EPCOS

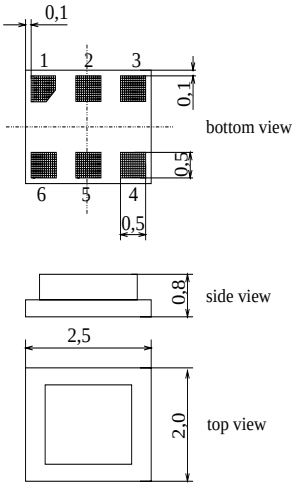
# SAW Components

*Data Sheet B7710*

**Chip sized SAW package DCS6l**

## Features

- Low-loss RF filter for mobile telephone EGSM systems, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced operation
- No external matching required
- Ceramic package for **S**urface **M**ounted **T**echnology (**SMT**)



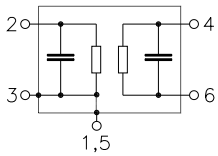

## Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,014g

## Pin configuration

| | |
|---|---|
| 2 | Input, unbalanced |
| 4, 6 | Balanced outputs |
| 1, 3, 5 | To be grounded |
| 1, 5 | Case ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7710 | B39941-B7710-C610 | C61157-A7-A76 | F61074-V8112-Z000 |

**E**lectrostatic **S**ensitive **D**evice (**ESD**)

## Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | – 10 / + 80 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40 / + 85 | ˚C | |
| DC voltage | $V_{DC}$ | 5 | V | |
| ESD voltage | $V_{ESD}$ | 200 | V | |
| Input power max. | | | | >2000 hrs at 85˚C |
| @ 880 ... 915 MHz | | 13 | | source and load impedance 50 Ω |
| @ 1710...1785 MHz | $P_{IN}$ | 13 | dBm | peak power of GSM signal, |
| @ 1850...1910 MHz | | 13 | | duty cycle 2 : 8, |
| elsewhere | | 0 | dBm | continuous wave |

## Characteristics

Operating temperature range: $T$ = 25 ± 2°C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω (balanced)

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 925,0 ... 960,0 MHz | | — | 3,0 | 3,3 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 925,0 ... 960,0 MHz | | — | 1,1 | 1,4 | dB |
| **VSWR** | | | | | |
| 925,0 ... 960,0 MHz | | — | 1,7 | 2,0 | |
| **Output phase balance** ($\phi(S_{31})-\phi(S_{21})+180°$) | | | | | |
| 925,0 ... 960,0 MHz | | -10 | — | 10 | ° |
| **Output amplitude balance** ($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 925,0 ... 960,0 MHz | | -1,0 | — | 1,0 | dB |
| **Diff. to common mode suppression** | $S_{sc12}$ | | | | |
| 925,0 ... 960,0 MHz | | 20 | 25 | — | dB |
| 855,0 ... 995,0 MHz | | 20 | 25 | — | dB |
| 1710,0 ... 1990,0 MHz | | 20 | 54 | — | dB |
| 3420,0 ... 3980,0 MHz | | 20 | 40 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 850,0 MHz | | 50 | 59 | — | dB |
| 850,0 ... 905,0 MHz | | 35 | 47 | — | dB |
| 905,0 ... 915,0 MHz | | 18 | 30 | — | dB |
| 980,0 ...1000,0 MHz | | 23 | 30 | — | dB |
| 1000,0 ...1050,0 MHz | | 30 | 40 | — | dB |
| 1050,0 ...2000,0 MHz | | 40 | 45 | — | dB |
| 2000,0 ...3000,0 MHz | | 30 | 35 | — | dB |
| 3000,0 ...4000,0 MHz | | 20 | 28 | — | dB |
| 4000,0 ...6000,0 MHz | | 15 | 22 | — | dB |

## Characteristics

Operating temperature range: $T$ = +10˚C to +60˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω (balanced)

