# mail

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



### Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832 Email & Skype: info@chipsmall.com Web: www.chipsmall.com Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China





## **RF Filters for Cellular Phones**

### Series/Type: B4167

The following products presented in this data sheet are being withdrawn.

| Ordering Code   | Substitute Product | Date of Withdrawal | Deadline Last<br>Orders | Last Shipments |
|-----------------|--------------------|--------------------|-------------------------|----------------|
| B39182B4167U510 | B39182B4142U410    | 2009-04-03         | 2009-07-15              | 2009-10-15     |

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

### **☆TDK**

| SAW Components                                                                                                                                                                                                                                                                                                                              | B4167                 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Low-Loss Filter for Mobile Communication                                                                                                                                                                                                                                                                                                    | 1842,5 MHz            |
| Data Sheet                                                                                                                                                                                                                                                                                                                                  |                       |
| Features                                                                                                                                                                                                                                                                                                                                    | Ceramic package DCC6D |
| <ul> <li>Low-loss RF filter for mobile telephone<br/>PCN systems, receive path</li> <li>Low amplitude ripple</li> <li>Usable passband 75 MHz</li> <li>Unbalanced to balanced operation</li> <li>Impedance transformation from 50Ω to 200Ω</li> <li>Package for Surface Mounted Technology<br/>(SMT)</li> <li>Ceramic SMD package</li> </ul> |                       |
| <ul><li>Terminals</li><li>Ni, gold-plated</li></ul>                                                                                                                                                                                                                                                                                         |                       |

#### 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    |
|         |                   |



| Туре  | Ordering code     | Marking and Package according to | Packing<br>according to |
|-------|-------------------|----------------------------------|-------------------------|
| B4167 | B39182-B4167-U510 | C61157-A7-A68                    | F61074-V8089-Z000       |

Electrostatic Sensitive Device (ESD)

#### **Maximum ratings**

| Operable temperature range        | Т                | - 20 / + 75 | °C  |                                                                                  |
|-----------------------------------|------------------|-------------|-----|----------------------------------------------------------------------------------|
| Storage temperature range         | T <sub>stq</sub> | - 40 / + 85 | °C  |                                                                                  |
| DC voltage                        | V <sub>DC</sub>  | 5           | V   |                                                                                  |
| Input power max.<br>1710 1785 MHz | P <sub>IN</sub>  | 11          | dBm | source/load impedance 50/200 $\Omega$ peak power of GSM signal, duty cycle 2 : 8 |
| 1805 1880 MHz                     | $P_{\rm IN}$     | 11          | dBm |                                                                                  |
| elsewhere                         | P <sub>IN</sub>  | 0           | dBm |                                                                                  |

### **⇔TDK**

| SAW Components B4167                                                                                                     |               |                |                                       |                    |       |          |
|--------------------------------------------------------------------------------------------------------------------------|---------------|----------------|---------------------------------------|--------------------|-------|----------|
| Low-Loss Filter for Mobile Communication 1842,5                                                                          |               |                |                                       |                    | 5 MHz |          |
| Data Sheet                                                                                                               |               |                |                                       |                    |       |          |
| Characteristics                                                                                                          |               |                |                                       |                    |       |          |
| Operating Temperature Range: $T =$ Terminating source impedance: $Z_{\rm S} =$ Terminating load impedance: $Z_{\rm L} =$ |               |                | ± 2 °C<br>2 (unbalanc<br>2    22 nH ( | ced)<br>(balanced) |       |          |
|                                                                                                                          |               |                | min.                                  | typ.               | max.  |          |
| Center frequency                                                                                                         |               | f <sub>C</sub> | —                                     | 1842,5             | _     | MHz      |
| Maximum insertion attenuation<br>1805,0 1880,0                                                                           | 0 MHz         | $\alpha_{max}$ | _                                     | 2,0                | 3,5   | dB       |
| <b>Amplitude ripple</b> (p-p)<br>1805,0 1880,0                                                                           | 0 MHz         | Δα             | _                                     | 0,9                | 2,0   | dB       |
| Input VSWR<br>1805,01880,0                                                                                               | ) MHz         |                | _                                     | 1,8                | 2,3   |          |
| Output VSWR<br>1805,01880,0                                                                                              | ) MHz         |                | _                                     | 1,8                | 2,3   |          |
| Output amplitude balance ( S <sub>31</sub> /S <sub>21</sub>  )<br>1805,0 1880,0                                          | ) MHz         |                | -1,5                                  | -1,1 / +0,6        | 1,5   | dB       |
| Output phase balance $(\phi(S_{31})-\phi(S_{21})+1)$<br>1805,0 1880,0                                                    | 80°)<br>) MHz |                | -12                                   | +/- 6              | 12    | o        |
| Attenuation                                                                                                              |               | α              |                                       |                    |       |          |
| 0,0 1000,0<br>1000 0 1550 (                                                                                              |               |                | 40                                    | 50                 | _     | an<br>an |
| 1000,0 1550,0                                                                                                            |               |                | 25                                    | 40<br>28           | _     | dB       |
| 1705,0 1785 (                                                                                                            |               |                | 12                                    | 20<br>18           | _     | dB       |
| 1920 0 1980 (                                                                                                            | 0 MH7         |                | 12                                    | 17                 |       | dB       |
| 1980.0 2010.0                                                                                                            | 0 MHz         |                | 18                                    | 22                 | _     | dB       |
| 2010.0 2500.0                                                                                                            | 0 MHz         |                | 20                                    | 26                 |       | dB       |
| 2500.0 3840.0                                                                                                            | 0 MHz         |                | 25                                    | 35                 |       | dB       |
| 3840,0 6000,0                                                                                                            | 0 MHz         |                | 20                                    | 32                 |       | dB       |

