



SAW Components

Data Sheet B4226





SAW Components

B4226

Low-Loss Dual Band Filter for Mobile Communication

881,5 & 1960,0 MHz

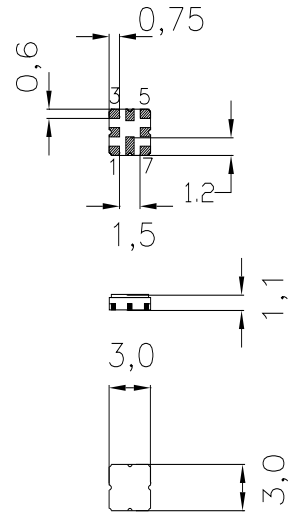
Data Sheet



Ceramic package **QCC8D**

Features

- Low-loss RF filter for mobile telephone AMPS and PCS bands, receive path
- Device with two integrated Rx-filters
- Usable passband :
Filter 1 (AMPS): 25 MHz
Filter 2 (PCS): 60MHz
- No matching network required for operation at 50 Ω
- Ceramic package for **Surface Mounted Technology (SMT)**



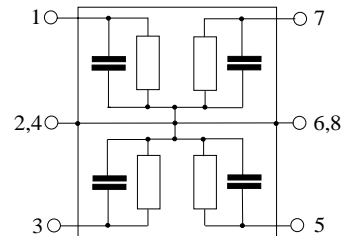
Dimensions in mm, approx. weight 0,037 g

Terminals

- Ni, gold-plated

Pin configuration

- 1 Input [Filter 1]
- 3 Input [Filter 2]
- 2,4,6,8 Case ground, to be grounded
- 5 Output [Filter 2]
- 7 Output [Filter 1]



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B4226 | B39202-B4226-U810 | C61157-A7-A72 | F61074-V8101-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

| | | | |
|----------------------------|-----------|------------|-----|
| Operable temperature range | T | - 20 /+ 80 | °C |
| Storage temperature range | T_{stg} | - 30 /+ 85 | °C |
| DC voltage | V_{DC} | 3 | V |
| Input power max. | P_{IN} | 15 | dBm |
| 824...849 MHz | | | |
| 1850...1910 MHz | | 13 | dBm |



Characteristics of Filter 2 (PCS)

Operating temperature range: $T = -20$ 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... 1940,0 MHz | | — | 2,5 | 3,7 | dB |
| 1940,0... 1990,0 MHz | | — | 2,2 | 2,8 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| 1930,0... 1990,0 MHz | | — | 1,1 | 2,3 | dB |
| Input return loss | | | | | |
| 1930,0... 1990,0 MHz | | 9 | 10 | — | dB |
| Output return loss | | | | | |
| 1930,0... 1990,0 MHz | | 9 | 10 | — | dB |
| Attenuation | α | | | | |
| 965,0... 1130,0 MHz | | 42 | 44 | — | dB |
| 1130,0... 1190,0 MHz | | 45 | 47 | — | dB |
| 1530,0... 1590,0 MHz | | 36 | 38 | — | dB |
| 1669,0... 1694,0 MHz | | 33 | 36 | — | dB |
| 2030,0... 2050,0 MHz | | 15 | 16 | — | dB |
| 2050,0... 2110,0 MHz | | 18 | 19 | — | dB |
| 2110,0... 3000,0 MHz | | 20 | 26 | — | dB |
| 3000,0... 3600,0 MHz | | 24 | 26 | — | dB |
| Tx band suppression | | | | | |
| 1830,0... 1900,0MHz | | 12 | 18 | — | dB |
| 1900,0... 1910,0 MHz | | 11 | 13 | — | dB |
| Input return loss phase @ 881,5MHz | | | | | |
| Phase | | -86 | -81 | -76 | ° |



