



# *SAW Components*

*Data Sheet B3510*

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**

**B3510**

**Low-Loss Dual Band Filter for Telematics Application**

**881,5 & 1960,0 MHz**

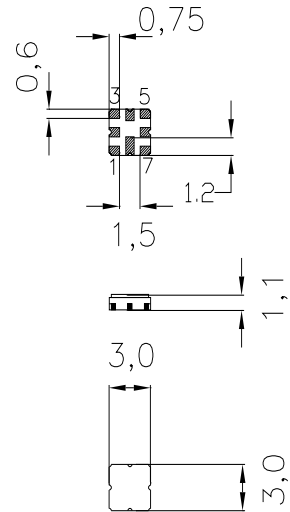
**Data Sheet**



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 **Surface Mounted Technology (SMT)**
- Extended temperature range for automotive application
- Passivation layer: Elpas



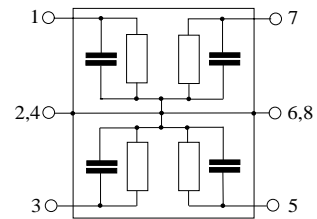
Dimensions in mm, approx. weight 0,037 g

**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 Sensitive Device (ESD)

**Maximum ratings**

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



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



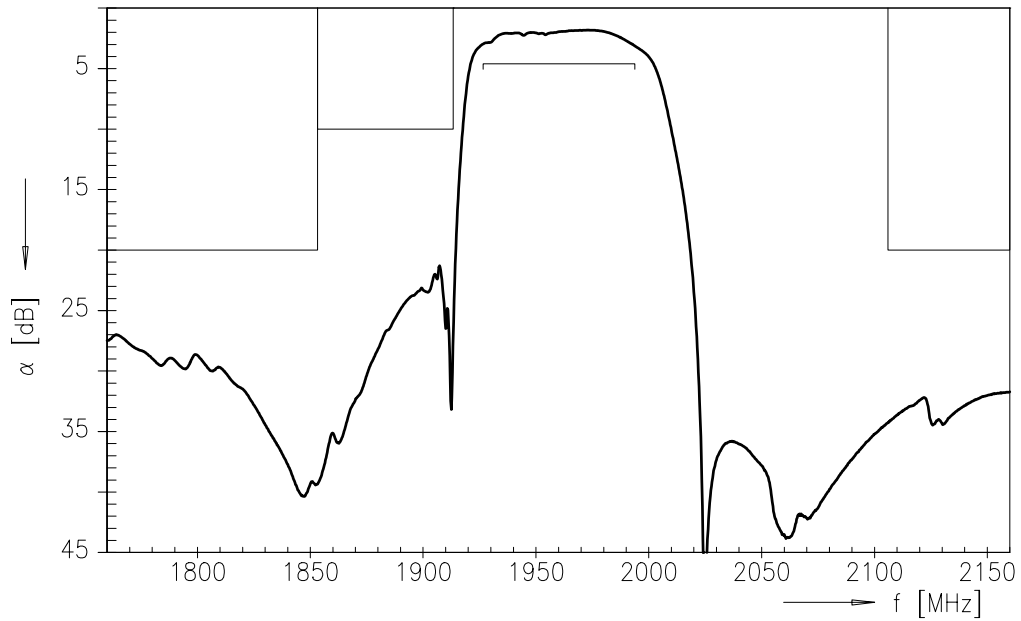
**Characteristics of PCS Rx filter**

Operating temperature range:  $T = -40$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