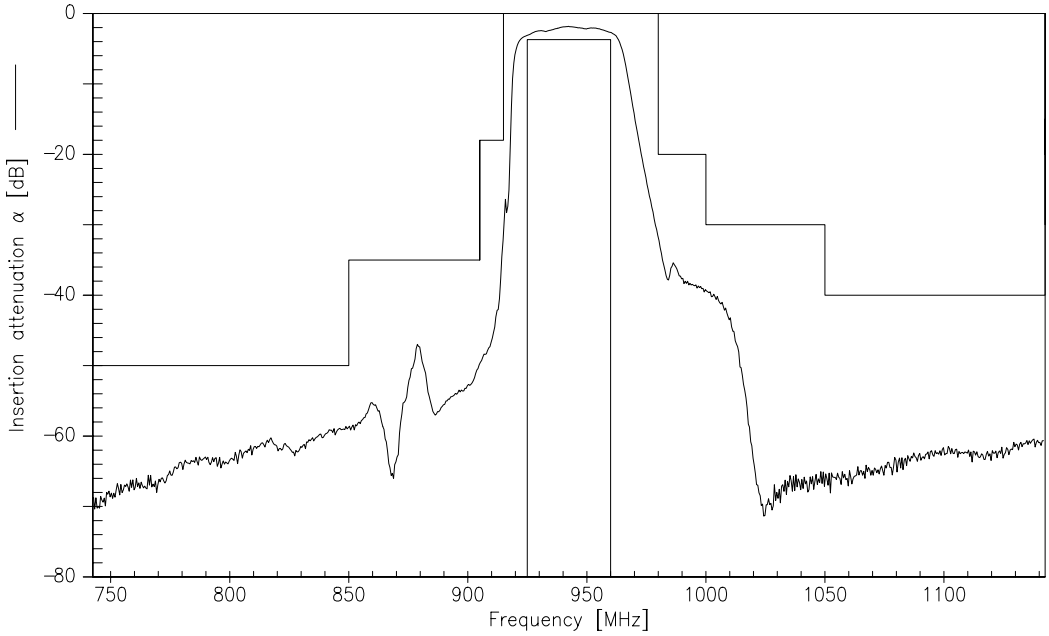
| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 925,0 ... 960,0 MHz | | — | 3,1 | 3,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 925,0 ... 960,0 MHz | | — | 1,2 | 1,6 | dB |
| **VSWR** | | | | | |
| 925,0 ... 960,0 MHz | | — | 1,7 | 2,0 | |
| **Output phase balance** ($\phi(S_{31})-\phi(S_{21})+180^\circ$) | | | | | |
| 925,0 ... 960,0 MHz | | -10 | — | 10 | ˚ |
| **Output amplitude balance** ($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 925,0 ... 960,0 MHz | | -1,0 | — | 1,0 | dB |
| **Diff. to common mode suppression** | $S_{sc12}$ | | | | |
| 925,0 ... 960,0 MHz | | 20 | 25 | — | dB |
| 855,0 ... 995,0 MHz | | 20 | 25 | — | dB |
| 1710,0 ... 1990,0 MHz | | 20 | 54 | — | dB |
| 3420,0 ... 3980,0 MHz | | 20 | 40 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 850,0 MHz | | 50 | 59 | — | dB |
| 850,0 ... 905,0 MHz | | 35 | 47 | — | dB |
| 905,0 ... 915,0 MHz | | 18 | 26 | — | dB |
| 980,0 ...1000,0 MHz | | 20 | 31 | — | dB |
| 1000,0 ...1050,0 MHz | | 30 | 40 | — | dB |
| 1050,0 ...2000,0 MHz | | 40 | 45 | — | dB |
| 2000,0 ...3000,0 MHz | | 30 | 35 | — | dB |
| 3000,0 ...4000,0 MHz | | 20 | 28 | — | dB |
| 4000,0 ...6000,0 MHz | | 15 | 22 | — | dB |

