EPCOS

# *SAW Components*

*Data Sheet B7707*



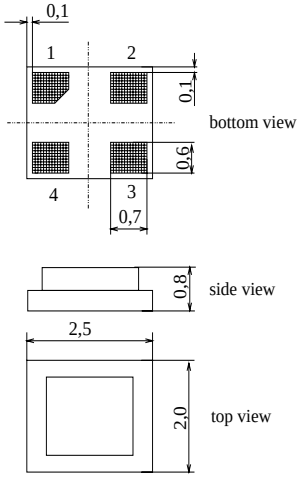
**Chip sized SAW package DCS4C**

## Features

- Low-loss RF filter for mobile telephone EGSM systems, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- No matching network required for operation at 50 Ω
- Suitable for GPRS class 1 to 12
- Package for **S**urface **M**ounted **T**echnology (**SMT**)

## Terminals

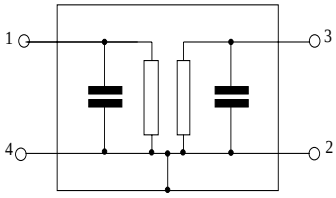
- Ni, gold-plated




Dimensions in mm, approx. weight 0,015g

## Pin configuration

| | |
|---|---|
| 1 | Input |
| 3 | Output |
| 2,4 | Ground |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B7707 | B39941-B7707-C510 | C61157-A7-A80 | F61074-V8153-Z000 |

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

## Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | – 30 / + 85 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40 / + 85 | ˚C | |
| DC voltage | $V_{DC}$ | 3 | V | |
| Input power at GSM850, GSM900, GSM1800 and GSM1900 Tx bands | $P_{IN}$ | 15 | dBm | peak power of GSM signal, duty cycle 4:8 |

## Characteristics

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

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 925,0 ... 960,0 MHz | | — | 2,8 | 3,3 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 925,0 ... 960,0 MHz | | — | 1,0 | 1,6 | dB |
| **Input VSWR** | | | | | |
| 925,0 ... 960,0 MHz | | — | 2,0 | 2,3 | |
| **Output VSWR** | | | | | |
| 925,0 ... 960,0 MHz | | — | 2,0 | 2,2 | |
| **Input return loss** | | | | | |
| 925,0 ... 960,0 MHz | | 8,0 | 9,0 | — | dB |
| **Input return loss phase** | | | | | |
| 1842,5 MHz | | -150,0 | -140,0 | -130,0 | ° |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 750,0 MHz | | 50 | 66 | — | dB |
| 750,0 ... 800,0 MHz | | 46 | 69 | — | dB |
| 800,0 ... 880,0 MHz | | 45 | 54 | — | dB |
| 880,0 ... 905,0 MHz | | 31 | 60 | — | dB |
| 905,0 ... 915,0 MHz | | 17 | 33 | — | dB |
| 980,0 ... 982,0 MHz | | 23 | 26 | — | dB |
| 982,0 ...1005,0 MHz | | 23 | 29 | — | dB |
| 1005,0 ...1025,0 MHz | | 30 | 52 | — | dB |
| 1025,0 ...1035,0 MHz | | 35 | 54 | — | dB |
| 1035,0 ...1760,0 MHz | | 40 | 55 | — | dB |
| 1760,0 ... 3120,0 MHz | | 34 | 38 | — | dB |
| 3120,0 ... 4000,0 MHz | | 18 | 26 | — | dB |
| 4000,0 ... 6000,0 MHz | | 8 | 18 | — | dB |

