



SAW filters for mobile communications

Series/Type: B4219

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B39202B4219U810 | | 2009-07-31 | 2009-11-30 | 2010-02-28 |

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.



SAW Components

B4219

Low-Loss Dual Band Filter for Mobile Communication

881,5 & 1960,0 MHz

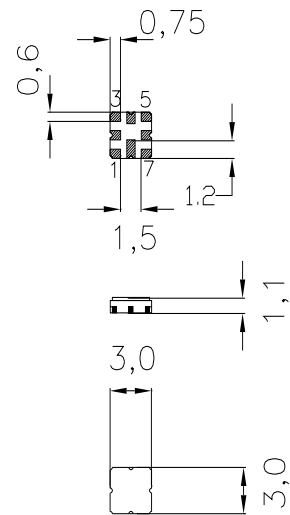
Preliminary Data Sheet



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**)



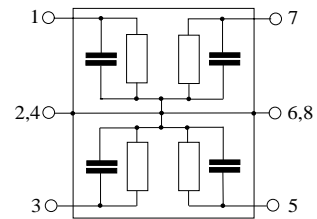
Dimensions in mm, approx. weight 0,037 g

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 |
|-------|-------------------|----------------------------------|----------------------|
| B4219 | B39202-B4219-U810 | C61157-A7-A72 | F61074-V8101-Z0000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

| | | | | |
|-----------------------------------|------------------|------------|--------------------|--|
| Operable temperature range | T | - 30 /+ 85 | $^{\circ}\text{C}$ | source and load impedance 50 Ω continuous wave |
| Storage temperature range | T_{stg} | - 40 /+ 85 | $^{\circ}\text{C}$ | |
| DC voltage | V_{DC} | 3 | V | |
| Input power max. 824...849 MHz | P_{IN} | 13 | dBm | |
| 1850...1910 MHz | | 13 | dBm | |



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Characteristics of PCS Rx filter

Operating temperature range: $T = -30$ to $+85$ °C
Terminating source impedance: $Z_S = 50 \Omega$
Terminating load impedance: $Z_L = 50 \Omega$

| | | min. | typ. | max. | |
|--------------------------------------|-----------------|------|--------|------|-----|
| Center frequency | f_c | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{\max} | | | | |
| 1930,0... 1990,0MHz | | — | 3,7 | 4,3 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 1930,0... 1990,0MHz | | — | 1,9 | 2,5 | dB |
| Input return loss | | | | | |
| 1930,0... 1990,0 MHz | | 10,0 | 11,5 | — | dB |
| Output return loss | | | | | |
| 1930,0... 1990,0 MHz | | 10,0 | 11,5 | — | dB |
| Attenuation | α | | | | |
| 30,0... 1850,0 MHz | | 20,0 | 22,0 | — | dB |
| 2110,0... 2400,0 MHz | | 20,0 | 31,0 | — | dB |
| Tx band suppression | | | | | |
| 1850,0... 1910,0 MHz | | 13,0 | 20,0 | — | dB |



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Characteristics of PCS Rx filter

Operating temperature range: $T = -30$ to $+70$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 50 \Omega$

| | | 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 | 2,4 | dB |
| Input return loss | | | | | |
| 1930,0... 1990,0 MHz | | 10,0 | 12,0 | — | dB |
| Output return loss | | | | | |
| 1930,0... 1990,0 MHz | | 10,0 | 12,0 | — | dB |
| Attenuation | α | | | | |
| 30,0... 1850,0 MHz | | 20,0 | 22,0 | — | dB |
| 2110,0... 2400,0 MHz | | 20,0 | 31,0 | — | dB |
| Tx band suppression | | | | | |
| 1850,0... 1910,0 MHz | | 15,0 | 20,0 | — | dB |



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Characteristics of PCS Rx filter

