



SAW Components

Data Sheet B7705





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B7705

Low-Loss Filter for Mobile Communication

942,5 MHz

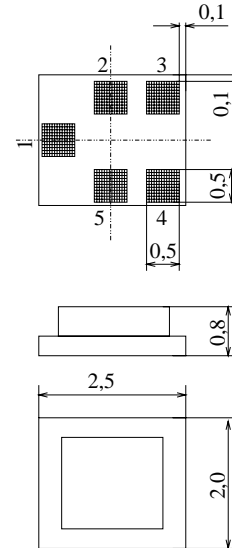
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Features

- Low-loss RF filter for mobile telephone EGSM system, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- Excellent symmetry
- Impedance transformation from 50 Ω to 150 Ω
- Ceramic package for **Surface Mounted Technology (SMT)**

Chip sized SAW package QCS5A



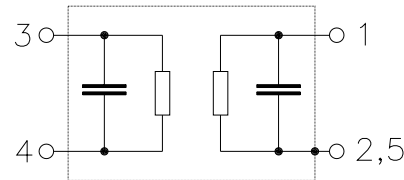
Dimensions in mm, approx. weight 0,015 g

Terminals

- Ni, gold-plated

Pin configuration

- 1 Input, unbalanced
- 3, 4 Output, balanced
- 2, 5 Case ground



| Type | Ordering code | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B7705 | B39941-B7705-B610 | C61157-A7-A71 | F61074-V8104-Z000 |

Electrostatic Sensitive Device (ESD)

Maximum ratings

| | | | | |
|----------------------------|-----------|-------------|-----|--|
| Operable temperature range | T | - 25 / + 85 | °C | source impedance 50Ω, load impedance 150Ω; CW input for min. 2000h |
| Storage temperature range | T_{stg} | - 40 / + 85 | °C | |
| DC voltage | V_{DC} | 3,5 | V | |
| Input power max. | P_{IN} | | dBm | |
| 880 ... 915 MHz | | 18 | | |
| 925 ... 960 MHz | | 8 | | |
| 1710 ... 1910 MHz | | 18 | | |
| 1920 ... 1980 MHz | | 10 | | |
| 2402 ... 2480 MHz | | 4 | | |
| elsewhere | | 0 | dBm | |



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Characteristics

Operating temperature range: $T = +25\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 150\ \Omega$

| | | min. | typ. | max. | |
|---|----------------|------|-------|------|--------|
| Center frequency | f_C | — | 942,5 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2,7 | 3,2 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 0,9 | 1,6 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Input VSWR | | — | 2,2 | 2,4 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output VSWR | | — | 2,2 | 2,3 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -5 | 0 | 5 | degree |
| 925,0 ... 960,0 MHz | | | | | |
| Output amplitude balance ($ S_{31}/S_{21} $) | | -0,5 | 0 | 0,5 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 880,0 MHz | | 50 | 75 | — | dB |
| 880,0 ... 905,0 MHz | | 30 | 45 | — | dB |
| 905,0 ... 915,0 MHz | | 23 | 27 | — | dB |
| 980,0 ... 1050,0 MHz | | 23 | 26 | — | dB |
| 1050,0 ... 6000,0 MHz | | 50 | 60 | — | dB |



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Characteristics

Operating temperature range: $T = -10$ to $+80$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 150 \Omega$

| | | min. | typ. | max. | |
|---|----------------|------|-------|------|--------|
| Center frequency | f_C | — | 942,5 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2,8 | 3,5 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,0 | 1,9 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Input VSWR | | — | 2,2 | 2,4 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output VSWR | | — | 2,2 | 2,3 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -5 | 0 | 5 | degree |
| 925,0 ... 960,0 MHz | | | | | |
| Output amplitude balance ($ S_{31}/S_{21} $) | | -0,5 | 0 | 0,5 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 880,0 MHz | | 50 | 75 | — | dB |
| 880,0 ... 905,0 MHz | | 30 | 40 | — | dB |
| 905,0 ... 915,0 MHz | | 18 | 27 | — | dB |
| 980,0 ... 1050,0 MHz | | 23 | 25 | — | dB |
| 1050,0 ... 6000,0 MHz | | 50 | 60 | — | dB |



