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SAW filters for mobile communications

Series/Type: B4219

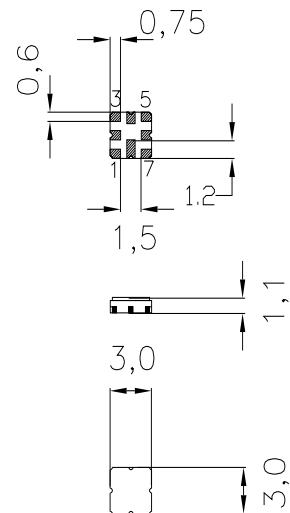
The following products presented in this data sheet are being withdrawn.

| 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.


 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**)



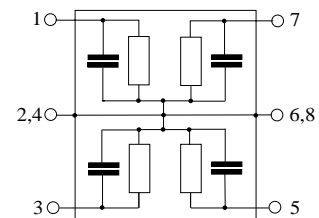
Dimensions in mm, approx. weight 0,037 g

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. | P_{IN} | 13 | dBm | |
| 824...849 MHz | | | | |
| 1850...1910 MHz | | | | |


Characteristics of PCS Rx filter

Operating temperature range: $T = -30$ 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} | — | 3,7 | 4,3 | dB |
| | 1930,0... 1990,0MHz | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,9 | 2,5 | dB |
| | 1930,0... 1990,0MHz | | | | |
| Input return loss | | 10,0 | 11,5 | — | dB |
| | 1930,0... 1990,0 MHz | | | | |
| Output return loss | | 10,0 | 11,5 | — | dB |
| | 1930,0... 1990,0 MHz | | | | |
| Attenuation | α | 20,0 | 22,0 | — | dB |
| | 30,0... 1850,0 MHz | | | | |
| | 2110,0... 2400,0 MHz | 20,0 | 31,0 | — | dB |
| Tx band suppression | | 13,0 | 20,0 | — | dB |
| | 1850,0... 1910,0 MHz | | | | |


Characteristics of PCS Rx filter

Operating temperature range: $T = -30$ 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} | — | 3,7 | 4,2 | dB |
| | 1930,0... 1990,0MHz | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,9 | 2,4 | dB |
| | 1930,0... 1990,0MHz | | | | |
| Input return loss | | 10,0 | 12,0 | — | dB |
| | 1930,0... 1990,0 MHz | | | | |
| Output return loss | | 10,0 | 12,0 | — | dB |
| | 1930,0... 1990,0 MHz | | | | |
| Attenuation | α | 20,0 | 22,0 | — | dB |
| | 30,0... 1850,0 MHz | | | | |
| | 2110,0... 2400,0 MHz | 20,0 | 31,0 | — | dB |
| Tx band suppression | | 15,0 | 20,0 | — | dB |
| | 1850,0... 1910,0 MHz | | | | |

