EPCOS

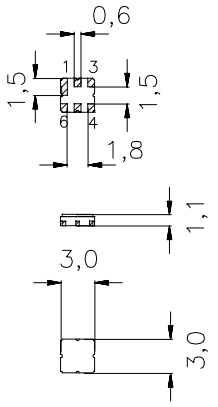
# SAW Components

*Data Sheet B4167*

Ceramic package **DCC6D**

### Features

- Low-loss RF filter for mobile telephone PCN systems, receive path
- Low amplitude ripple
- Usable passband 75 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 200Ω
- Package for **S**urface **M**ounted **T**echnology (**SMT**)
- Ceramic SMD package



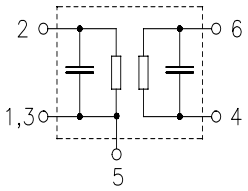

### Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,037 g

### Pin configuration

| | |
|---|---|
| 2 | Input, unbalanced |
| 4, 6 | Output, balanced |
| 1, 3 | Input ground |
| 1, 3, 5 | To be grounded |




| Type | Ordering code | Marking and Package according to | Packing according to |
|---|---|---|---|
| B4167 | B39182-B4167-U510 | C61157-A7-A68 | F61074-V8089-Z000 |

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

### Maximum ratings

| | | | | |
|---|---|---|---|---|
| Operable temperature range | $T$ | – 20 / + 75 | ˚C | |
| Storage temperature range | $T_{stg}$ | – 40 / + 85 | ˚C | |
| DC voltage | $V_{DC}$ | 5 | V | |
| Input power max. | | | | source/load impedance 50/200 Ω |
| 1710 ... 1785 MHz | $P_{IN}$ | 11 | dBm | peak power of GSM signal, duty cycle 2 : 8 |
| 1805 ... 1880 MHz | $P_{IN}$ | 11 | dBm | |
| elsewhere | $P_{IN}$ | 0 | dBm | |

## Characteristics

Operating Temperature Range: $T$ = +25 ± 2 °C
Terminating source impedance: $Z_S$ = 50Ω (unbalanced)
Terminating load impedance: $Z_L$ = 200Ω || 22 nH (balanced)

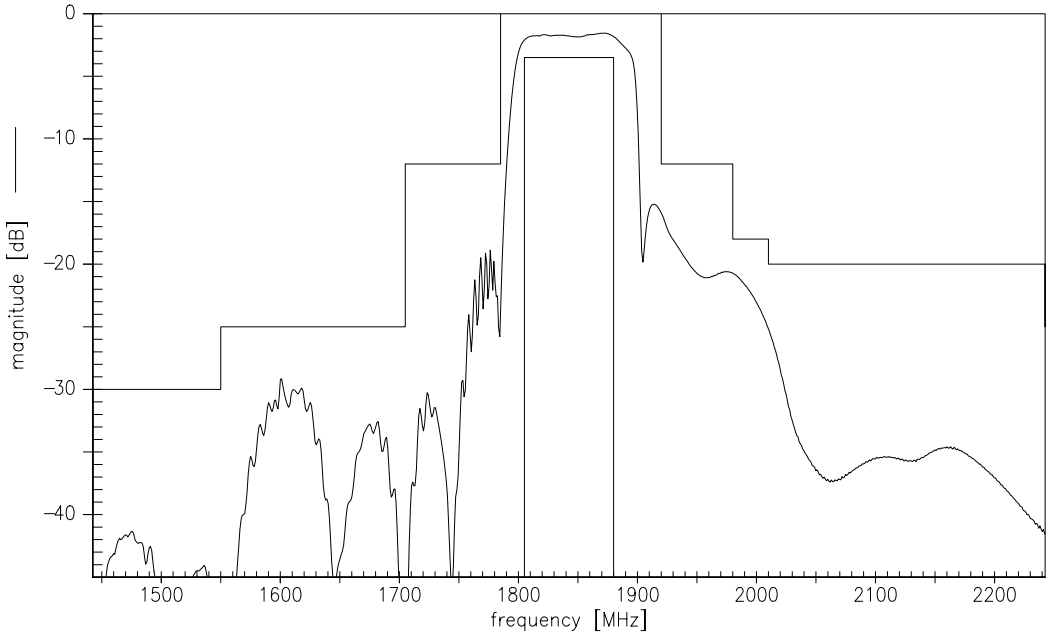
| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 1842,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1805,0 ... 1880,0 MHz | | — | 2,0 | 3,5 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1805,0 ... 1880,0 MHz | | — | 0,9 | 2,0 | dB |
| **Input VSWR** | | | | | |
| 1805,0 ...1880,0 MHz | | — | 1,8 | 2,3 | |
| **Output VSWR** | | | | | |
| 1805,0 ...1880,0 MHz | | — | 1,8 | 2,3 | |
| **Output amplitude balance** ($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 1805,0 ...1880,0 MHz | | -1,5 | -1,1 / +0,6 | 1,5 | dB |
| **Output phase balance** ($\phi(S_{31})-\phi(S_{21})+180°$) | | | | | |
| 1805,0 ...1880,0 MHz | | -12 | +/- 6 | 12 | ° |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 1000,0 MHz | | 40 | 50 | — | dB |
| 1000,0 ... 1550,0 MHz | | 30 | 40 | — | dB |
| 1550,0 ... 1705,0 MHz | | 25 | 28 | — | dB |
| 1705,0 ... 1785,0 MHz | | 12 | 18 | — | dB |
| 1920,0 ... 1980,0 MHz | | 12 | 17 | — | dB |
| 1980,0 ... 2010,0 MHz | | 18 | 22 | — | dB |
| 2010,0 ... 2500,0 MHz | | 20 | 26 | — | dB |
| 2500,0 ... 3840,0 MHz | | 25 | 35 | — | dB |
| 3840,0 ... 6000,0 MHz | | 20 | 32 | — | dB |