Operating temperature range: $T = 25 \pm 2^\circ \text{C}$

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 50 \Omega$

| | | min. | typ. | max. | |
|--------------------------------------|-----------------|------|--------|------|-----|
| Center frequency | f_c | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 3,4 | 3,7 | dB |
| 1930,0... 1990,0MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,6 | 1,9 | dB |
| 1930,0... 1990,0MHz | | | | | |
| Input return loss | | 10,0 | 12,5 | — | dB |
| 1930,0... 1990,0 MHz | | | | | |
| Output return loss | | 10,0 | 12,5 | — | dB |
| 1930,0... 1990,0 MHz | | | | | |
| Attenuation | α | 20,0 | 22,0 | — | dB |
| 30,0... 1850,0 MHz | | 20,0 | 31,0 | — | dB |
| 2110,0... 2400,0 MHz | | | | | |
| Tx band suppression | | 20,0 | 22,0 | — | dB |
| 1850,0... 1910,0 MHz | | | | | |



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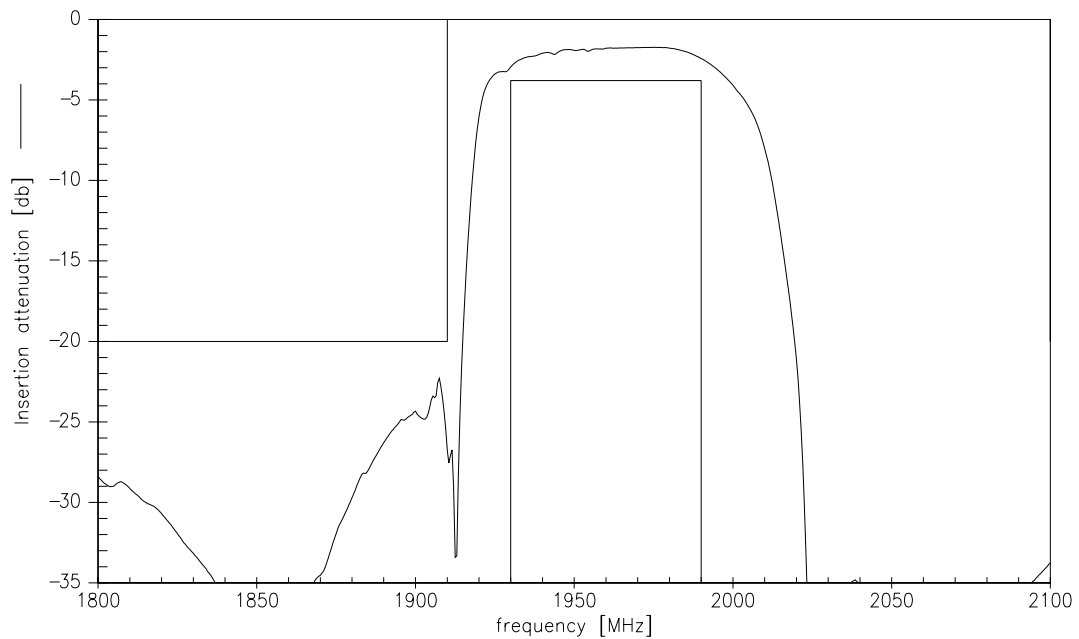
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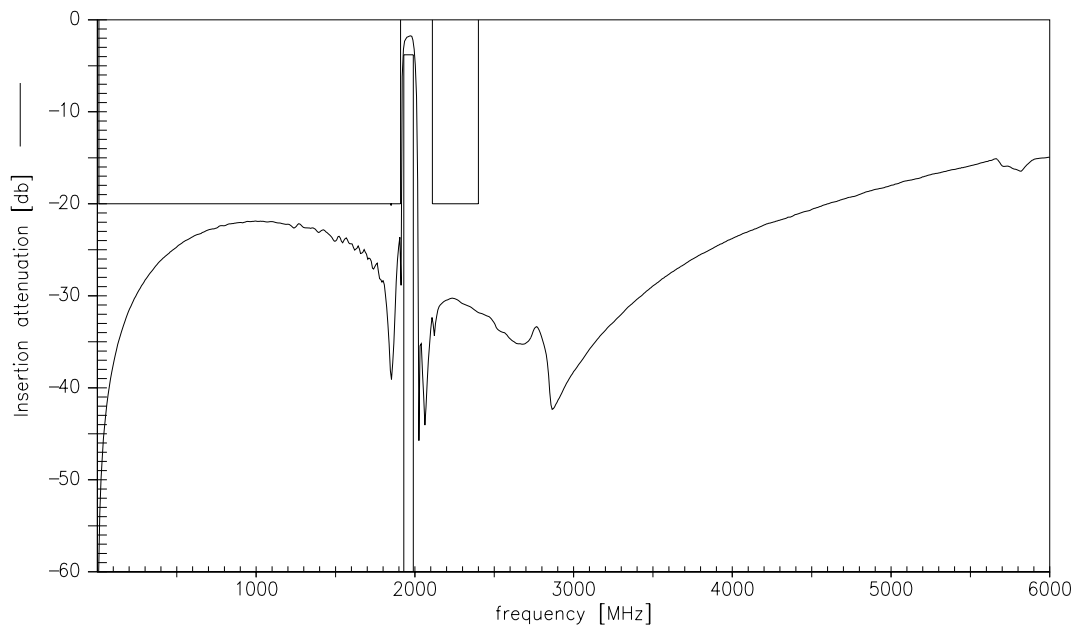
Preliminary Data Sheet



