



# SAW Components

Data Sheet B 8101

Data Sheet



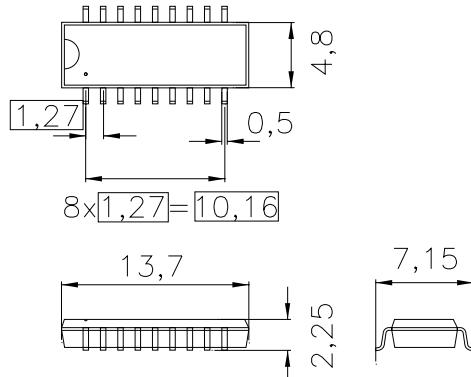
EPCOS

**Features**

- IF filter for cordless application
- Channel selection in DECT system
- Low group delay ripple
- **Surface Mounted Technology (SMT)**
- Standard IC small outline (SO) package
- Balanced and unbalanced operation possible

**Terminals**

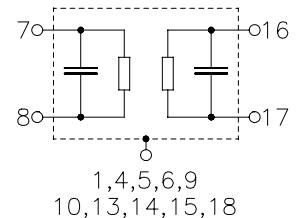
- Tinned CuFe alloy



Dimensions in mm, approx. weight 0.4 g

**Pin configuration**

|              |                                  |
|--------------|----------------------------------|
| 7            | Input                            |
| 8            | Input ground or balanced input   |
| 17           | Output                           |
| 16           | Output ground or balanced output |
| 1,4,5,6,9,10 | Chip-carrier ground              |
| 13,14,15,18  |                                  |
| 2,3,11,12    | not connected                    |



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B8101 | B39112-B8101-L100 | C61157-A2-A4                     | F61074-V8058-Z000    |

**Electrostatic Sensitive Device (ESD)**
**Maximum ratings**

|                            |           |         |     |  |
|----------------------------|-----------|---------|-----|--|
| Operable temperature range | $T$       | -25/+65 | °C  |  |
| Storage temperature range  | $T_{stg}$ | -40/+85 | °C  |  |
| DC voltage                 | $V_{DC}$  | 5       | V   |  |
| Source power               | $P_s$     | 10      | dBm |  |

**SAW Components**
**B 8101**
**Bandpass Filter**
**112,32 MHz**
**Data Sheet**
**Characteristics**

Operating temperature range:

 $T = +25^\circ\text{C}$ 

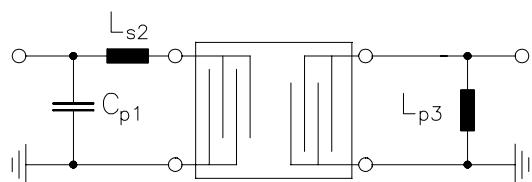
Terminating source impedance:

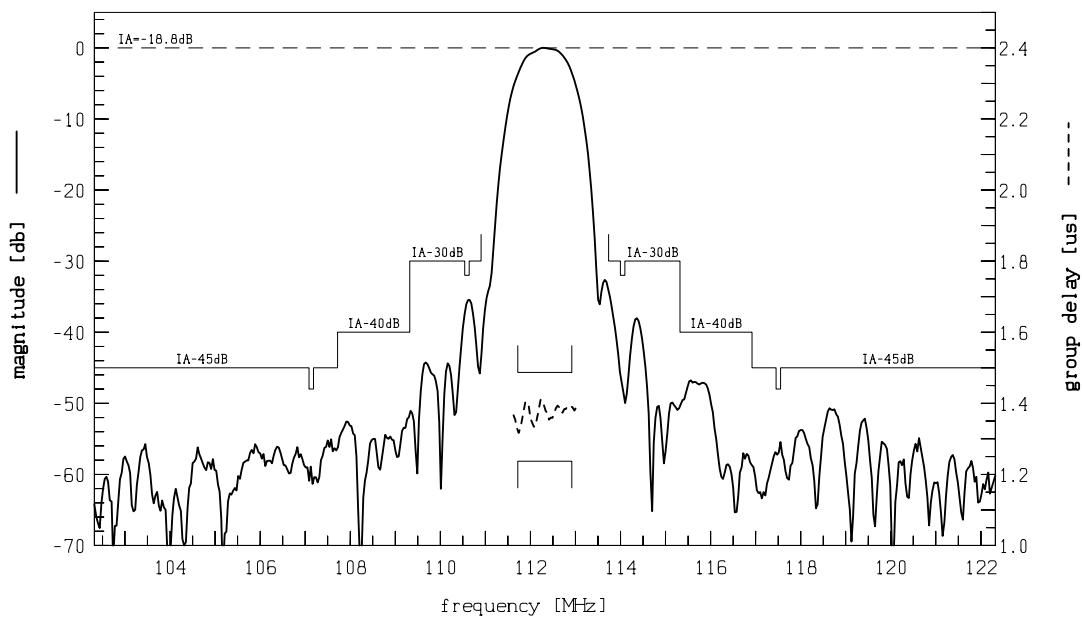
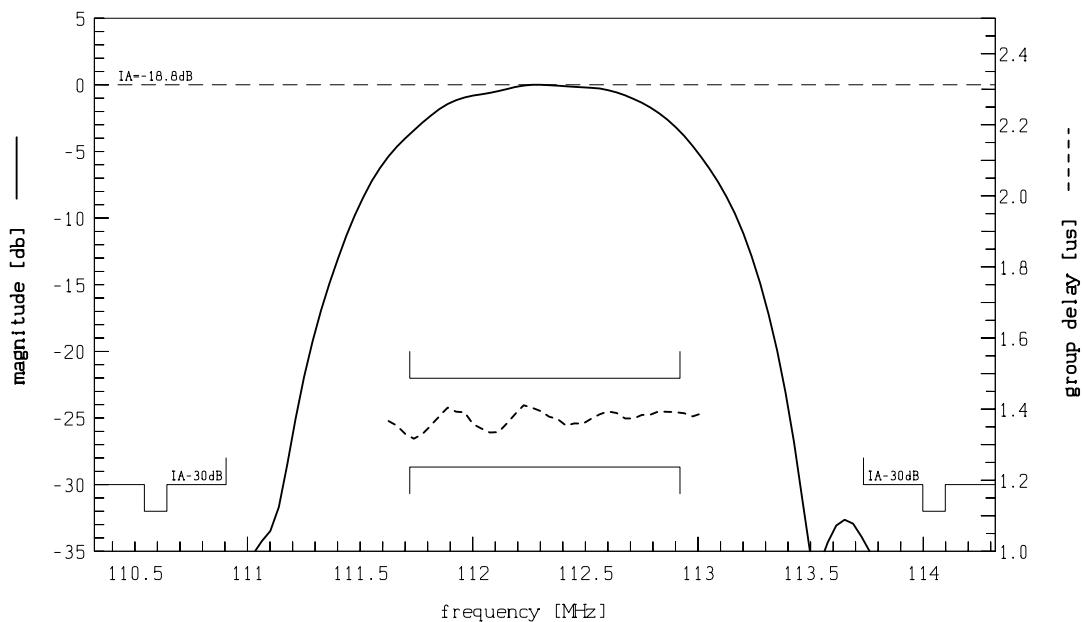
 $Z_S = 50\Omega (300\Omega \parallel 130\text{ nH}^*)$ 

Terminating load impedance:

 $Z_L = 50\Omega (80\Omega \parallel 68\text{ nH}^*)$ 

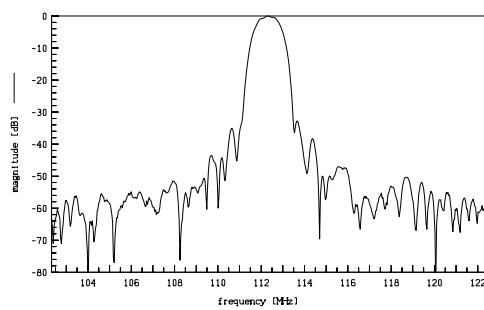
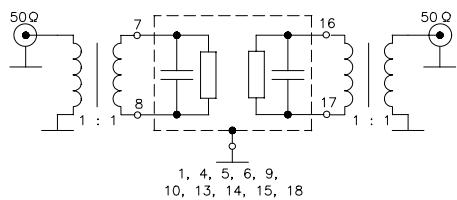
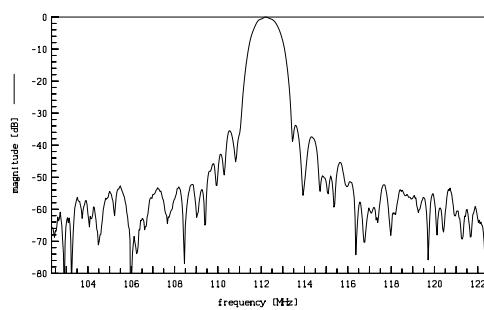
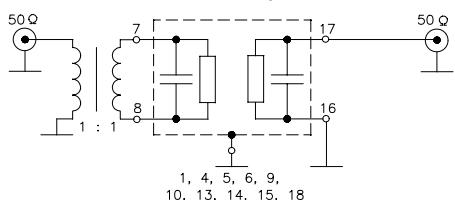
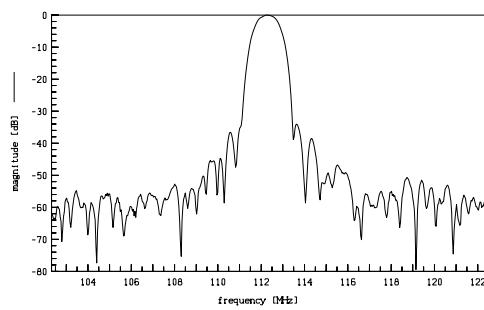
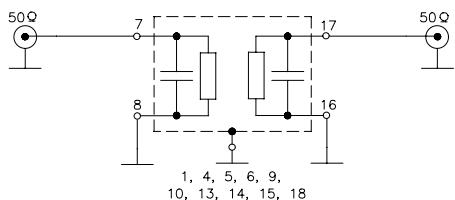
|  |                       | <b>min.</b> | <b>typ.</b>          | <b>max.</b>     |                              |
|--|-----------------------|-------------|----------------------|-----------------|------------------------------|
| <b>Nominal frequency</b>   | $f_N$                 | —           | 112,32               | —               | MHz                          |
| <b>Insertion attenuation at <math>f_N</math></b><br>(including losses in matching network) | $\alpha_N$            | —           | 18,8<br>(13,0*)      | 20,3<br>(14,5*) | dB                           |
| <b>Passband width</b>  | $B_{3\text{dB}}$      | —           | 1,1                  | —               | MHz                          |
|  | $B_{30\text{dB}}$     | —           | 2,3                  | —               | MHz                          |
| <b>Group delay ripple (p-p)</b>  | $\Delta\tau$          |             |                      |                 |                              |
| $f_N - 600\text{ kHz}$ ... $f_N + 600\text{ kHz}$  |                       | —           | 100<br>(250*)        | 250<br>(350*)   | ns                           |
| <b>Relative attenuation (relative to <math>\alpha_N</math>)</b>                            | $\alpha_{\text{rel}}$ |             |                      |                 |                              |
| $f_N \pm 1,415\text{ MHz}$ ... $f_N \pm 3,0\text{ MHz}$                                    |                       | 30          | 38                   | —               | dB                           |
| $f_N \pm 3,0\text{ MHz}$ ... $f_N \pm 4,6\text{ MHz}$                                      |                       | 40          | 47                   | —               | dB                           |
| $f_N \pm 4,6\text{ MHz}$ ... $f_N \pm 20,0\text{ MHz}$                                     |                       | 45          | 52                   | —               | dB                           |
| $f_N \pm 1,728\text{ MHz}$   |                       | 32          | 38                   | —               | dB                           |
| $f_N \pm 2 \times 1,728\text{ MHz}$  |                       | 40          | 47                   | —               | dB                           |
| $f_N \pm 3 \times 1,728\text{ MHz}$  |                       | 48          | 53                   | —               | dB                           |
| <b>Impedance at <math>f_N</math></b>   |                       |             |                      |                 |                              |
| Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$                             |                       | —           | 400 $\parallel$ 14,0 | —               | $\Omega \parallel \text{pF}$ |
| Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$                         |                       | —           | 90 $\parallel$ 28,0  | —               | $\Omega \parallel \text{pF}$ |
| <b>Temperature coefficient of frequency</b>  | $TC_f$                | —           | -18                  | —               | ppm/K                        |

 \*) with matching network to  $50\Omega$  (element values depend on PCB layout):

 $C_{\text{p1}} = 27\text{ pF}$   
 $L_{\text{s2}} = 150\text{ nH}$   
 $L_{\text{p3}} = 68\text{ nH}$

**Data Sheet**
**Transfer function:**

**Transfer function (pass band):**


**Recommended Pin Configurations:**

For optimum performance use the following pin configurations.

**Balanced-balanced operation:**

**Balanced-unbalanced operation:**

**Unbalanced-unbalanced operation**




**SAW Components**

**B 8101**

**Bandpass Filter**

**112,32 MHz**

**Data Sheet**

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