

# *SAW Components*

*Data Sheet B4142*

Data Sheet

A large, stylized, 3D-effect logo for "EPCCOS". The letters are white with a metallic, reflective finish and are set against a dark, abstract background that features a faint, glowing globe and some geometric shapes.

# SAW Components

B4142

## Low-Loss Filter for Mobile Communication

1842,50 MHz

### Data Sheet



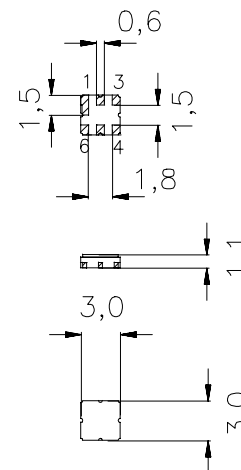
### Ceramic Package DCC6C

#### Features

- Low-loss RF filter for mobile telephone PCN system, receive path
- High selectivity
- Usable passband: 75 MHz
- No matching network required for operation at 50  $\Omega$
- Ceramic Package for Surface Mounted Technology (SMT)
- RoHS compliant

#### Terminals

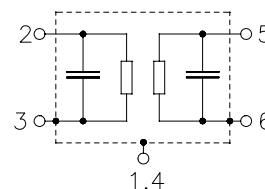
- Ni, gold-plated



Dimensions in mm, approx. weight 37mg

#### Pin configuration

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



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B4142 | B39182-B4142-U410 | C61157-A7-A67                    | F61074-V8168-Z000    |

Electrostatic Sensitive Device (ESD)

#### Maximum ratings

|                                                                  |                    |             |                    |                                                                                |
|------------------------------------------------------------------|--------------------|-------------|--------------------|--------------------------------------------------------------------------------|
| Operable temperature range                                       | $T$                | - 40 / + 85 | $^{\circ}\text{C}$ | Machine Model, 10 pulses<br>effective power in the on-state,<br>duty cycle 4:8 |
| Storage temperature range                                        | $T_{\text{stg}}$   | - 40 / + 85 | $^{\circ}\text{C}$ |                                                                                |
| DC voltage                                                       | $V_{\text{DC}}$    | 0           | V                  |                                                                                |
| ESD voltage                                                      | $V_{\text{ESD}}^*$ | 50*         | V                  |                                                                                |
| Input Power at<br>GSM850, GSM900<br>GSM1800, GSM1900<br>Tx bands | $P_{\text{IN}}$    | 15          | dBm                |                                                                                |

\*-acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses

**SAW Components**
**B4142**
**Low-Loss Filter for Mobile Communication**
**1842,50 MHz**
**Data Sheet**

**Characteristics**

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

|                                      |                 |  | min. | typ.   | max. |     |
|--------------------------------------|-----------------|--|------|--------|------|-----|
| <b>Center frequency</b>              | $f_c$           |  | —    | 1842,5 | —    | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$ |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 3,0    | 3,3  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 2,6    | 3,0  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 2,6    | 3,0  | dB  |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$  |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 1,2    | 1,5  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 0,8    | 1,2  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 0,8    | 1,2  | dB  |
| <b>Input VSWR</b>                    |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Output VSWR</b>                   |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Attenuation</b>                   | $\alpha$        |  |      |        |      |     |
| 10,0 ...1720,0                       | MHz             |  | 20,0 | 21,0   | —    | dB  |
| 1720,0 ...1765,0                     | MHz             |  | 25,0 | 30,0   | —    | dB  |
| 1765,0 ...1785,0                     | MHz             |  | 9,0  | 14,0   | —    | dB  |
| 1920,0 ...1930,0                     | MHz             |  | 15,0 | 26,0   | —    | dB  |
| 1930,0 ...3120,0                     | MHz             |  | 20,0 | 25,0   | —    | dB  |
| 3120,0 ...4000,0                     | MHz             |  | 17,0 | 30,0   | —    | dB  |