Transfer function of the PCS filter (narrow band measurement)



Transfer function of the PCS filter (wide band measurement)





SAW Components

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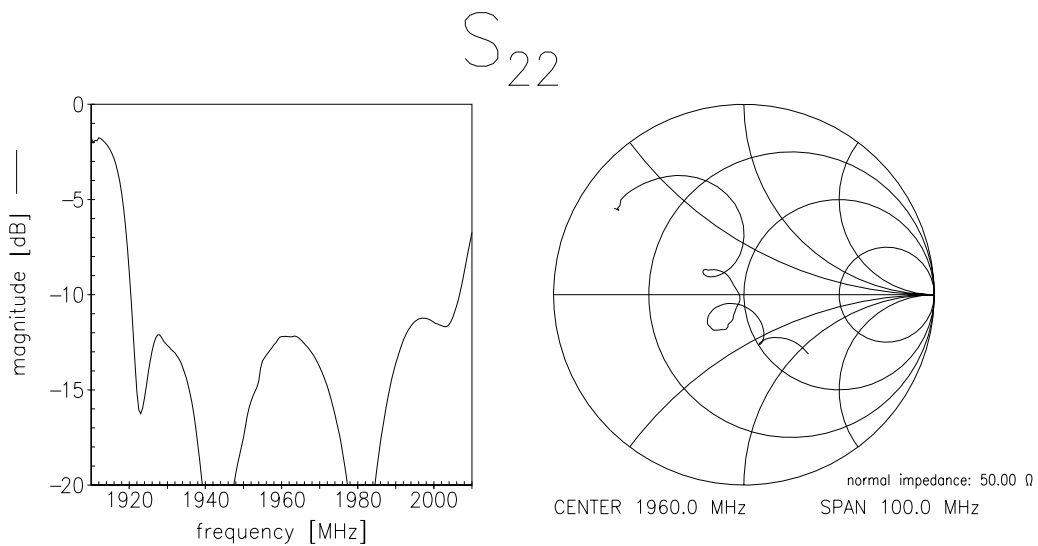
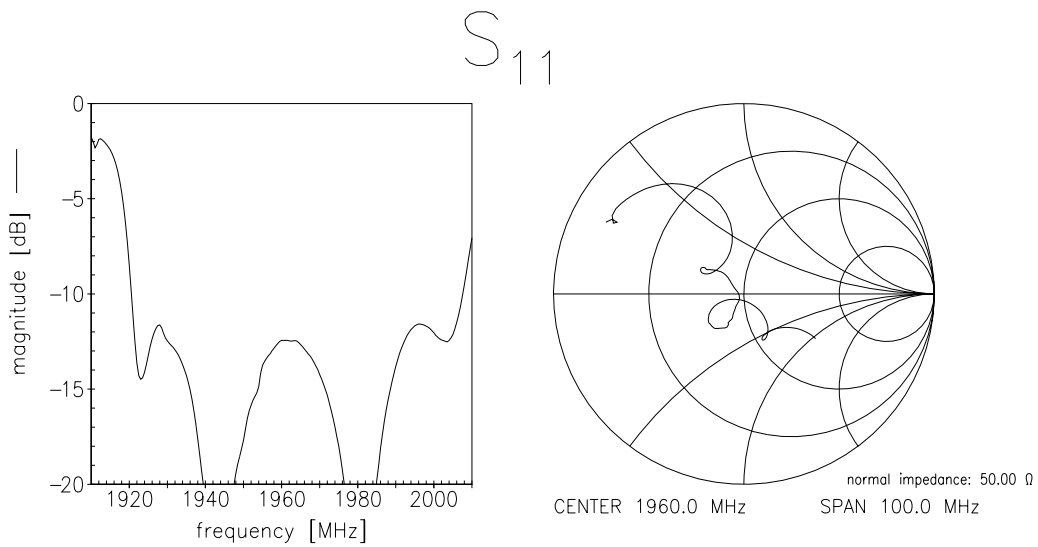
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Reflection coefficients of the PCS filter (measurement)