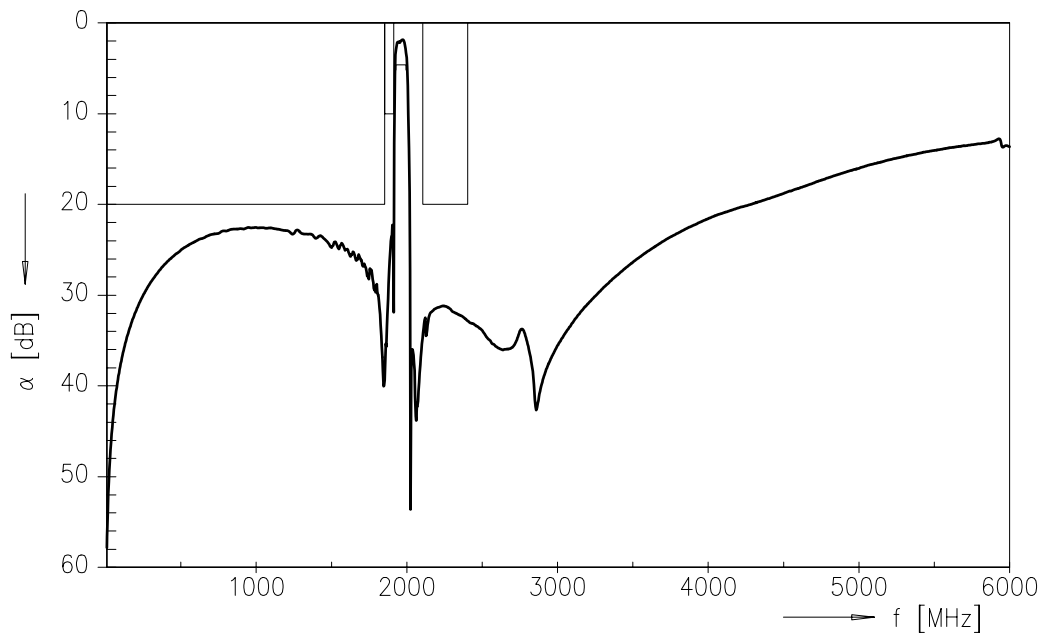
		min.	typ.	max.	
<b>Center frequency</b>	$f_c$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$				
	1930,0... 1990,0MHz	—	3,7	4,6	dB
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$				
	1930,0... 1990,0MHz	—	2,0	2,9	dB
<b>Input return loss</b>					
	1930,0... 1990,0 MHz	7,0	9,0	—	dB
<b>Output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



Transfer function of the PCS filter (narrow band measurement)

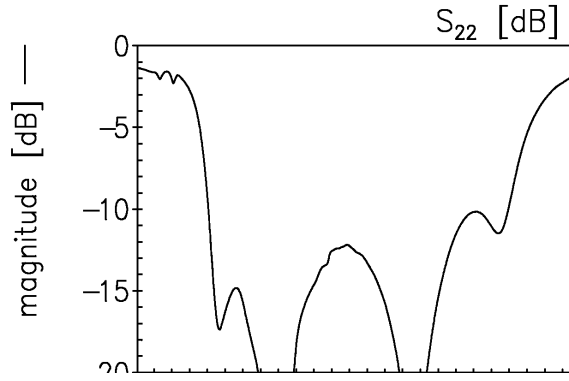
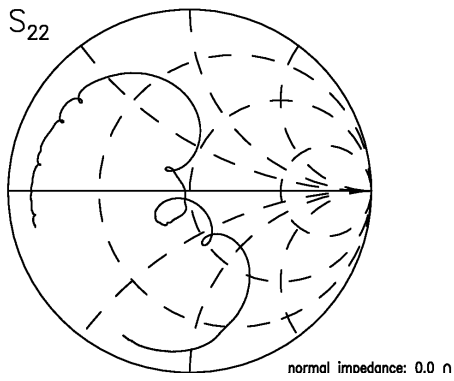
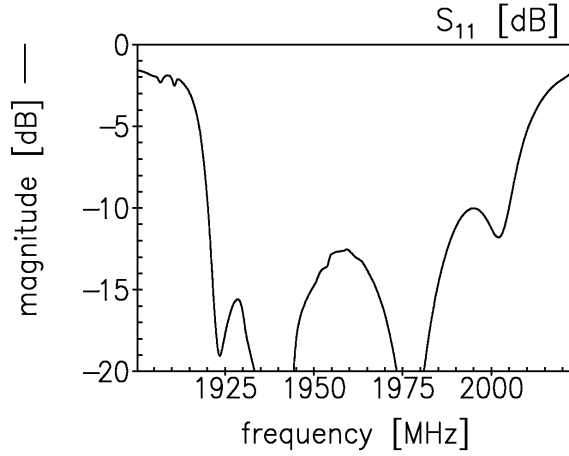
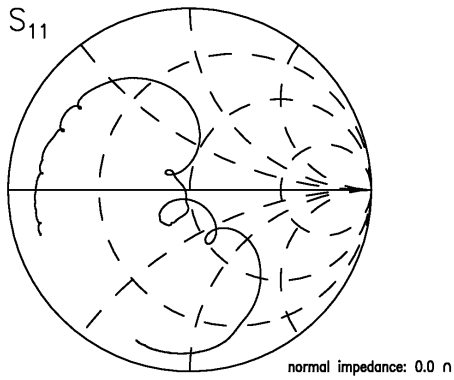