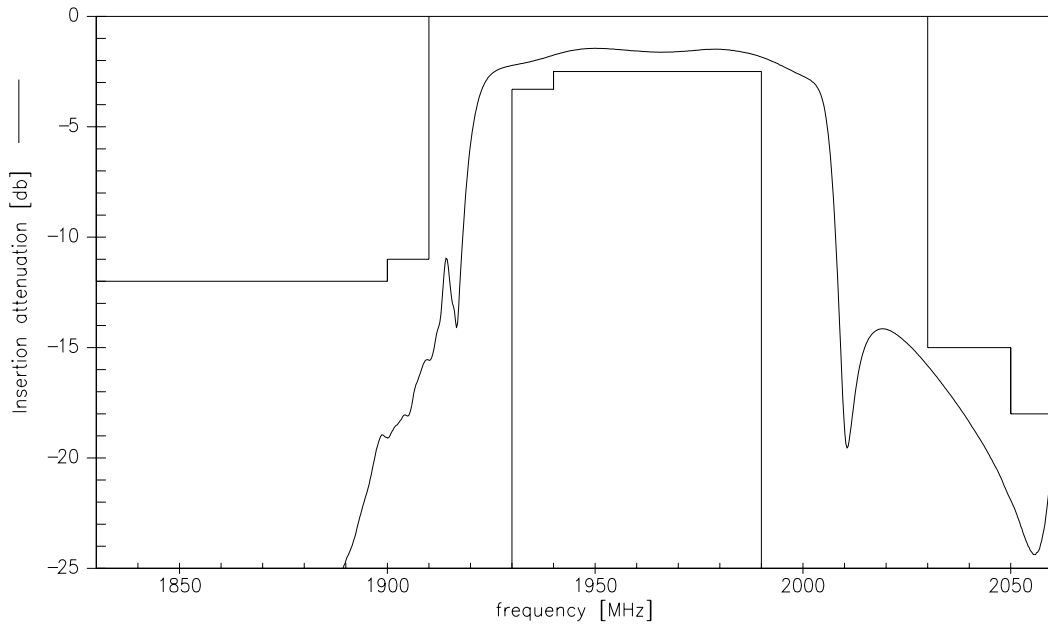
Characteristics of Filter 2 (PCS)

Operating temperature range: $T = 25 \pm 10^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 50 \Omega$

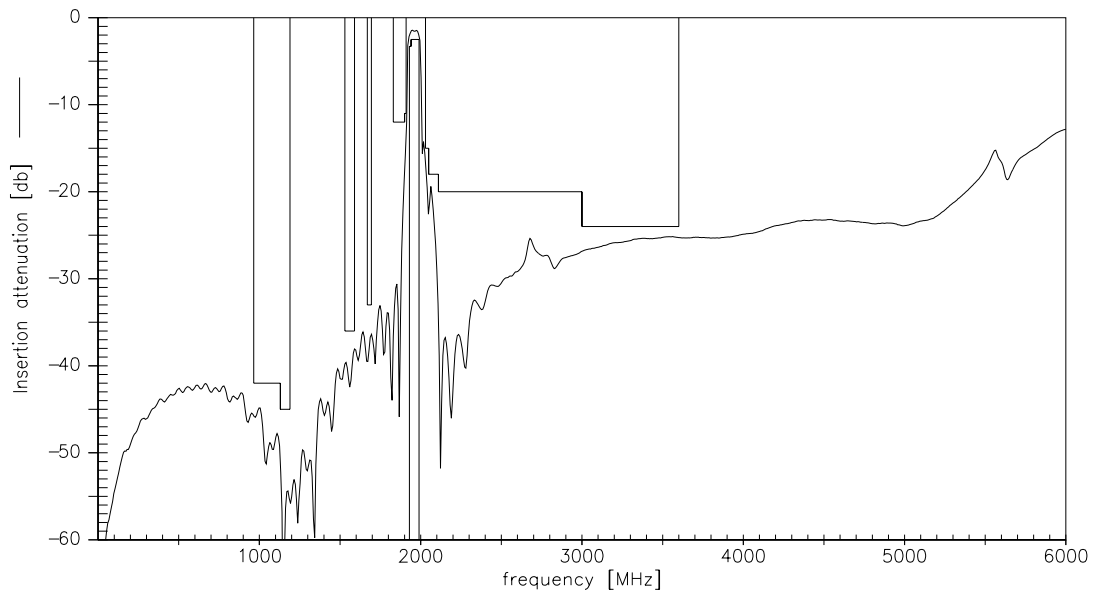
| | | min. | typ. | max. | |
|---|----------------------|------|--------|------|-----|
| Center frequency | f_c | — | 1960,0 | — | MHz |
| Maximum insertion attenuation | α_{\max} | | | | |
| | 1930,0... 1940,0 MHz | — | 2,2 | 3,3 | dB |
| | 1940,0... 1990,0 MHz | — | 1,8 | 2,5 | dB |
| Amplitude ripple (p-p) | $\Delta\alpha$ | | | | |
| | 1930,0... 1990,0 MHz | — | 0,8 | 1,9 | dB |
| Input return loss | | | | | |
| | 1930,0... 1990,0 MHz | 9 | 11 | — | dB |
| Output return loss | | | | | |
| | 1930,0... 1990,0 MHz | 9 | 11 | — | dB |
| Attenuation | α | | | | |
| | 965,0... 1130,0 MHz | 42 | 44 | — | dB |
| | 1130,0... 1190,0 MHz | 45 | 47 | — | dB |
| | 1530,0... 1590,0 MHz | 36 | 38 | — | dB |
| | 1669,0... 1694,0 MHz | 33 | 36 | — | dB |
| | 2030,0... 2050,0 MHz | 15 | 16 | — | dB |
| | 2050,0... 2110,0 MHz | 18 | 19 | — | dB |
| | 2110,0... 3000,0 MHz | 20 | 26 | — | dB |
| | 3000,0... 3600,0 MHz | 24 | 26 | — | dB |
| Tx band suppression | | | | | |
| | 1830,0... 1900,0 MHz | 12 | 18 | — | dB |
| | 1900,0... 1910,0 MHz | 11 | 13 | — | dB |
| Input return loss phase @ 881,5MHz | | | | | |
| | Phase | -86 | -81 | -76 | ° |