### 公TDK

| SAW Components B4167                                                                         |                                       |                                         |                                        |                     |      | B4167  |
|----------------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------------|----------------------------------------|---------------------|------|--------|
| Low-Loss Filter for Mobile Communication 18                                                  |                                       |                                         |                                        |                     | 1842 | ,5 MHz |
| Data Sheet                                                                                   | <u>s</u> r                            |                                         |                                        |                     |      |        |
| Characteristics                                                                              |                                       |                                         |                                        |                     |      |        |
| Operating Temperature Range:<br>Terminating source impedance:<br>Terminating load impedance: | T<br>Z <sub>S</sub><br>Z <sub>L</sub> | = -101<br>$= 50\Omega$<br>$= 200\Omega$ | to +80°C<br>2 (unbalanc<br>2 (balanced | ced)<br>1)    22 nH |      |        |
|                                                                                              |                                       |                                         | min.                                   | typ.                | max. |        |
| Center frequency                                                                             |                                       | f <sub>C</sub>                          |                                        | 1842,5              | _    | MHz    |
| Maximum insertion attenuation<br>1805,0 1880,0                                               | MHz                                   | $lpha_{max}$                            | _                                      | 2,5                 | 4,0  | dB     |
| <b>Amplitude ripple</b> (p-p)<br>1805,0 1880,0                                               | MHz                                   | Δα                                      | _                                      | 1,4                 | 2,5  | dB     |
| Input VSWR<br>1805,01880,0                                                                   | MHz                                   |                                         | _                                      | 1,8                 | 2,4  |        |
| Output VSWR<br>1805,01880,0                                                                  | MHz                                   |                                         | _                                      | 1,8                 | 2,4  |        |
| Output amplitude balance $( S_{31}/S_{21} )$                                                 |                                       |                                         |                                        |                     |      |        |
| 1805,01880,0                                                                                 | MHz                                   |                                         | -1,5                                   | -1,1 / +0,6         | 1,5  | dB     |
| <b>Output phase balance</b> (φ(S <sub>31</sub> )-φ(S <sub>21</sub> )+180<br>1805,01880,0     | )°)<br>MHz                            |                                         | -15                                    | +/- 6               | 15   | o      |
| Attenuation                                                                                  |                                       | α                                       |                                        |                     |      |        |
| 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                                     | 1/                  | _    | I d B  |
|                                                                                              | MHZ                                   |                                         |                                        | 22                  |      | aB     |
| 2010,0 2500,0                                                                                | iviHZ<br>M⊔⇒                          |                                         | 20                                     | 20<br>35            | _    | dB     |
| 3840.0 6000.0                                                                                | MHz                                   |                                         | 20                                     | 32                  |      | dB     |

### **☆TDK**

| SAW Components        |            | B4167 |
|-----------------------|------------|-------|
| Low-Loss Filter for M | 1842,5 MHz |       |
| Data Sheet            | SMD        |       |

#### **Transfer function**



#### Transfer function (wide band)



5

Dec 06, 2000

### **公TDK**

| SAW Components         |            | B4167 |
|------------------------|------------|-------|
| Low-Loss Filter for Me | 1842,5 MHz |       |
| Data Sheet             | SMD        |       |

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

© EPCOS AG 1999. All Rights Reserved.

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.



Dec 06, 2000