Transfer function of the PCS filter (wide band measurement)





Reflection coefficients of the PCS filter (measurement)





**Characteristics of AMPS Rx filter**

Operating temperature range:  $T = -30$  to  $+75$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

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



**Characteristics of AMPS Rx filter**

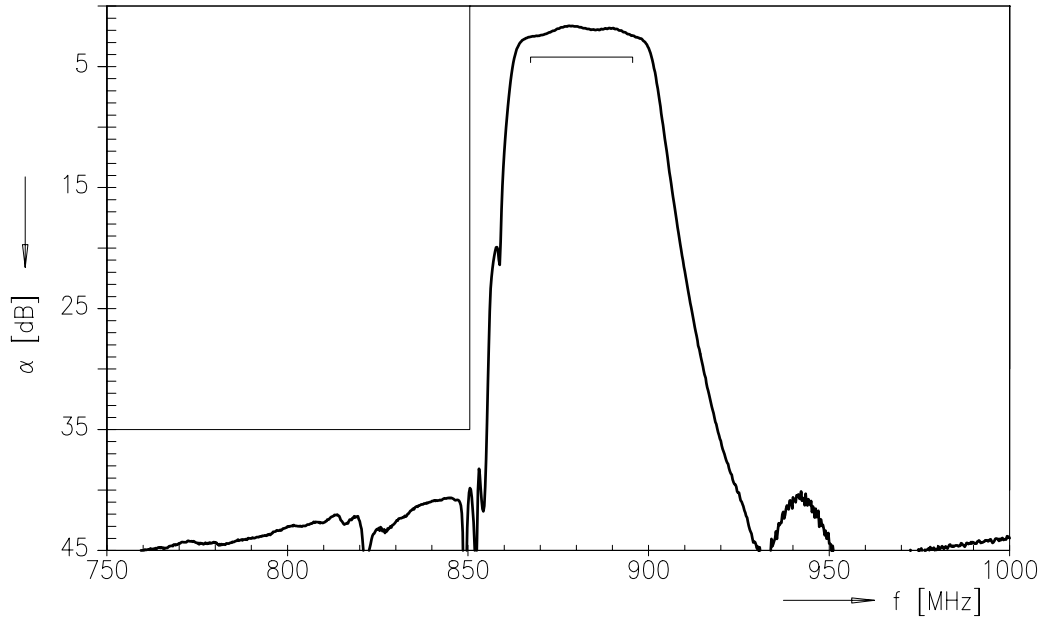
Operating temperature range:  $T = -40$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