## Characteristics

Operating temperature range: $T$ = -20˚C to +75˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω

| | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 3,0 | 3,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 1,2 | 1,8 | dB |
| **Input VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,3 | |
| **Output VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,2 | |
| **Input return loss** | | | | | | |
| 925,0 ... 960,0 | MHz | | 8,0 | 9,0 | — | dB |
| **Input return loss phase** | | | | | | |
| 1842,5 | MHz | | -150,0 | -140,0 | -130,0 | ° |
| **Attenuation** | $\alpha$ | | | | | |
| 0,0 ... 750,0 | MHz | | 50 | 66 | — | dB |
| 750,0 ... 800,0 | MHz | | 46 | 69 | — | dB |
| 800,0 ... 880,0 | MHz | | 45 | 54 | — | dB |
| 880,0 ... 905,0 | MHz | | 31 | 60 | — | dB |
| 905,0 ... 915,0 | MHz | | 17 | 24 | — | dB |
| 980,0 ... 982,0 | MHz | | 22 | 25 | — | dB |
| 982,0 ...1005,0 | MHz | | 23 | 27 | — | dB |
| 1005,0 ...1025,0 | MHz | | 30 | 52 | — | dB |
| 1025,0 ...1035,0 | MHz | | 35 | 54 | — | dB |
| 1035,0 ...1760,0 | MHz | | 40 | 55 | — | dB |
| 1760,0 ... 3120,0 | MHz | | 34 | 38 | — | dB |
| 3120,0 ... 4000,0 | MHz | | 18 | 26 | — | dB |
| 4000,0 ... 6000,0 | MHz | | 8 | 18 | — | dB |

## Characteristics

Operating temperature range: $T$ = -30˚C to +80˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω

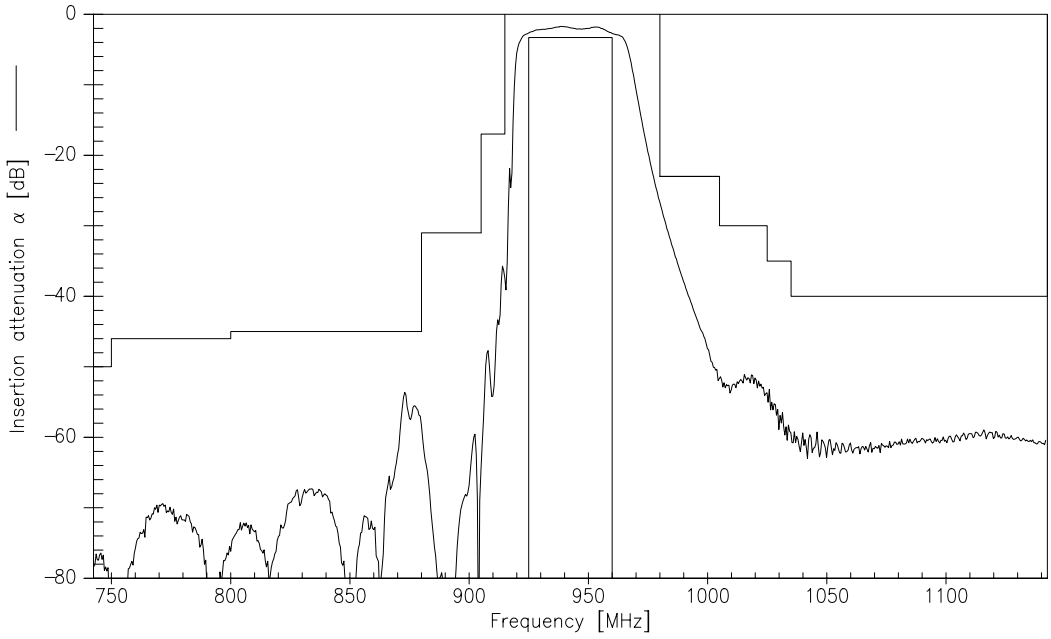
| | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 3,0 | 4,0 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 1,2 | 2,3 | dB |
| **Input VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,3 | |
| **Output VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,2 | |
| **Input return loss** | | | | | | |
| 925,0 ... 960,0 | MHz | | 8,0 | 9,0 | — | dB |
| **Input return loss phase** | | | | | | |
| 1842,5 | MHz | | -150,0 | -140,0 | -130,0 | ° |
| **Attenuation** | $\alpha$ | | | | | |
| 0,0 ... 750,0 | MHz | | 50 | 66 | — | dB |
| 750,0 ... 800,0 | MHz | | 46 | 69 | — | dB |
| 800,0 ... 880,0 | MHz | | 45 | 54 | — | dB |
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| 905,0 ... 915,0 | MHz | | 15 | 23 | — | dB |
| 980,0 ... 982,0 | MHz | | 21 | 24 | — | dB |
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| 1035,0 ...1760,0 | MHz | | 40 | 55 | — | dB |
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## Characteristics

