



# SAW Components

Data Sheet B3510





**SAW Components**

**B3510**

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

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

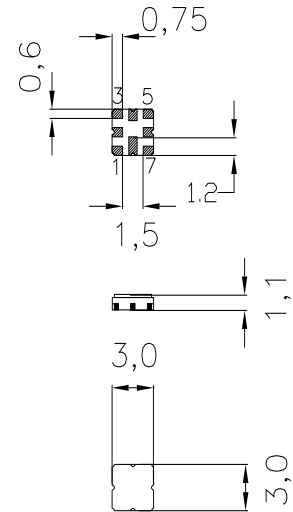
**Data Sheet**



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 **S**urface **M**ounted **T**echnology (**SMT**)
- Extended temperature range for automotiv application
- Passivation layer: Elpas



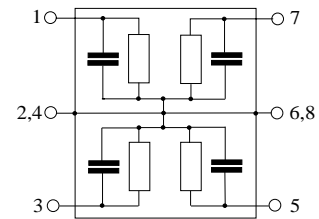
Dimensions in mm, approx. weight 0,037 g

**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 Sensitive Device (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.	$P_{IN}$	13	dBm	source and load impedance 50 Ω
824...849 MHz				continuous wave
1850...1910 MHz				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.	
<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				



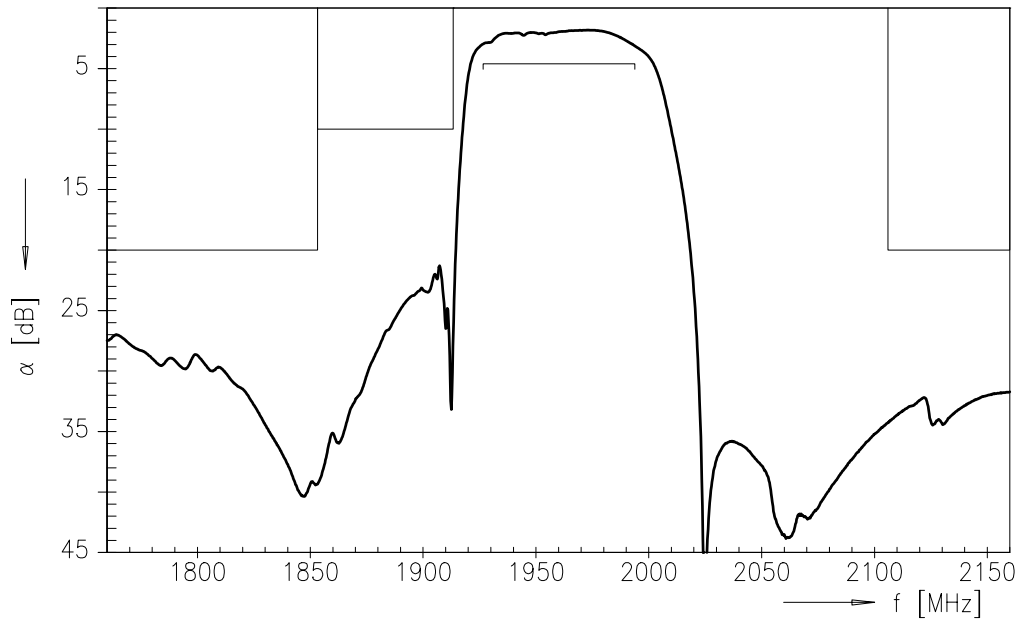
**Characteristics of PCS Rx filter**

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

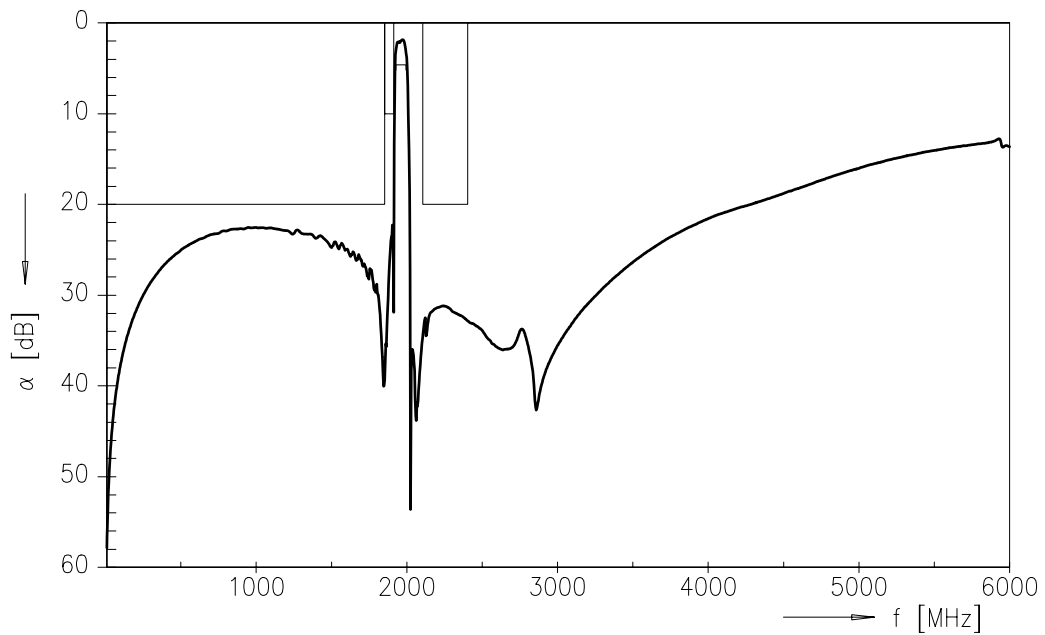
		min.	typ.	max.	
<b>Center frequency</b>	$f_c$	—	1960,0	—	MHz
<b>Maximum insertion attenuation</b>	$\alpha_{max}$	—	3,7	4,6	dB
	1930,0... 1990,0MHz				
<b>Amplitude ripple (p-p)</b>	$\Delta\alpha$	—	2,0	2,9	dB
	1930,0... 1990,0MHz				
<b>Input return loss</b>		7,0	9,0	—	dB
	1930,0... 1990,0 MHz				
<b>Output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



Transfer function of the PCS filter (narrow band measurement)

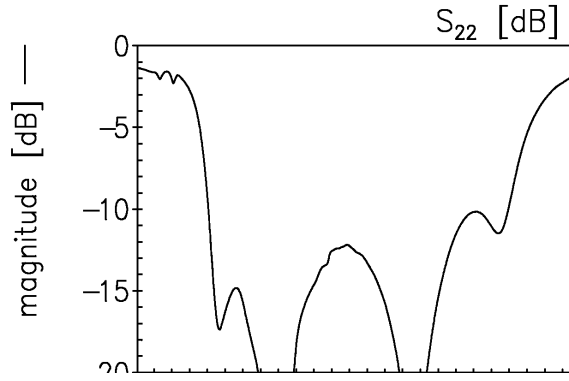
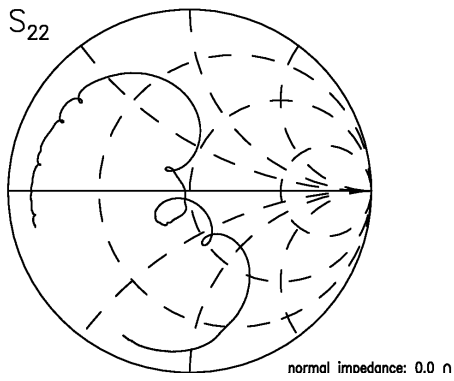
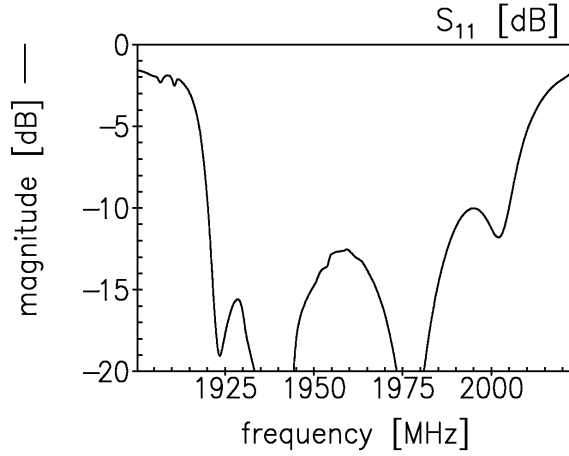
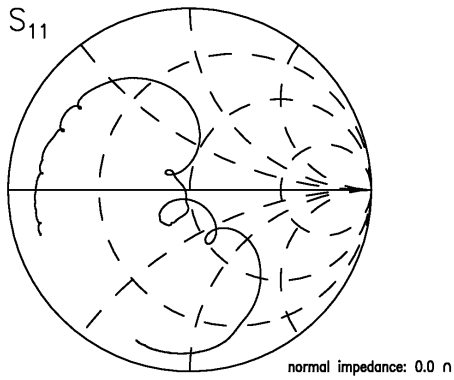