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

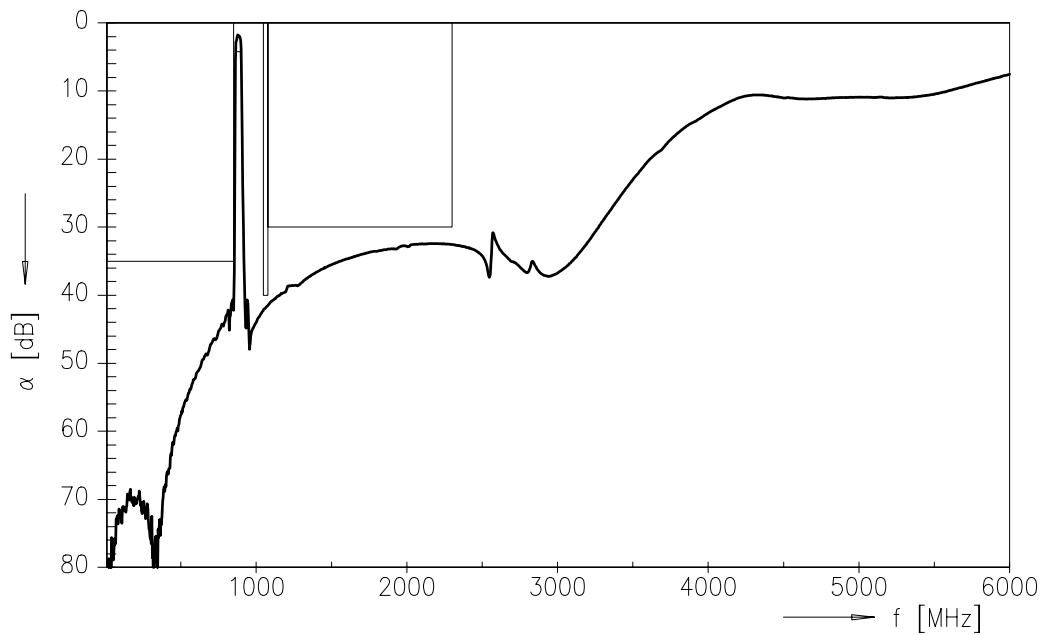




Transfer function of the AMPS filter (narrow band measurement)

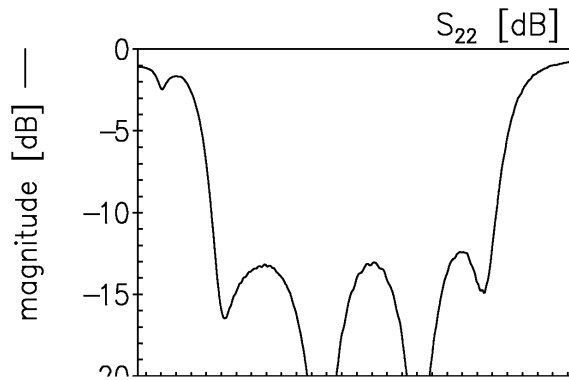
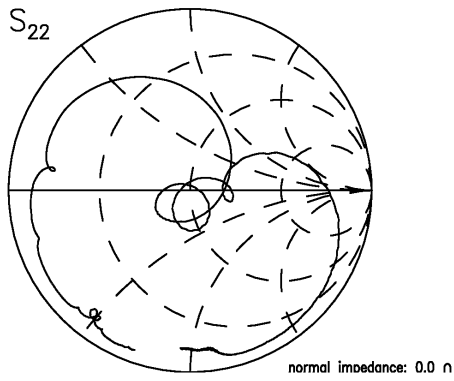
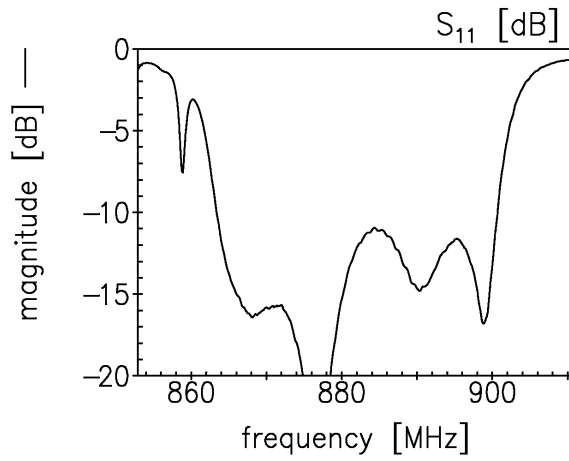
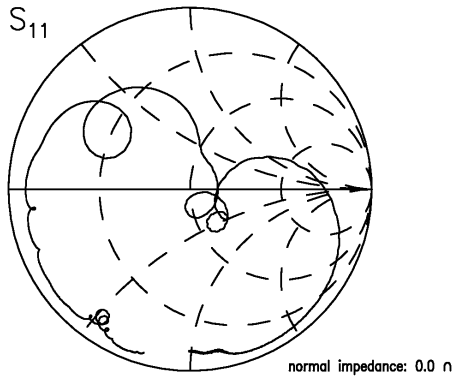


Transfer function of the AMPS filter (wide band measurement)





Reflection coefficients of the AMPS filter (measurement)





**SAW Components**

**B3510**

**Low-Loss Dual Band Filter for Telematics Application**

**881,5 & 1960,0 MHz**

Data Sheet



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