



# *SAW Components*

*Data Sheet B4115*

Data Sheet

An abstract graphic with a dark, textured background. The word "EPCOS" is rendered in large, glowing, 3D letters that appear to be floating or emerging from the background. Behind the letters, there is a faint, stylized globe showing continents. The overall effect is high-tech and futuristic.



## SAW Components

B4115

## Low-Loss Filter for Mobile Communication

942,5 MHz

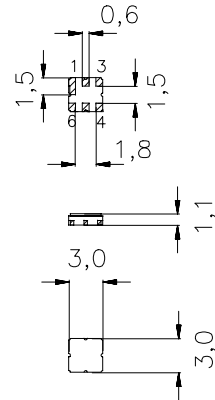
### Data Sheet



Ceramic package **DCC6D**

### Features

- Low-loss RF filter for mobile telephone EGSM systems, receive path
- Low amplitude ripple
- Usable passband 35 MHz
- Unbalanced to balanced Operation
- Ceramic package for **Surface Mounted Technology (SMT)**



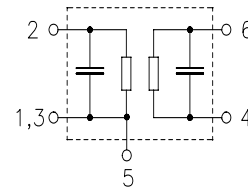
### Terminals

- Ni, gold-plated

Dimensions in mm, approx. weight 0,037 g

### Pin configuration

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



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B4115 | B39941-B4115-U510 | C61157-A7-A68                    | F61074-V8089-Z000    |

Electrostatic Sensitive Device (ESD)

### Maximum ratings

|                            |           |             |     |                                                                                                                              |
|----------------------------|-----------|-------------|-----|------------------------------------------------------------------------------------------------------------------------------|
| Operable temperature range | $T$       | - 20 / + 80 | °C  | source and load impedance 50 $\Omega$<br>peak power of GSM signal<br>duty cycle 1 : 8<br>duty cycle 2 : 8<br>continuous wave |
| Storage temperature range  | $T_{stg}$ | - 40 / + 85 | °C  |                                                                                                                              |
| DC voltage                 | $V_{DC}$  | 3           | V   |                                                                                                                              |
| Input power max.           | $P_{IN}$  |             |     |                                                                                                                              |
| 880 ... 915 MHz            |           | 5           | dBm |                                                                                                                              |
|                            |           | 3           | dBm |                                                                                                                              |
| elsewhere                  |           | 0           | dBm |                                                                                                                              |



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### Characteristics

|                               |                               |
|-------------------------------|-------------------------------|
| Operating temperature range:  | $T = 25 \pm 2^\circ \text{C}$ |
| Terminating source impedance: | $Z_S = 50 \Omega$             |
| Terminating load impedance:   | $Z_L = 50 \Omega$ (balanced)  |

|                                                                                    |                 | min. | typ.  | max. |        |
|------------------------------------------------------------------------------------|-----------------|------|-------|------|--------|
| <b>Center frequency</b>                                                            | $f_C$           | —    | 942,5 | —    | MHz    |
| <b>Maximum insertion attenuation</b>                                               | $\alpha_{\max}$ |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                |                 | —    | 2,7   | 3,7  | dB     |
| <b>Amplitude ripple (p-p)</b>                                                      | $\Delta\alpha$  |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                |                 | —    | 0,8   | 2,0  | dB     |
| <b>Input/Output VSWR</b>                                                           |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                |                 | —    | 1,8   | 2,0  |        |
| <b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^\circ</math>)</b> |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                |                 | 170  | —     | 190  | degree |
| <b>Output amplitude balance (<math> S_{31} / S_{21} </math>)</b>                   |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                |                 | -1,0 | 0     | 1,0  | dB     |
| <b>Output reflection coefficient @942,5 MHz</b>                                    |                 |      |       |      |        |
| Phase                                                                              |                 | -59  | -39   | -19  | °      |
| <b>Attenuation</b>                                                                 | $\alpha$        |      |       |      |        |
| 0,0 ... 880,0 MHz                                                                  |                 | 50   | 60    | —    | dB     |
| 880,0 ... 905,0 MHz                                                                |                 | 28   | 35    | —    | dB     |
| 905,0 ... 915,0 MHz                                                                |                 | 18   | 25    | —    | dB     |
| 980,0 ... 1050,0 MHz                                                               |                 | 22   | 24    | —    | dB     |
| 1050,0 ... 1680,0 MHz                                                              |                 | 50   | 60    | —    | dB     |
| 1680,0 ... 2000,0 MHz                                                              |                 | 45   | 55    | —    | dB     |
| 2000,0 ... 3000,0 MHz                                                              |                 | 30   | 45    | —    | dB     |
| 3000,0 ... 6000,0 MHz                                                              |                 | 15   | 25    | —    | dB     |