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Characteristics

Operating temperature range: $T = -20$ to $+80$ °C
 Terminating source impedance: $Z_S = 50$ Ω
 Terminating load impedance: $Z_L = 150$ Ω

| | | min. | typ. | max. | |
|---|----------------|------|-------|------|--------|
| Center frequency | f_C | — | 942,5 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 2,9 | 3,7 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,0 | 2,1 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Input VSWR | | — | 2,2 | 2,4 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output VSWR | | — | 2,2 | 2,3 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -5 | 0 | 5 | degree |
| 925,0 ... 960,0 MHz | | | | | |
| Output amplitude balance ($ S_{31}/S_{21} $) | | -0,5 | 0 | 0,5 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 880,0 MHz | | 50 | 75 | — | dB |
| 880,0 ... 905,0 MHz | | 30 | 40 | — | dB |
| 905,0 ... 915,0 MHz | | 18 | 27 | — | dB |
| 980,0 ... 1050,0 MHz | | 22 | 25 | — | dB |
| 1050,0 ... 6000,0 MHz | | 50 | 60 | — | dB |



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Characteristics

Operating temperature range: $T = -30$ to $+85$ °C
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 150 \Omega$

| | | min. | typ. | max. | |
|---|----------------|------|-------|------|--------|
| Center frequency | f_C | — | 942,5 | — | MHz |
| Maximum insertion attenuation | α_{max} | — | 3,5 | 4,0 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Amplitude ripple (p-p) | $\Delta\alpha$ | — | 1,5 | 2,4 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Input VSWR | | — | 2,2 | 2,5 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output VSWR | | — | 2,2 | 2,5 | |
| 925,0 ... 960,0 MHz | | | | | |
| Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$) | | -5 | 0 | 5 | degree |
| 925,0 ... 960,0 MHz | | | | | |
| Output amplitude balance ($ S_{31}/S_{21} $) | | -0,5 | 0 | 0,5 | dB |
| 925,0 ... 960,0 MHz | | | | | |
| Attenuation | α | | | | |
| 0,0 ... 880,0 MHz | | 50 | 75 | — | dB |
| 880,0 ... 905,0 MHz | | 30 | 40 | — | dB |
| 905,0 ... 915,0 MHz | | 10 | 15 | — | dB |
| 980,0 ... 1050,0 MHz | | 21 | 23 | — | dB |
| 1050,0 ... 6000,0 MHz | | 50 | 60 | — | dB |