Transfer function of the PCS filter (narrow band measurement)



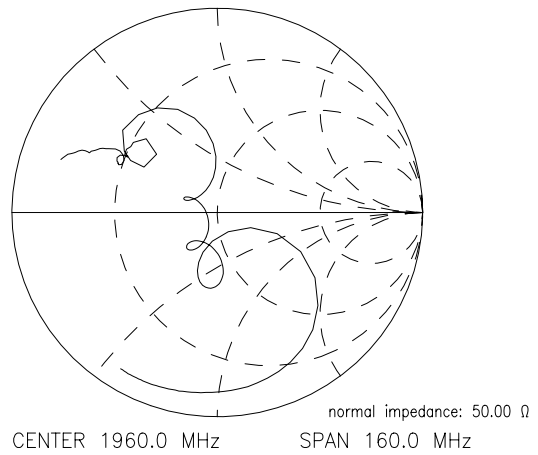
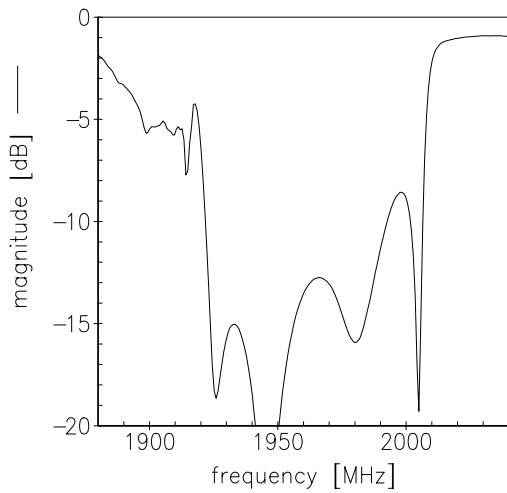
Transfer function of the PCS filter (wide band measurement)



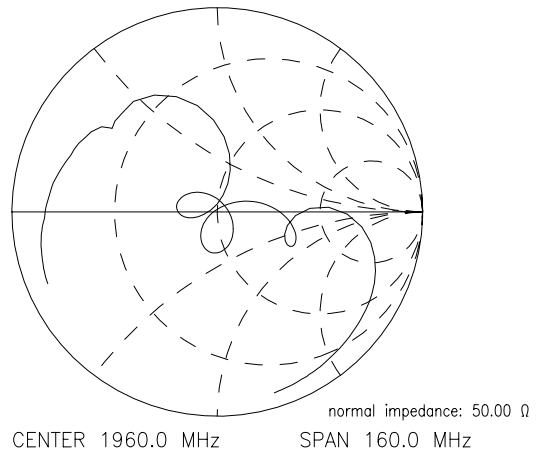
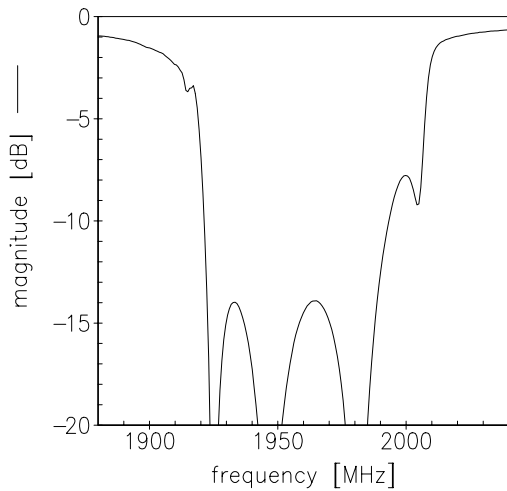