## Characteristics

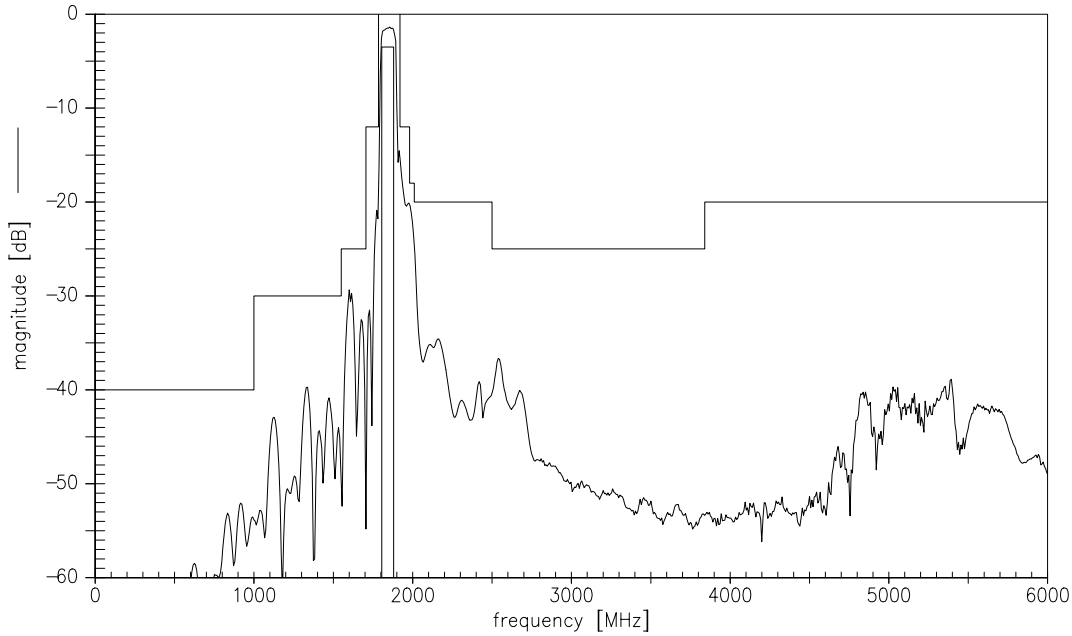
Operating Temperature Range: $T$ = -10 to +80˚C
Terminating source impedance: $Z_S$ = 50Ω (unbalanced)
Terminating load impedance: $Z_L$ = 200Ω (balanced) || 22 nH

| | | min. | typ. | max. | |
|---|---|---|---|---|---|
| **Center frequency** | $f_C$ | — | 1842,5 | — | MHz |
| **Maximum insertion attenuation** | $\alpha_{max}$ | | | | |
| 1805,0 ... 1880,0 MHz | | — | 2,5 | 4,0 | dB |
| **Amplitude ripple** (p-p) | $\Delta\alpha$ | | | | |
| 1805,0 ... 1880,0 MHz | | — | 1,4 | 2,5 | dB |
| **Input VSWR** | | | | | |
| 1805,0 ...1880,0 MHz | | — | 1,8 | 2,4 | |
| **Output VSWR** | | | | | |
| 1805,0 ...1880,0 MHz | | — | 1,8 | 2,4 | |
| **Output amplitude balance** ($\lvert S_{31}/S_{21}\rvert$) | | | | | |
| 1805,0 ...1880,0 MHz | | -1,5 | -1,1 / +0,6 | 1,5 | dB |
| **Output phase balance** ($\phi(S_{31})-\phi(S_{21})+180^\circ$) | | | | | |
| 1805,0 ...1880,0 MHz | | -15 | +/- 6 | 15 | ˚ |
| **Attenuation** | $\alpha$ | | | | |
| 0,0 ... 1000,0 MHz | | 40 | 50 | — | dB |
| 1000,0 ... 1550,0 MHz | | 30 | 40 | — | dB |
| 1550,0 ... 1705,0 MHz | | 25 | 28 | — | dB |
| 1705,0 ... 1785,0 MHz | | 10 | 15 | — | dB |
| 1920,0 ... 1980,0 MHz | | 10 | 17 | — | dB |
| 1980,0 ... 2010,0 MHz | | 18 | 22 | — | dB |
| 2010,0 ... 2500,0 MHz | | 20 | 26 | — | dB |
| 2500,0 ... 3840,0 MHz | | 25 | 35 | — | dB |
| 3840,0 ... 6000,0 MHz | | 20 | 32 | — | dB |

**Transfer function**




**Transfer function** (wide band)



**Published by EPCOS AG**
**Surface Acoustic Wave Components Division, OFW E MF**
**P.O. Box 80 17 09, D-81617 München**



As far as patents or other rights of third parties are concerned, liability is only assumed for components per se, not for applications, processes and circuits implemented within components or assemblies.

The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved.

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.