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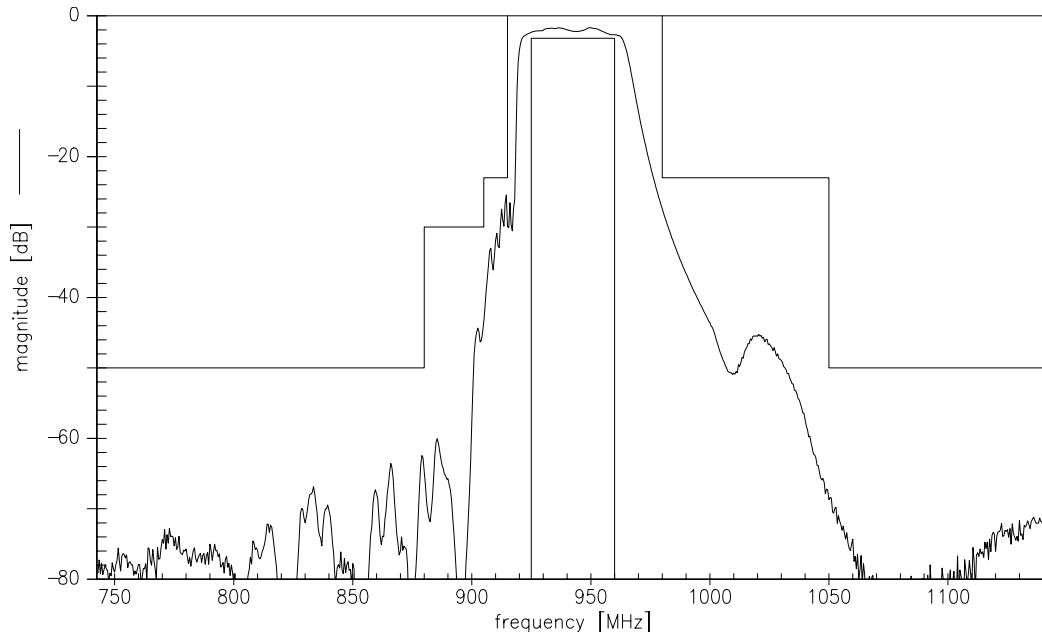
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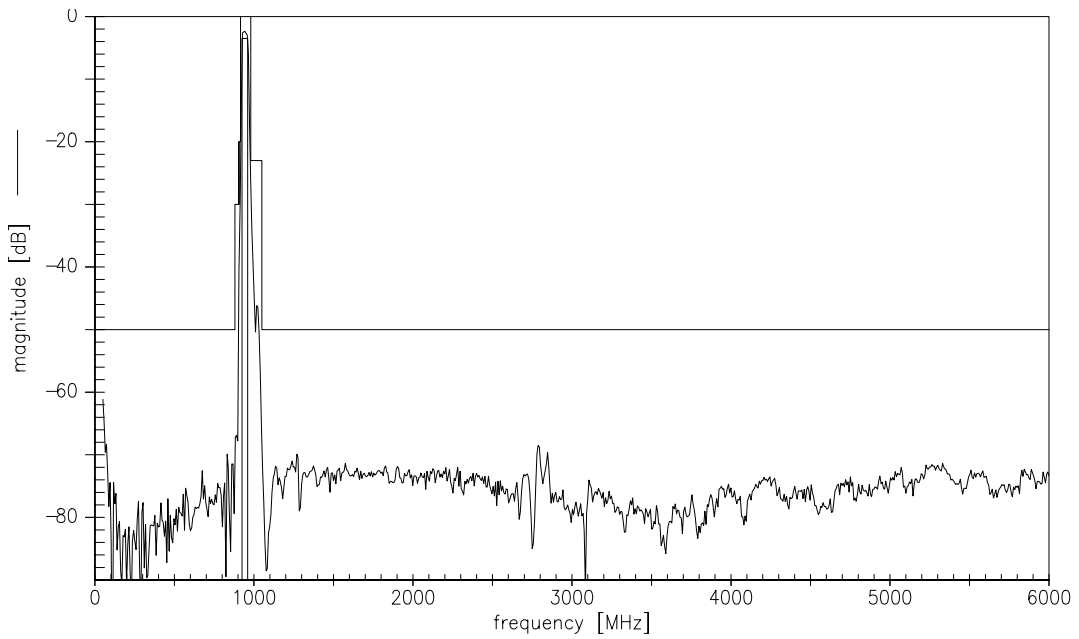
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Transfer function