Reflection coefficients of the PCS filter (measurement)

S_{11}



S_{22}





Characteristics of AMPS Rx filter

Operating temperature range: $T = -20$ 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} | — | 2,4 | 3,0 | dB |
| 869,0...894,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0,8 | 1,4 | dB |
| 869,0...894,0MHz | | | | | |
| Input return loss | | 10 | 12 | — | dB |
| 869,0...894,0 MHz | | | | | |
| Output return loss | | 10 | 12 | — | dB |
| 869,0...894,0 MHz | | | | | |
| Attenuation | α | | | | |
| 10,0...700,0 MHz | | 40 | 45 | — | dB |
| 700,0...824,0 MHz | | 35 | 38 | — | |
| 849,0...859,0 MHz | | 10 | 14 | — | dB |
| 914,0...916,0 MHz | | 20 | 23 | — | |
| 916,0...939,0 MHz | | 23 | 26 | — | dB |
| 939,0...949,0 MHz | | 30 | 45 | — | |
| 949,0...1200,0 MHz | | 33 | 37 | — | dB |
| 1200,0...1294,0 MHz | | 32 | 35 | — | |
| 1294,0...1694,0 MHz | | 28 | 31 | — | dB |
| 1694,0...2400,0 MHz | | 27 | 30 | — | |
| 2400,0...3000,0 MHz | | 25 | 28 | — | dB |
| 3000,0...3500,0 MHz | | 12 | 16 | — | |
| 3500,0...6000,0 MHz | | 4 | 6 | — | dB |
| | | | | | |
| Tx band suppression | | 31 | 33 | — | dB |
| 824,0...849,0 MHz | | | | | |
| Input return loss phase @ 1960,0MHz | | | | | |
| Phase | | -170 | -165 | -160 | ° |