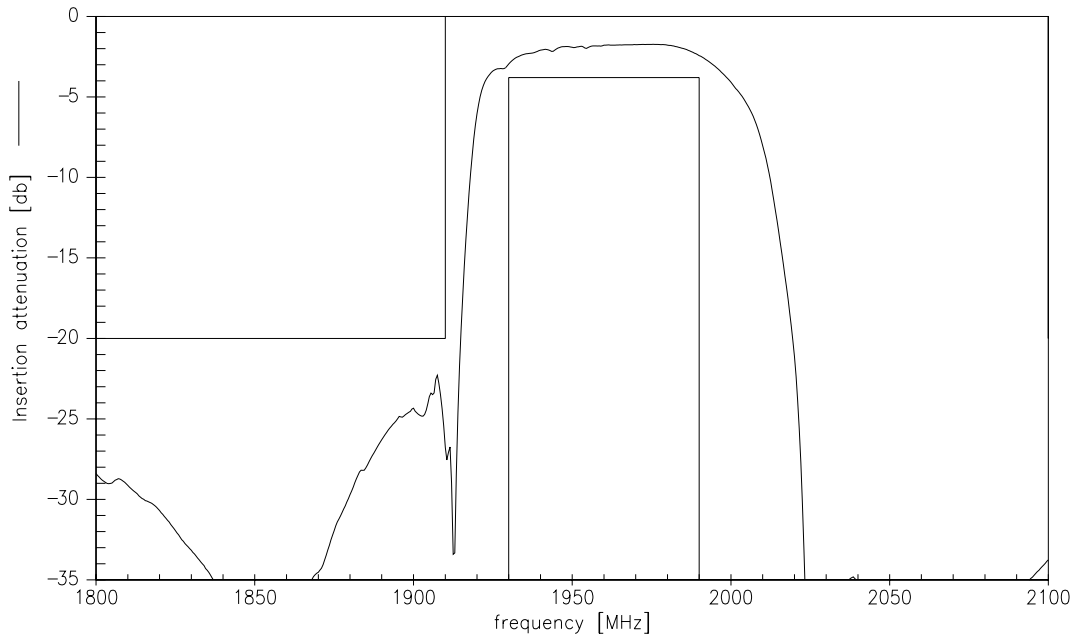

Characteristics of PCS Rx filter

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

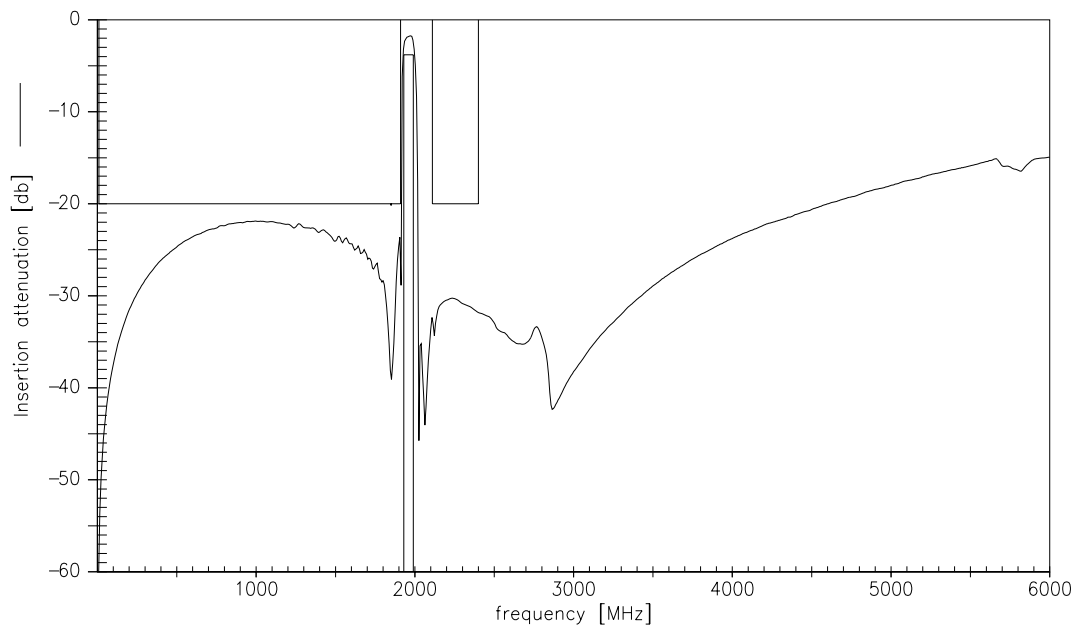
| | | min. | typ. | max. | |
|--------------------------------------|-----------------|-------------|-------------|-------------|-----|
| Center frequency | f_c | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 3,4 | 3,7 | dB |
| 1930,0...1990,0MHz | | | | | |
| Amplitude ripple (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 | | | | | |



Transfer function of the PCS filter (narrow band measurement)