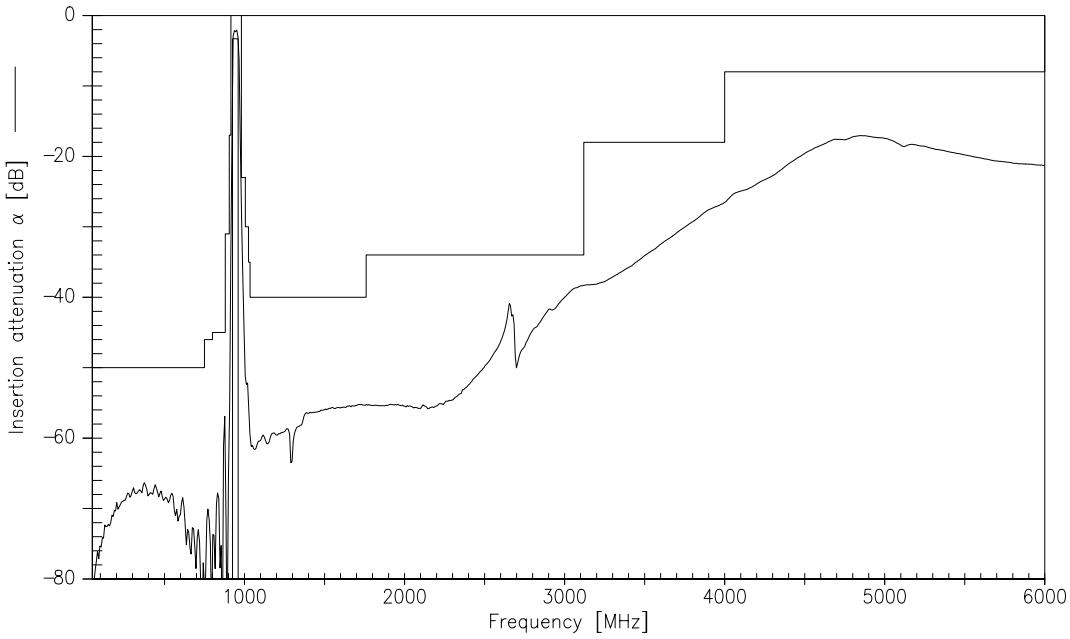
Operating temperature range: $T$ = -30˚C to +85˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 50 Ω

| | | | min. | typ. | max. | |
|---|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | | — | 942,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 3,0 | 4,0 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | | |
| 925,0 ... 960,0 | MHz | | — | 1,2 | 2,3 | dB |
| **Input VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,3 | |
| **Output VSWR** | | | | | | |
| 925,0 ... 960,0 | MHz | | — | 2,0 | 2,2 | |
| **Input return loss** | | | | | | |
| 925,0 ... 960,0 | MHz | | 8,0 | 9,0 | — | dB |
| **Input return loss phase** | | | | | | |
| 1842,5 | MHz | | -150,0 | -140,0 | -130,0 | ° |
| **Attenuation** | $\alpha$ | | | | | |
| 0,0 ... 750,0 | MHz | | 50 | 66 | — | dB |
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| 800,0 ... 880,0 | MHz | | 45 | 54 | — | dB |
| 880,0 ... 905,0 | MHz | | 31 | 60 | — | dB |
| 905,0 ... 915,0 | MHz | | 12 | 22 | — | dB |
| 980,0 ... 982,0 | MHz | | 21 | 24 | — | dB |
| 982,0 ...1005,0 | MHz | | 23 | 27 | — | dB |
| 1005,0 ...1025,0 | MHz | | 30 | 52 | — | dB |
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**Transfer function** (+25 C specification)




**Transfer function** (wideband)



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