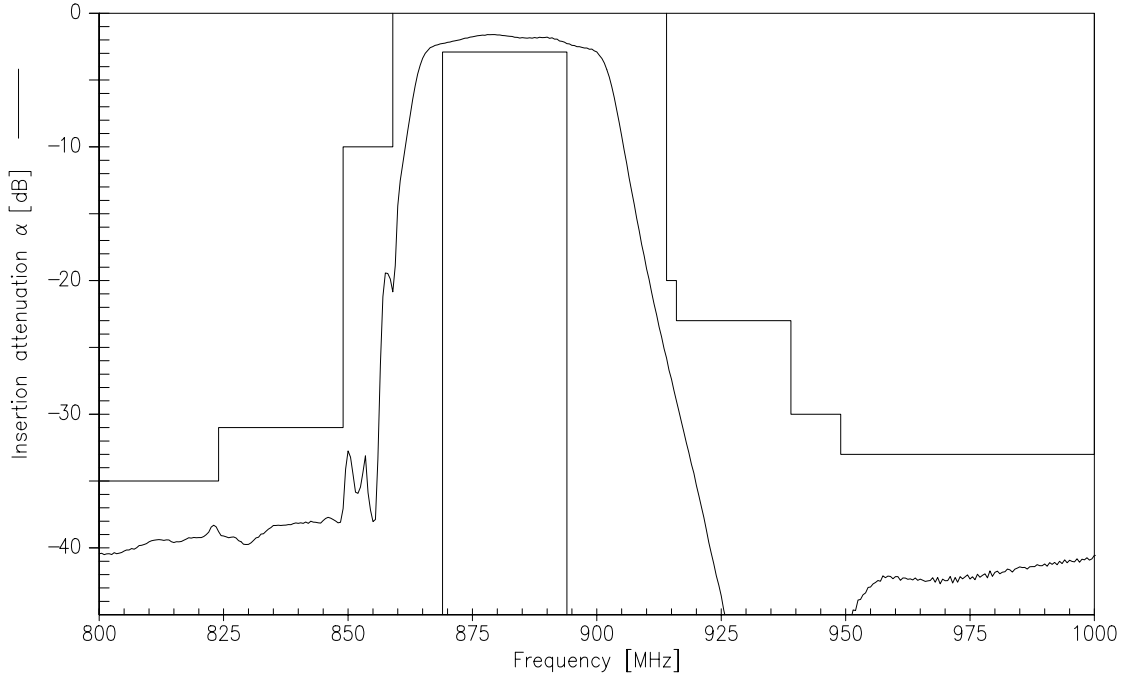
Characteristics of AMPS Rx filter

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

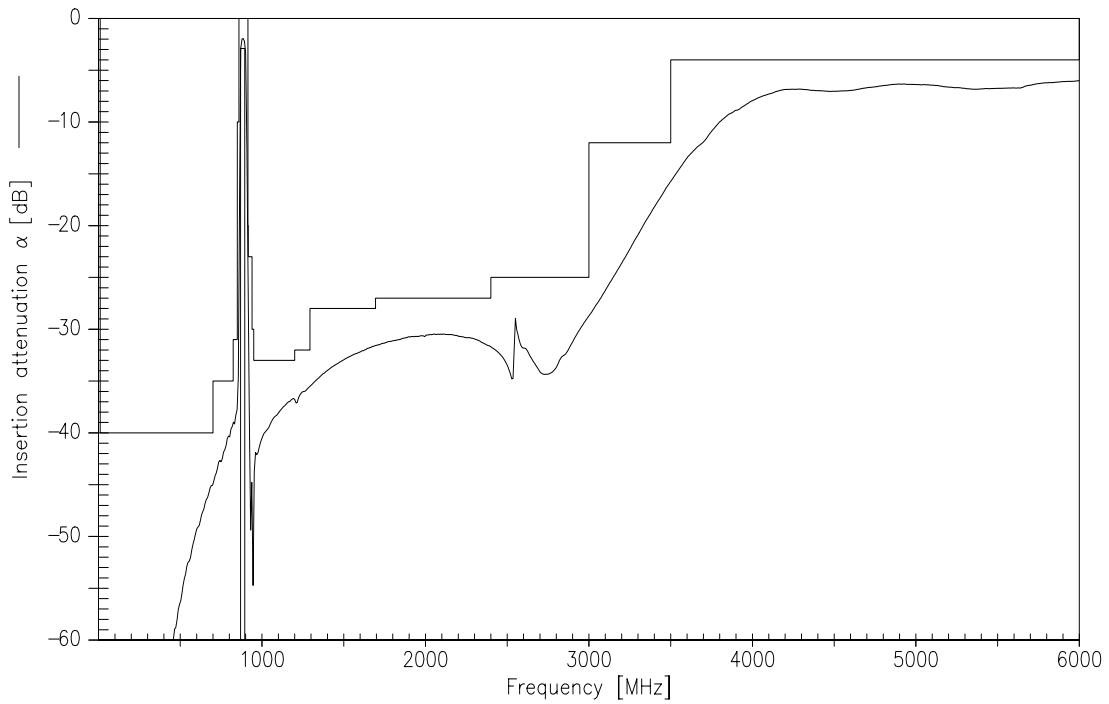
| | | min. | typ. | max. | |
|---|----------------|------|-------|------|-----|
| Center frequency | f_c | — | 881,5 | — | MHz |
| Maximum insertion attenuation 869,0...894,0 MHz | α_{max} | — | 2,3 | 2,9 | dB |
| Amplitude ripple (p-p) 869,0...894,0 MHz | $\Delta\alpha$ | — | 0,9 | 1,3 | dB |
| Input return loss 869,0...894,0 MHz | | 10 | 13 | — | dB |
| Output return loss 869,0...894,0 MHz | | 10 | 13 | — | dB |
| Attenuation | α | | | | |
| 10,0...700,0 MHz | | 40 | 45 | — | dB |
| 700,0...824,0 MHz | | 35 | 38 | — | dB |
| 849,0...859,0 MHz | | 10 | 14 | — | dB |
| 914,0...916,0 MHz | | 20 | 23 | — | dB |
| 916,0...939,0 MHz | | 23 | 26 | — | dB |
| 939,0...949,0 MHz | | 30 | 45 | — | dB |
| 949,0...1200,0 MHz | | 33 | 37 | — | dB |
| 1200,0...1294,0 MHz | | 32 | 35 | — | dB |
| 1294,0...1694,0 MHz | | 28 | 31 | — | dB |
| 1694,0...2400,0 MHz | | 27 | 30 | — | dB |
| 2400,0...3000,0 MHz | | 25 | 28 | — | dB |
| 3000,0...3500,0 MHz | | 12 | 16 | — | dB |
| 3500,0...6000,0 MHz | | 4 | 6 | — | dB |
| Tx band suppression 824,0...849,0 MHz | | 31 | 33 | — | dB |
| Input return loss phase @ 1960,0MHz Phase | | -170 | -165 | -160 | ° |