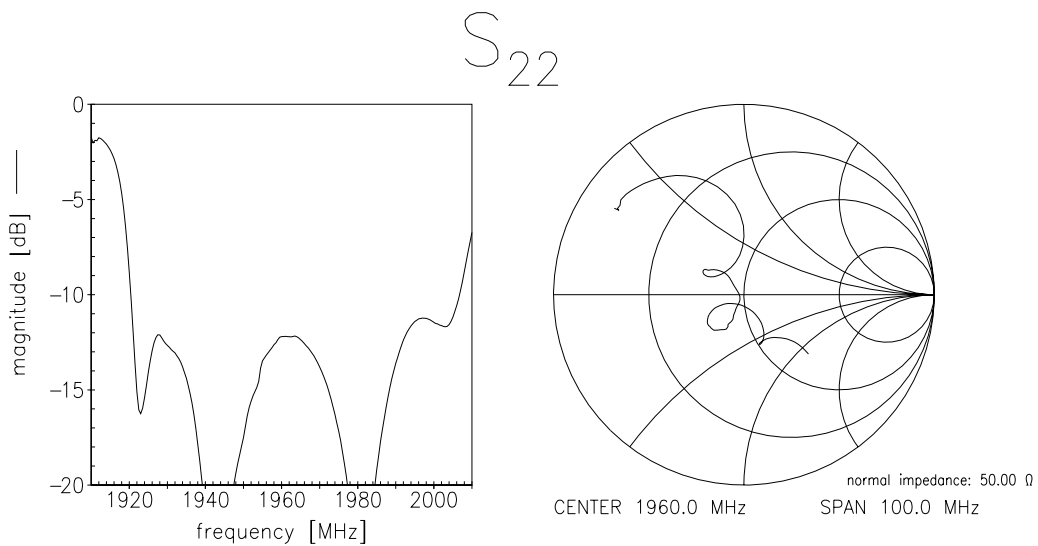
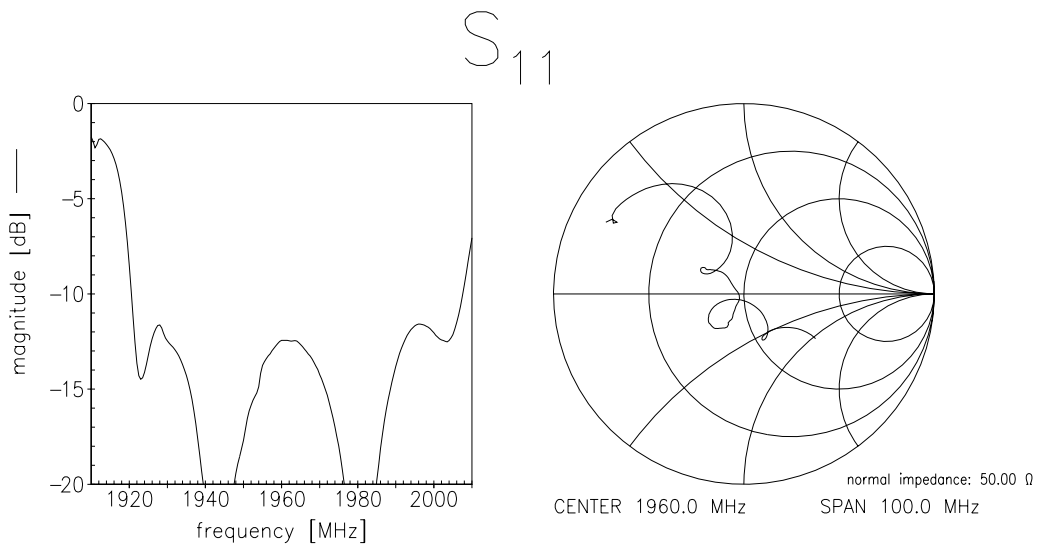


Transfer function of the PCS filter (wide band measurement)





Reflection coefficients of the PCS filter (measurement)




Characteristics of AMPS Rx filter

Operating temperature range: $T = -30$ to $+70$ °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} | — | 2,5 | 3,0 | dB |
| 869,0...894,0MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0,9 | 1,4 | dB |
| 869,0...894,0MHz | | | | | |
| Input return loss | | 10,0 | 12,0 | — | dB |
| 869,0...894,0 MHz | | | | | |
| Output return loss | | 10,0 | 13,0 | — | 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 | — | |
| 1080,0...2300,0MHz | | 30,0 | 31,5 | — | |
| 2300,0...2600,0MHz | | 25,0 | 30,0 | — | |
| Tx band suppression | | 35,0 | 40,0 | — | dB |
| 824,0...849,0MHz | | | | | |