## Characteristics

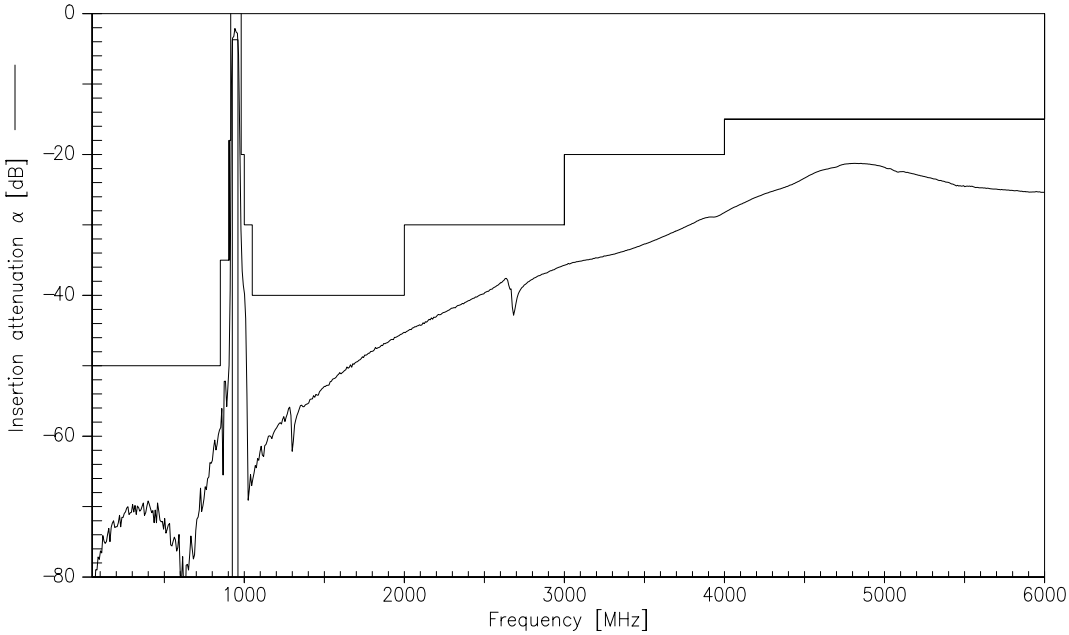
Operating temperature range: $T$ = -10˚C to +80˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω (balanced)

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 925,0 ... 960,0 MHz | | — | 3,2 | 3,7 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 925,0 ... 960,0 MHz | | — | 1,2 | 2,0 | dB |
| **VSWR** | | | | | |
| 925,0 ... 960,0 MHz | | — | 1,7 | 2,0 | |
| **Output phase balance** ($\phi(S_{31})-\phi(S_{21})+180^\circ$) | | | | | |
| 925,0 ... 960,0 MHz | | -10 | — | 10 | ˚ |
| **Output amplitude balance** ($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 925,0 ... 960,0 MHz | | -1,0 | — | 1,0 | dB |
| **Diff. to common mode suppression** | $S_{sc12}$ | | | | |
| 925,0 ... 960,0 MHz | | 20 | 25 | — | dB |
| 855,0 ... 995,0 MHz | | 20 | 25 | — | dB |
| 1710,0 ... 1990,0 MHz | | 20 | 54 | — | dB |
| 3420,0 ... 3980,0 MHz | | 20 | 40 | — | dB |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 850,0 MHz | | 50 | 59 | — | dB |
| 850,0 ... 905,0 MHz | | 35 | 47 | — | dB |
| 905,0 ... 915,0 MHz | | 18 | 26 | — | dB |
| 980,0 ...1000,0 MHz | | 20 | 29 | — | dB |
| 1000,0 ...1050,0 MHz | | 30 | 40 | — | dB |
| 1050,0 ...2000,0 MHz | | 40 | 45 | — | dB |
| 2000,0 ...3000,0 MHz | | 30 | 35 | — | dB |
| 3000,0 ...4000,0 MHz | | 20 | 28 | — | dB |
| 4000,0 ...6000,0 MHz | | 15 | 22 | — | dB |