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Low-Loss Dual Band Filter for Mobile Communication

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Characteristics of AMPS Rx filter

Operating temperature range: $T = -30$ to $+70$ °C *

Terminating source impedance: $Z_S = 50 \Omega$

Terminating load impedance: $Z_L = 50 \Omega$

| | | min. | typ. | max. | |
|--------------------------------------|-----------------|------|-------|------|-----|
| Center frequency | f_c | — | 881,5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | | | | |
| 869,0...894,0MHz | | — | 2,5 | 3,0 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 869,0...894,0MHz | | — | 0,9 | 1,4 | dB |
| Input return loss | | | | | |
| 869,0...894,0 MHz | | 10,0 | 12,0 | — | dB |
| Output return loss | | | | | |
| 869,0...894,0 MHz | | 10,0 | 13,0 | — | 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 | 31,5 | — | dB |
| 2300,0...2600,0MHz | | 25,0 | 30,0 | — | dB |
| Tx band suppression | | | | | |
| 824,0...849,0MHz | | 35,0 | 40,0 | — | dB |

* all values also fulfill the temperature range -30 to $+85$ °C



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Characteristics of AMPS Rx filter

Operating temperature range: $T = 25 \pm 2 \text{ }^{\circ}\text{C}$
Terminating source impedance: $Z_S = 50 \text{ } \Omega$
Terminating load impedance: $Z_L = 50 \text{ } \Omega$

| | | min. | typ. | max. | |
|--------------------------------------|-----------------|------|-------|------|-----|
| Center frequency | f_c | — | 881,5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 2,4 | 2,6 | dB |
| 869,0...894,0MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0,6 | 1,1 | dB |
| 869,0...894,0MHz | | | | | |
| Input return loss | | 10,0 | 12,5 | — | dB |
| 869,0...894,0 MHz | | | | | |
| Output return loss | | 10,0 | 13,5 | — | dB |
| 869,0...894,0 MHz | | | | | |
| 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 | 31,5 | — | dB |
| 2300,0...2600,0MHz | | 25,0 | 30,0 | — | dB |
| Tx band suppression | | 35,0 | 40,0 | — | dB |
| 824,0...849,0MHz | | | | | |