Transfer function of the PCS filter (wide band measurement)





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**

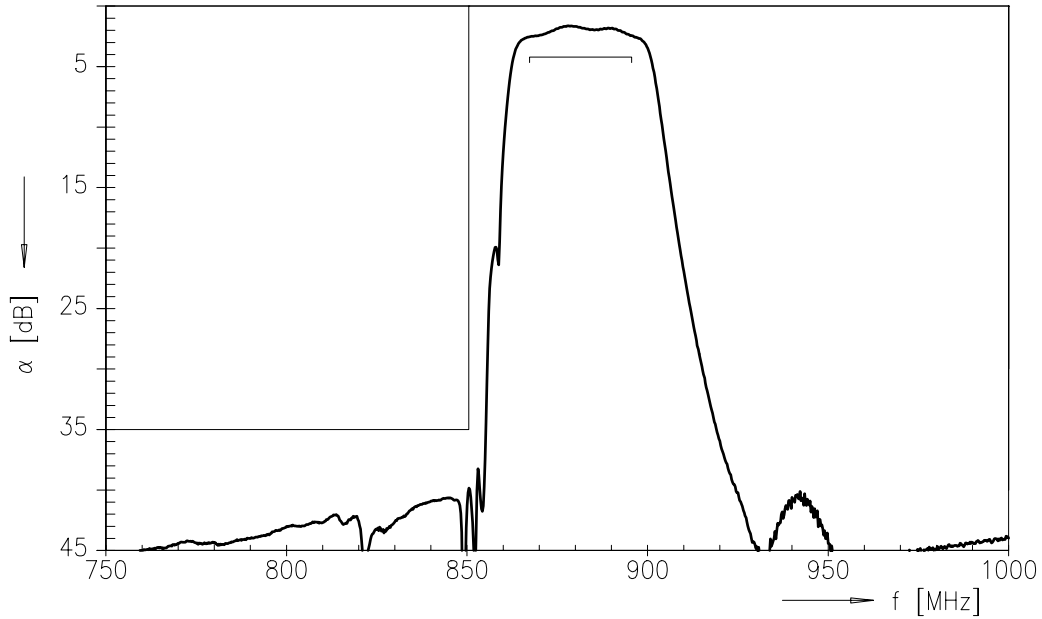
Operating temperature range:  $T = -40$  to  $+85$  °C  
 Terminating source impedance:  $Z_S = 50 \Omega$   
 Terminating load impedance:  $Z_L = 50 \Omega$