Transfer function of the AMPS filter (narrow band measurement)



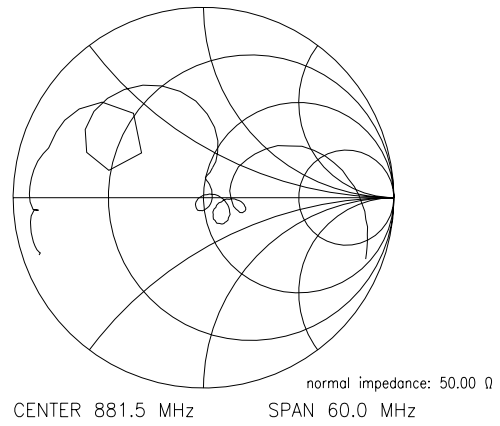
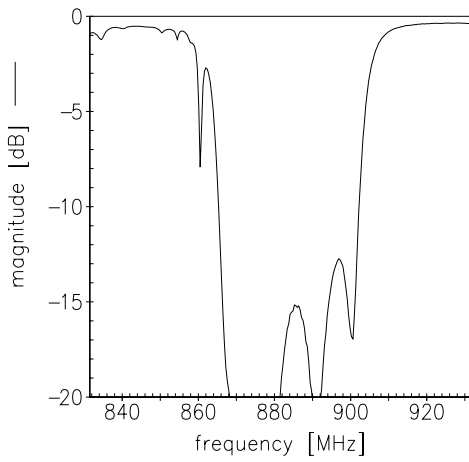
Transfer function of the AMPS filter (wide band measurement)



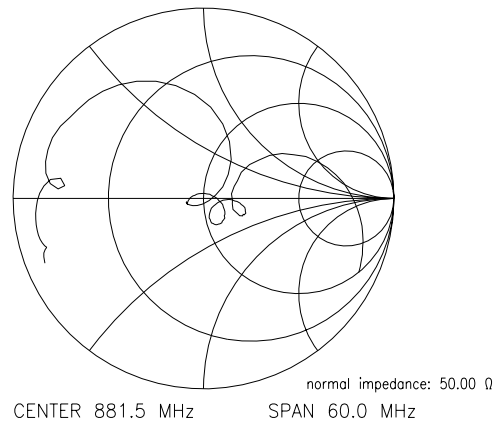
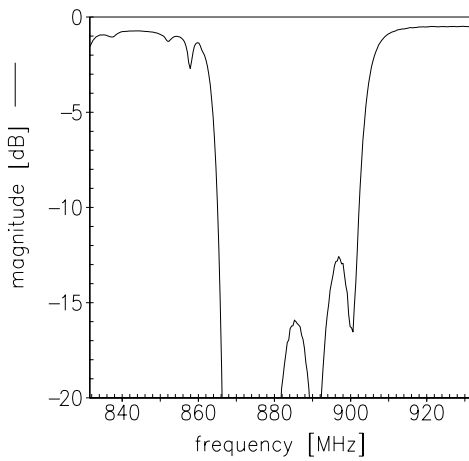


Reflection coefficients of the AMPS filter (measurement)

S_{11}



S_{22}





SAW Components

B4226

Low-Loss Dual Band Filter for Mobile Communication

881,5 & 1960,0 MHz

Data Sheet



Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC WT

P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2002. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

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.