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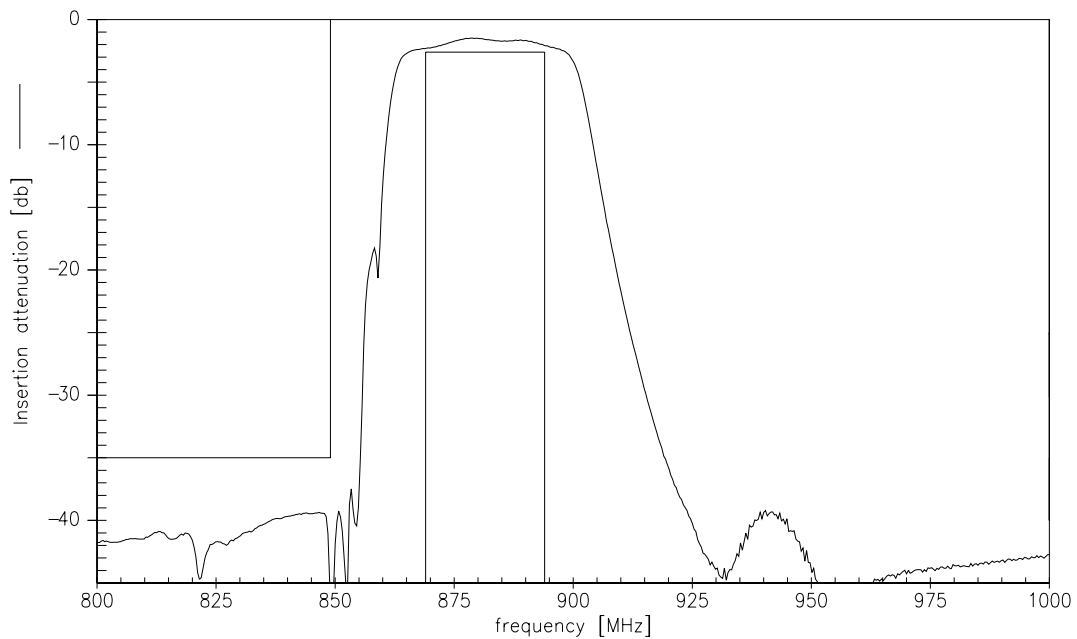
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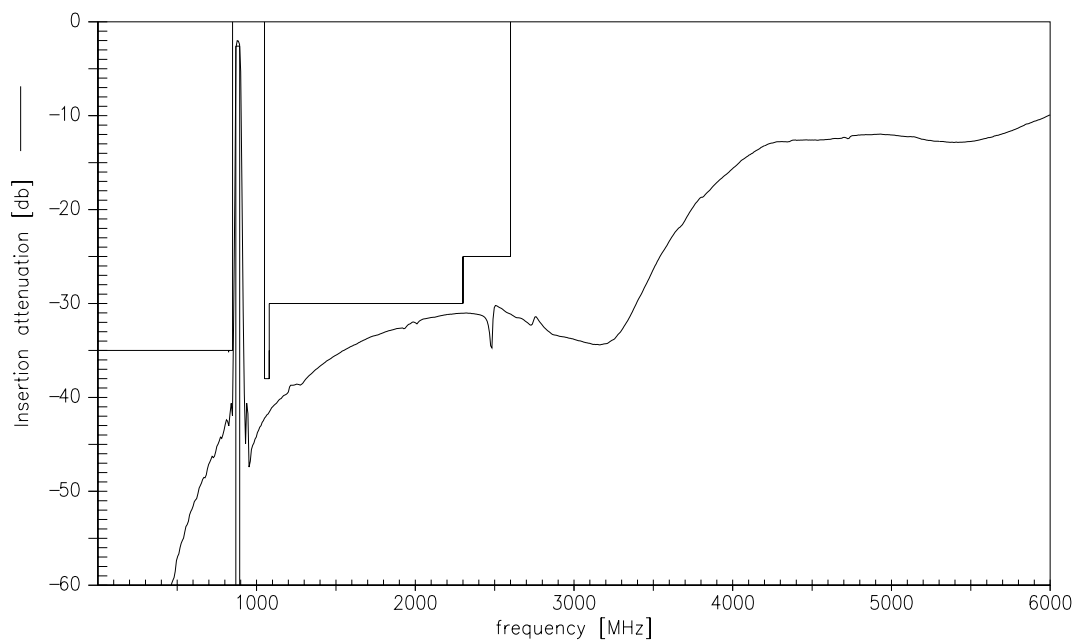
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Transfer function of the AMPS filter (narrow band measurement)