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**B4142**
**Low-Loss Filter for Mobile Communication**
**1842,50 MHz**
**Data Sheet**

**Characteristics**

Operating temperature range:  $T = -35$  to  $-25^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

|                                      |                 |  | min. | typ.   | max. |     |
|--------------------------------------|-----------------|--|------|--------|------|-----|
| <b>Center frequency</b>              | $f_c$           |  | —    | 1842,5 | —    | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$ |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 3,1    | 3,9  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 2,8    | 3,0  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 2,6    | 3,0  | dB  |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$  |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 1,3    | 2,1  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 1,0    | 1,2  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 0,8    | 1,2  | dB  |
| <b>Input VSWR</b>                    |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Output VSWR</b>                   |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Attenuation</b>                   | $\alpha$        |  |      |        |      |     |
| 10,0 ...1720,0                       | MHz             |  | 20,0 | 21,0   | —    | dB  |
| 1720,0 ...1765,0                     | MHz             |  | 25,0 | 30,0   | —    | dB  |
| 1765,0 ...1785,0                     | MHz             |  | 9,0  | 14,0   | —    | dB  |
| 1920,0 ...1930,0                     | MHz             |  | 15,0 | 26,0   | —    | dB  |
| 1930,0 ...3120,0                     | MHz             |  | 20,0 | 25,0   | —    | dB  |
| 3120,0 ...4000,0                     | MHz             |  | 17,0 | 30,0   | —    | dB  |

**SAW Components**
**B4142**
**Low-Loss Filter for Mobile Communication**
**1842,50 MHz**
**Data Sheet**

**Characteristics**

Operating temperature range:  $T = -25$  to  $+15^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

|                                      |                 |  | min. | typ.   | max. |     |
|--------------------------------------|-----------------|--|------|--------|------|-----|
| <b>Center frequency</b>              | $f_c$           |  | —    | 1842,5 | —    | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$ |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 3,1    | 3,8  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 2,8    | 3,0  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 2,6    | 3,0  | dB  |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$  |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 1,3    | 2,0  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 1,0    | 1,2  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 0,8    | 1,2  | dB  |
| <b>Input VSWR</b>                    |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Output VSWR</b>                   |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Attenuation</b>                   | $\alpha$        |  |      |        |      |     |
| 10,0 ...1720,0                       | MHz             |  | 20,0 | 21,0   | —    | dB  |
| 1720,0 ...1765,0                     | MHz             |  | 25,0 | 30,0   | —    | dB  |
| 1765,0 ...1785,0                     | MHz             |  | 9,0  | 14,0   | —    | dB  |
| 1920,0 ...1930,0                     | MHz             |  | 15,0 | 26,0   | —    | dB  |
| 1930,0 ...3120,0                     | MHz             |  | 20,0 | 25,0   | —    | dB  |
| 3120,0 ...4000,0                     | MHz             |  | 17,0 | 30,0   | —    | dB  |

**SAW Components**
**B4142**
**Low-Loss Filter for Mobile Communication**
**1842,50 MHz**
**Data Sheet**

**Characteristics**

Operating temperature range:  $T = +15$  to  $+75^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

