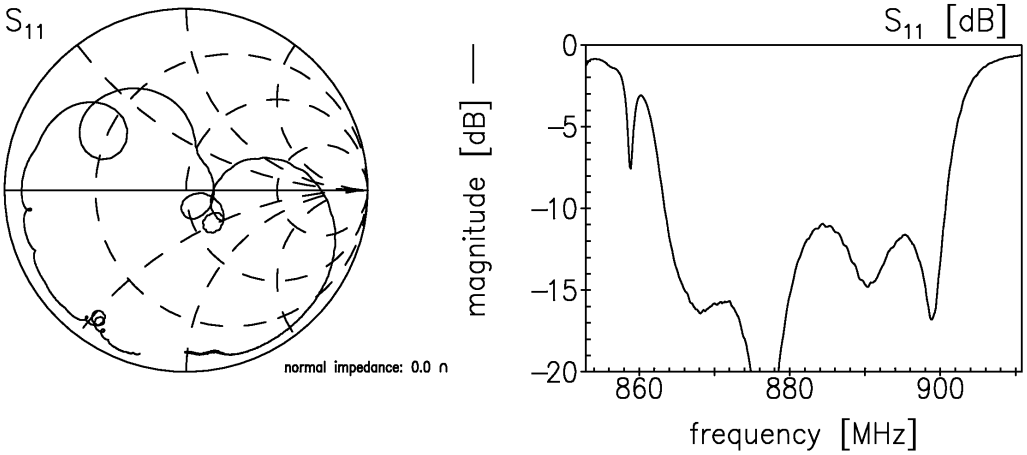
Transfer function of the AMPS filter (narrow band measurement)

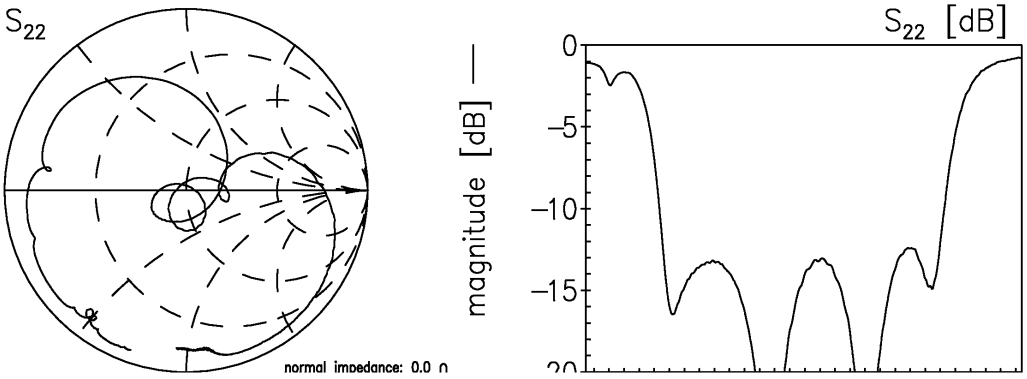


Transfer function of the AMPS filter (wide band measurement)



Reflection coefficients of the AMPS filter (measurement)





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