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

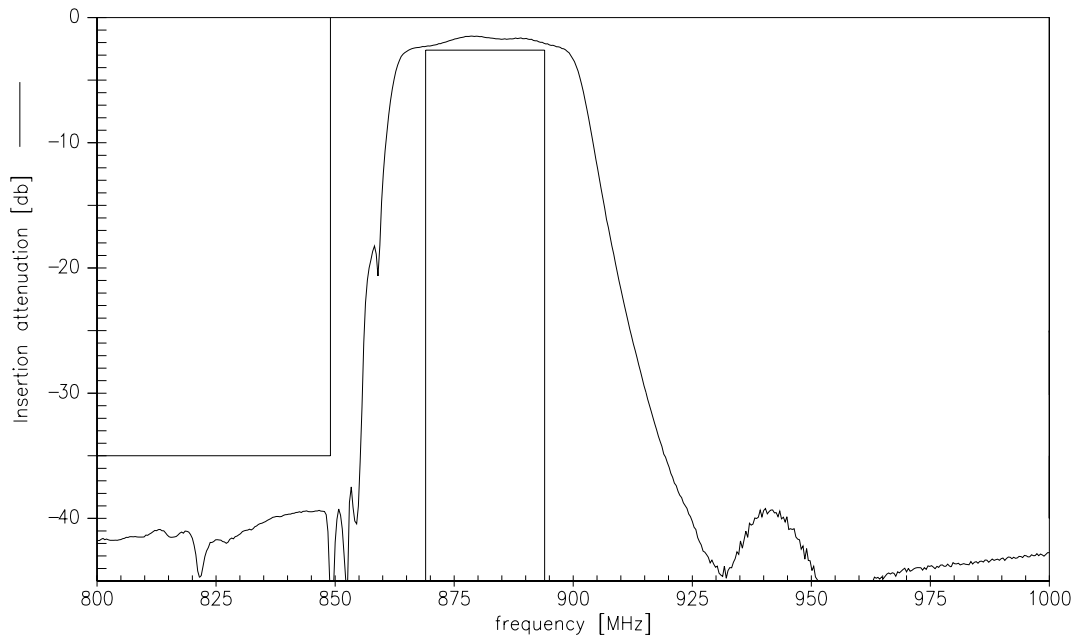

Characteristics of AMPS Rx filter

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

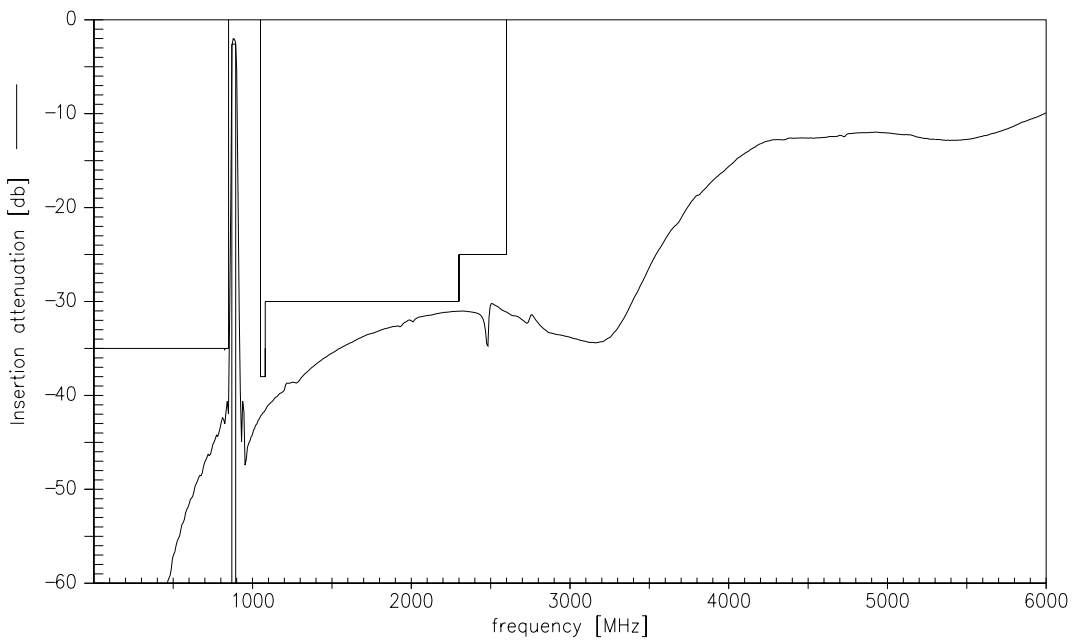
| | | min. | typ. | max. | |
|--------------------------------------|-----------------|------|-------|------|-----|
| Center frequency | f_c | — | 881,5 | — | MHz |
| Maximum insertion attenuation | α_{\max} | — | 2,4 | 2,6 | dB |
| 869,0...894,0MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 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 | — | |
| 1080,0...2300,0MHz | | 30,0 | 31,5 | — | |
| 2300,0...2600,0MHz | | 25,0 | 30,0 | — | |
| Tx band suppression | | 35,0 | 40,0 | — | dB |
| 824,0...849,0MHz | | | | | |