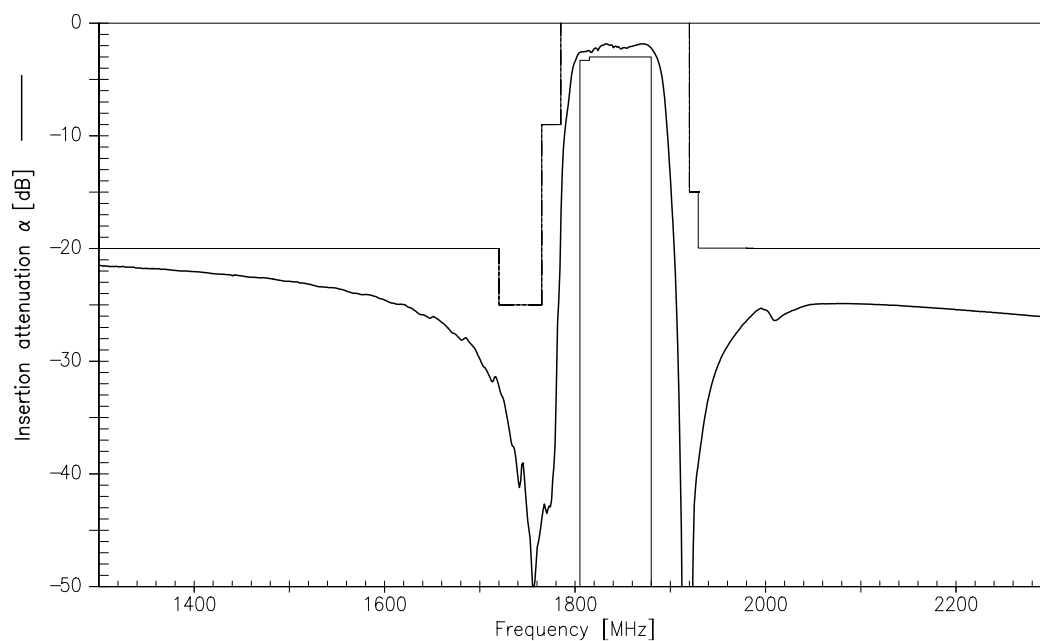
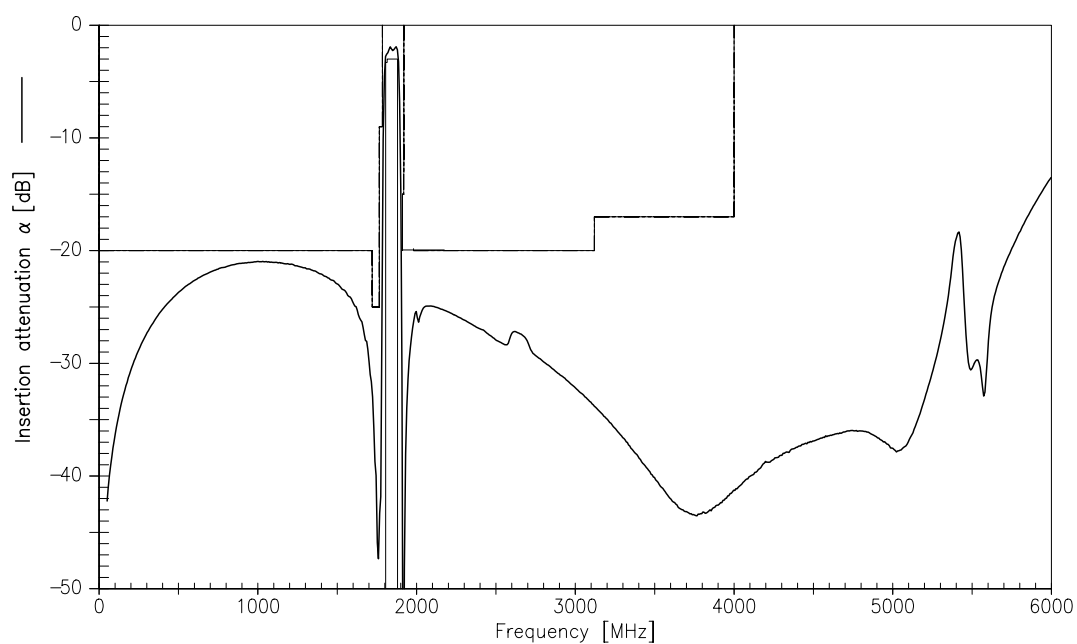
|                                      |                 |  | min. | typ.   | max. |     |
|--------------------------------------|-----------------|--|------|--------|------|-----|
| <b>Center frequency</b>              | $f_c$           |  | —    | 1842,5 | —    | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$ |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 3,0    | 3,3  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 2,8    | 3,0  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 2,9    | 3,6  | dB  |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$  |  |      |        |      |     |
| 1805,0 ...1815,0                     | MHz             |  | —    | 1,2    | 1,5  | dB  |
| 1815,0 ...1870,0                     | MHz             |  | —    | 1,0    | 1,2  | dB  |
| 1870,0 ...1880,0                     | MHz             |  | —    | 1,1    | 1,8  | dB  |
| <b>Input VSWR</b>                    |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Output VSWR</b>                   |                 |  |      |        |      |     |
| 1805,0 ...1880,0                     | MHz             |  | —    | 2,3    | 3,0  |     |
| <b>Attenuation</b>                   | $\alpha$        |  |      |        |      |     |
| 10,0 ...1720,0                       | MHz             |  | 20,0 | 21,0   | —    | dB  |
| 1720,0 ...1765,0                     | MHz             |  | 25,0 | 30,0   | —    | dB  |
| 1765,0 ...1785,0                     | MHz             |  | 7,5  | 9,0    | —    | dB  |
| 1920,0 ...1930,0                     | MHz             |  | 15,0 | 26,0   | —    | dB  |
| 1930,0 ...3120,0                     | MHz             |  | 20,0 | 25,0   | —    | dB  |
| 3120,0 ...4000,0                     | MHz             |  | 17,0 | 30,0   | —    | dB  |