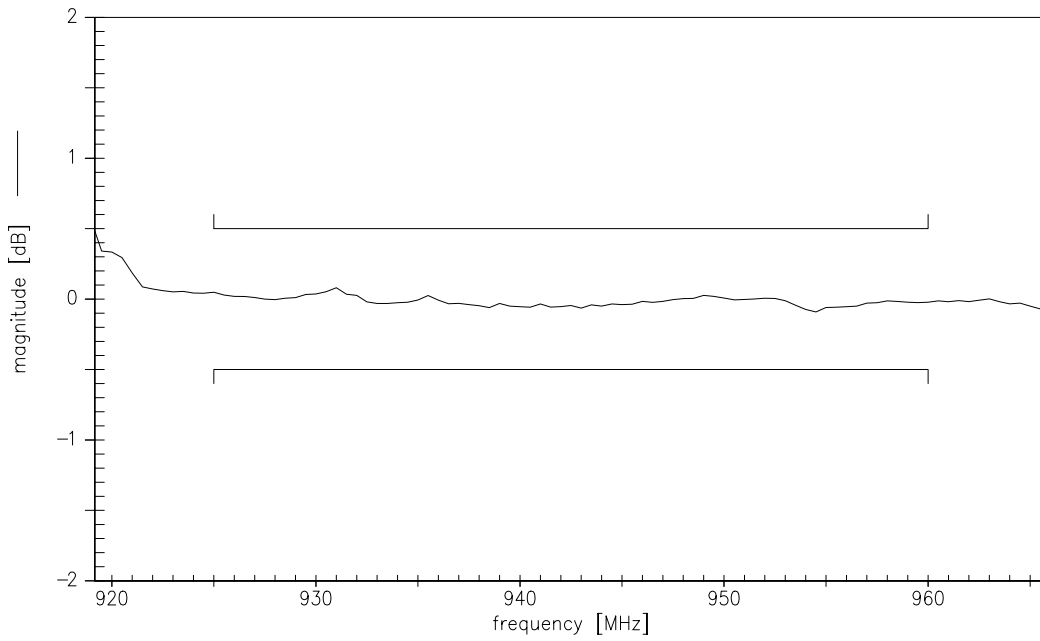


Transfer function (wideband)

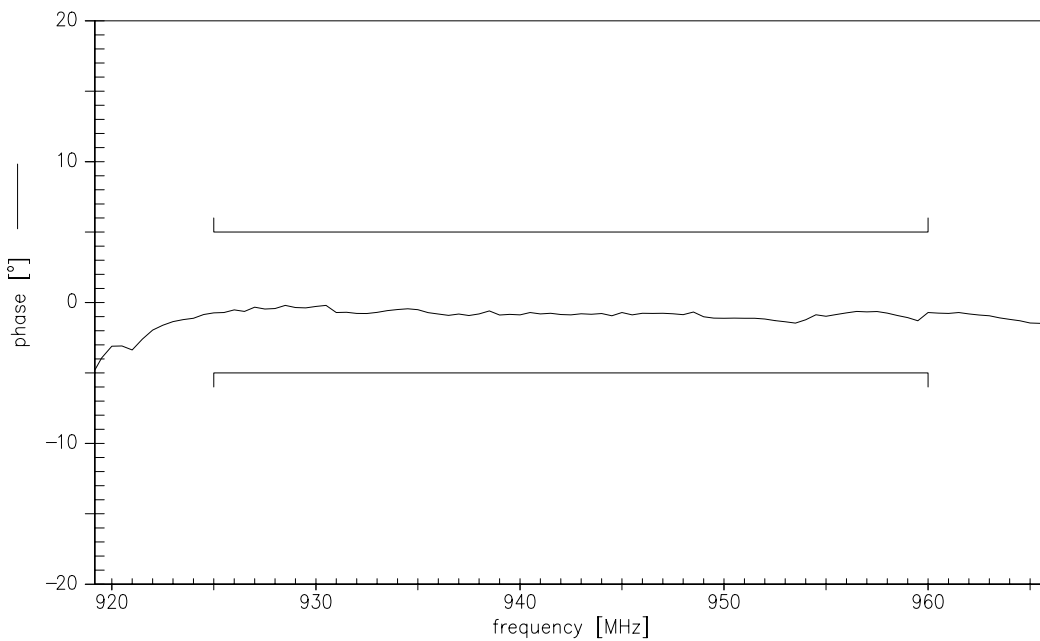




Output amplitude balance ($|S_{31}|/|S_{21}|$)



Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)





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Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC WT

P.O. Box 80 17 09, D-81617 München

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