Transfer function of the AMPS filter (narrow band measurement)

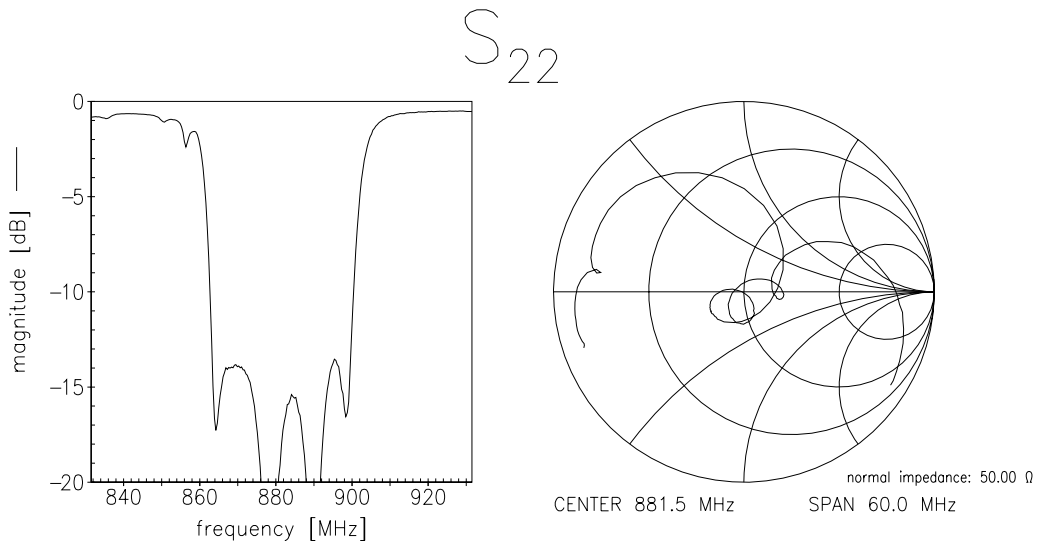
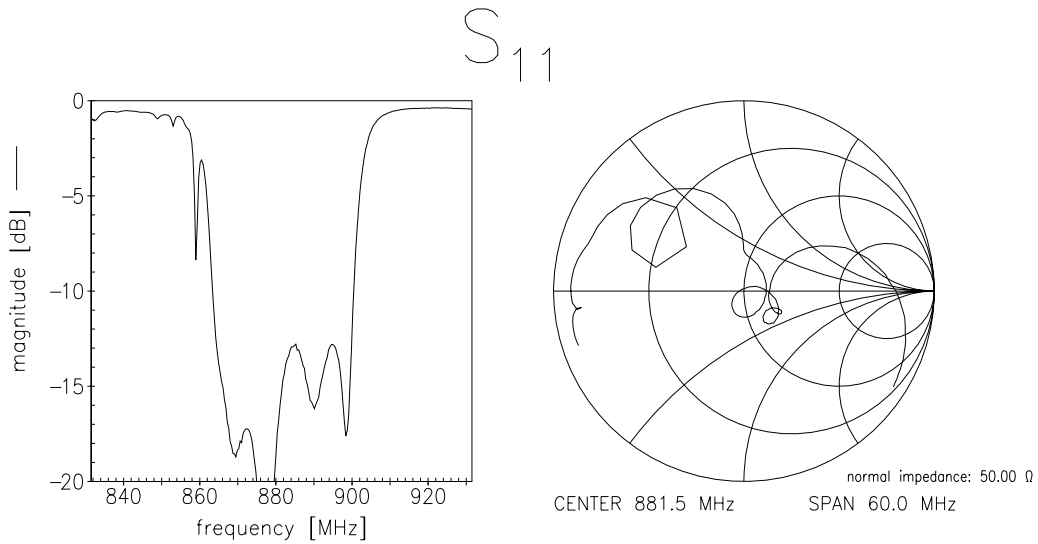


Transfer function of the AMPS filter (wide band measurement)





Reflection coefficients of the AMPS filter (measurement)



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