		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					

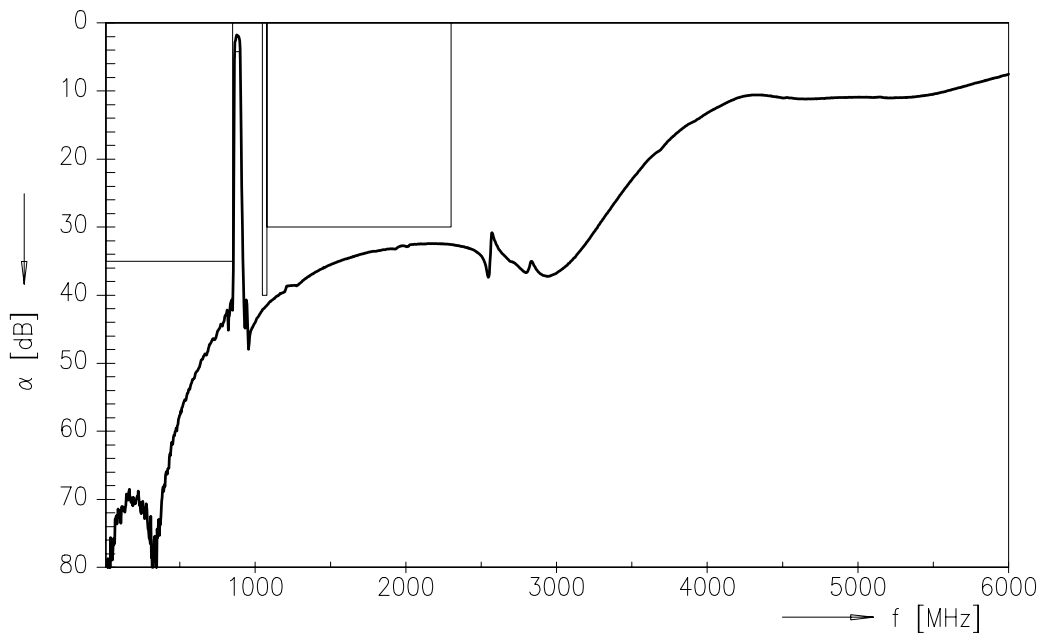




Transfer function of the AMPS filter (narrow band measurement)

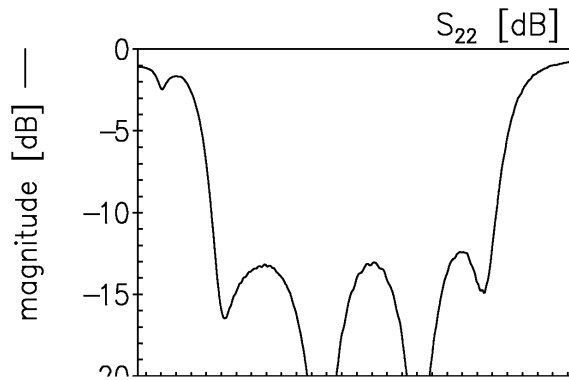
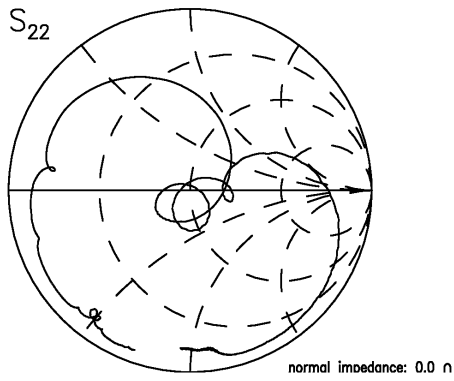
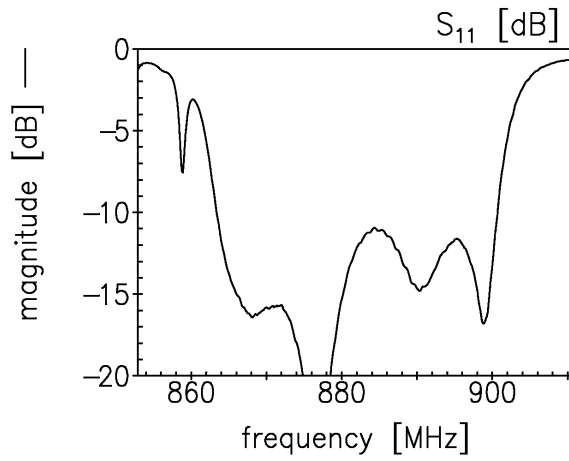
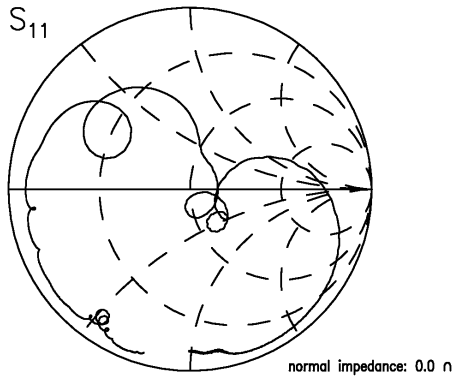


Transfer function of the AMPS filter (wide band measurement)





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



**Published by EPCOS AG**

**Surface Acoustic Wave Components Division, SAW CE AE PD**

**P.O. Box 80 17 09, D-81617 München**

© EPCOS AG 2004. All Rights Reserved. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

The information contained in this brochure describes the type of component and shall not be considered as guaranteed characteristics. Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.