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942,5 MHz

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### Characteristics

|                               |                                                   |
|-------------------------------|---------------------------------------------------|
| Operating temperature range:  | $T = -20^{\circ}\text{C to } +75^{\circ}\text{C}$ |
| Terminating source impedance: | $Z_S = 50\ \Omega$                                |
| Terminating load impedance:   | $Z_L = 50\ \Omega$ (balanced)                     |

|                                                                                      |                 | min. | typ.  | max. |        |
|--------------------------------------------------------------------------------------|-----------------|------|-------|------|--------|
| <b>Center frequency</b>                                                              | $f_C$           | —    | 942,5 | —    | MHz    |
| <b>Maximum insertion attenuation</b>                                                 | $\alpha_{\max}$ | —    | 3,0   | 4,2  | dB     |
| 925,0 ... 960,0 MHz                                                                  |                 |      |       |      |        |
| <b>Amplitude ripple (p-p)</b>                                                        | $\Delta\alpha$  | —    | 1,3   | 2,5  | dB     |
| 925,0 ... 960,0 MHz                                                                  |                 |      |       |      |        |
| <b>Input/Output VSWR</b>                                                             |                 | —    | 1,8   | 2,3  |        |
| 925,0 ... 960,0 MHz                                                                  |                 |      |       |      |        |
| <b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b> |                 | 170  | —     | 190  | degree |
| 925,0 ... 960,0 MHz                                                                  |                 |      |       |      |        |
| <b>Output amplitude balance (<math> S_{31}/S_{21} </math>)</b>                       |                 | -1,0 | 0     | 1,0  | dB     |
| 925,0 ... 960,0 MHz                                                                  |                 |      |       |      |        |
| <b>Attenuation</b>                                                                   | $\alpha$        |      |       |      |        |
| 0,0 ... 880,0 MHz                                                                    |                 | 50   | 60    | —    | dB     |
| 880,0 ... 905,0 MHz                                                                  |                 | 28   | 33    | —    | dB     |
| 905,0 ... 915,0 MHz                                                                  |                 | 15   | 23    | —    | dB     |
| 980,0 ... 1050,0 MHz                                                                 |                 | 20   | 22    | —    | dB     |
| 1050,0 ... 1680,0 MHz                                                                |                 | 50   | 60    | —    | dB     |
| 1680,0 ... 2000,0 MHz                                                                |                 | 45   | 55    | —    | dB     |
| 2000,0 ... 3000,0 MHz                                                                |                 | 30   | 45    | —    | dB     |
| 3000,0 ... 6000,0 MHz                                                                |                 | 15   | 25    | —    | dB     |



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## Low-Loss Filter for Mobile Communication

942,5 MHz

### Data Sheet



### Characteristics

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Operating temperature range:  | $T = -20^{\circ}\text{C}$ to $+80^{\circ}\text{C}$ |
| Terminating source impedance: | $Z_S = 50\ \Omega$                                 |
| Terminating load impedance:   | $Z_L = 50\ \Omega$ (balanced)                      |

|                                                                                      |                 | min. | typ.  | max. |        |
|--------------------------------------------------------------------------------------|-----------------|------|-------|------|--------|
| <b>Center frequency</b>                                                              | $f_C$           | —    | 942,5 | —    | MHz    |
| <b>Maximum insertion attenuation</b>                                                 | $\alpha_{\max}$ |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                  |                 | —    | 3,0   | 4,3  | dB     |
| <b>Amplitude ripple (p-p)</b>                                                        | $\Delta\alpha$  |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                  |                 | —    | 1,3   | 2,6  | dB     |
| <b>Input/Output VSWR</b>                                                             |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                  |                 | —    | 1,8   | 2,3  |        |
| <b>Output phase balance (<math>\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}</math>)</b> |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                  |                 | 170  | —     | 190  | degree |
| <b>Output amplitude balance (<math> S_{31} / S_{21} </math>)</b>                     |                 |      |       |      |        |
| 925,0 ... 960,0 MHz                                                                  |                 | -1,0 | 0     | 1,0  | dB     |
| <b>Attenuation</b>                                                                   | $\alpha$        |      |       |      |        |
| 0,0 ... 880,0 MHz                                                                    |                 | 50   | 60    | —    | dB     |
| 880,0 ... 905,0 MHz                                                                  |                 | 28   | 33    | —    | dB     |
| 905,0 ... 915,0 MHz                                                                  |                 | 13   | 21    | —    | dB     |
| 980,0 ... 1050,0 MHz                                                                 |                 | 20   | 22    | —    | dB     |
| 1050,0 ... 1680,0 MHz                                                                |                 | 50   | 60    | —    | dB     |
| 1680,0 ... 2000,0 MHz                                                                |                 | 45   | 55    | —    | dB     |
| 2000,0 ... 3000,0 MHz                                                                |                 | 30   | 45    | —    | dB     |
| 3000,0 ... 6000,0 MHz                                                                |                 | 15   | 25    | —    | dB     |