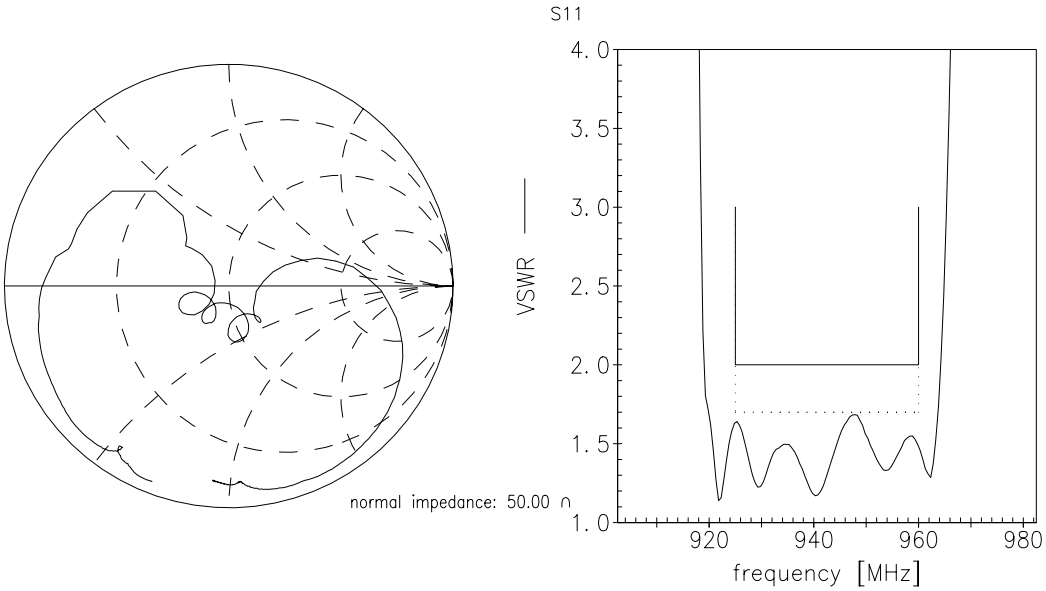
**Transfer function** (measurement)

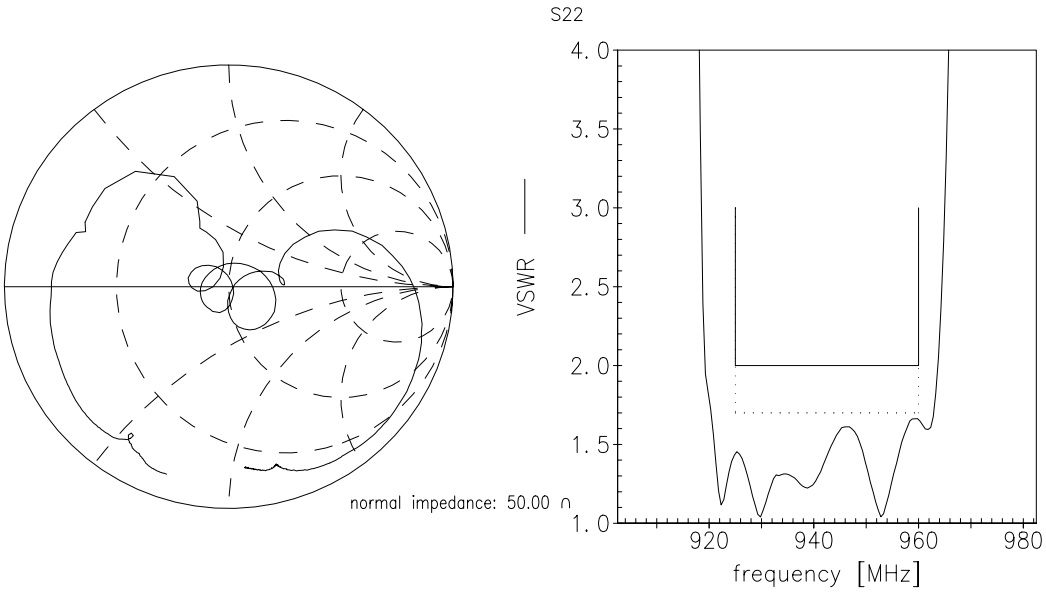



**Transfer function** (wideband measurement)



**Matching** (measurement)



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