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**B4142**
**Low-Loss Filter for Mobile Communication**
**1842,50 MHz**
**Data Sheet**

**Characteristics**

Operating temperature range:  $T = +75$  to  $+85^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$

|                                      |                      |  | min. | typ.   | max. |     |
|--------------------------------------|----------------------|--|------|--------|------|-----|
| <b>Center frequency</b>              | $f_c$                |  | —    | 1842,5 | —    | MHz |
| <b>Maximum insertion attenuation</b> | $\alpha_{\max}$      |  |      |        |      |     |
|                                      | 1805,0 ...1815,0 MHz |  | —    | 3,0    | 3,3  | dB  |
|                                      | 1815,0 ...1870,0 MHz |  | —    | 2,8    | 3,0  | dB  |
|                                      | 1870,0 ...1880,0 MHz |  | —    | 2,9    | 3,6  | dB  |
| <b>Amplitude ripple (p-p)</b>        | $\Delta\alpha$       |  |      |        |      |     |
|                                      | 1805,0 ...1815,0 MHz |  | —    | 1,2    | 1,5  | dB  |
|                                      | 1815,0 ...1870,0 MHz |  | —    | 1,0    | 1,2  | dB  |
|                                      | 1870,0 ...1880,0 MHz |  | —    | 1,1    | 1,8  | dB  |
| <b>Input VSWR</b>                    |                      |  |      |        |      |     |
|                                      | 1805,0 ...1880,0 MHz |  | —    | 2,3    | 3,0  |     |
| <b>Output VSWR</b>                   |                      |  |      |        |      |     |
|                                      | 1805,0 ...1880,0 MHz |  | —    | 2,3    | 3,0  |     |
| <b>Attenuation</b>                   | $\alpha$             |  |      |        |      |     |
|                                      | 10,0 ...1720,0 MHz   |  | 20,0 | 21,0   | —    | dB  |
|                                      | 1720,0 ...1765,0 MHz |  | 25,0 | 30,0   | —    | dB  |
|                                      | 1765,0 ...1785,0 MHz |  | 7,0  | 9,0    | —    | dB  |
|                                      | 1920,0 ...1930,0 MHz |  | 15,0 | 26,0   | —    | dB  |
|                                      | 1930,0 ...3120,0 MHz |  | 20,0 | 25,0   | —    | dB  |
|                                      | 3120,0 ...4000,0 MHz |  | 17,0 | 30,0   | —    | dB  |


**Transfer function (wideband)**




**Published by EPCOS AG****Surface Acoustic Wave Components Division, SAW MC PD****P.O. Box 80 17 09, 81617 Munich, GERMANY**

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