Transfer function of the AMPS filter (wide band measurement)





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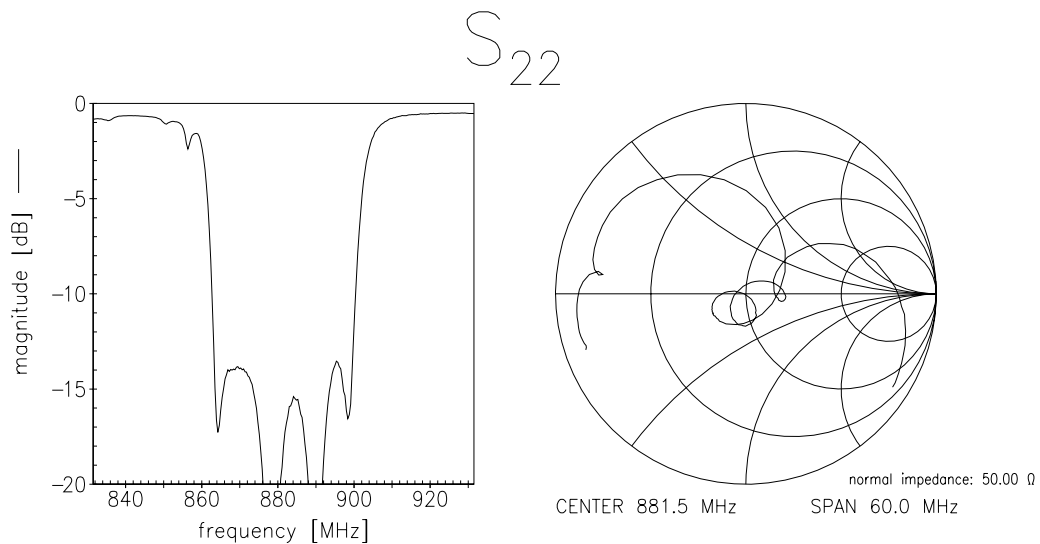
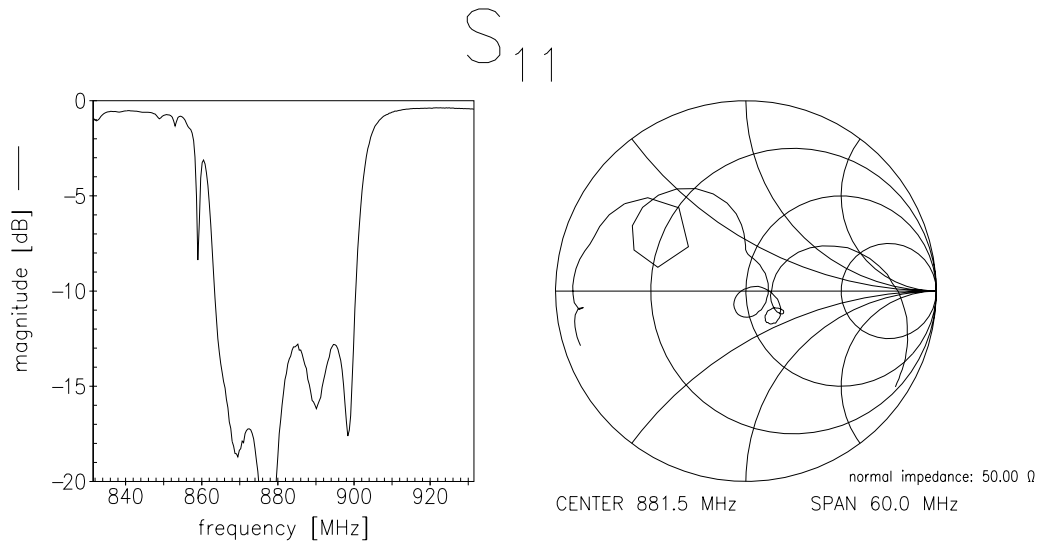
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Reflection coefficients of the AMPS filter (measurement)





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