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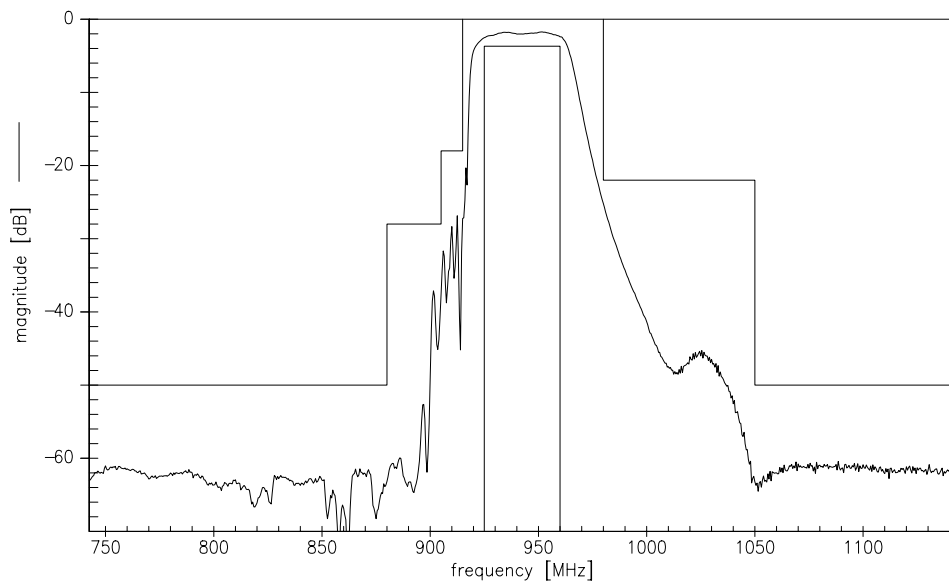
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942,5 MHz

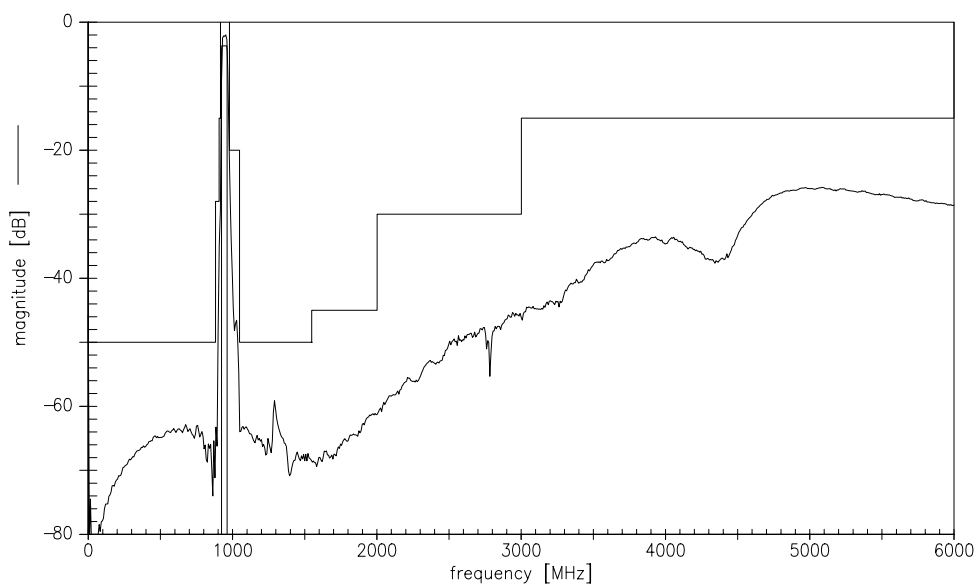
Data Sheet



Transfer function



Transfer function (wide band)





|                                                 |                  |
|-------------------------------------------------|------------------|
| <b>SAW Components</b>                           | <b>B4115</b>     |
| <b>Low-Loss Filter for Mobile Communication</b> | <b>942,5 MHz</b> |
| <b>Data Sheet</b>                               | <b>SMD</b>       |

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