



# SAW Components

Data Sheet B 8101





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B 8101

## Bandpass Filter

112,32 MHz

### Data Sheet

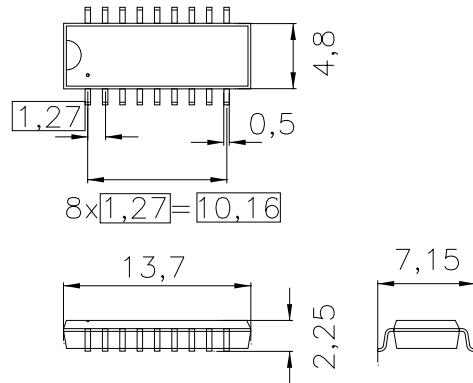
duroplast package **DIP18D**

#### 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

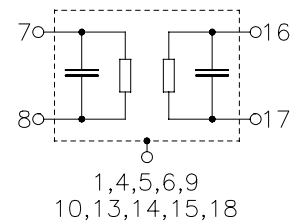
- Tinned CuFe alloy



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	



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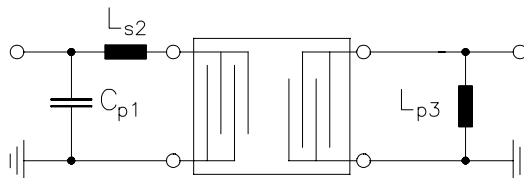
#### Data Sheet

#### Characteristics

Operating temperature range:	$T = +25\text{ °C}$
Terminating source impedance:	$Z_S = 50\ \Omega\ (300\ \Omega \parallel 130\text{ nH}^*)$
Terminating load impedance:	$Z_L = 50\ \Omega\ (80\ \Omega \parallel 68\text{ nH}^*)$

		min.	typ.	max.	
<b>Nominal frequency</b>	$f_N$	—	112,32	—	MHz
<b>Insertion attenuation at <math>f_N</math></b> (including losses in matching network)	$\alpha_N$	—	18,8 (13,0*)	20,3 (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>	$\Delta\tau$				
$f_N - 600\text{ kHz} \quad \dots \quad f_N + 600\text{ kHz}$		—	100	250	ns
		—	(250*)	(350*)	ns
<b>Relative attenuation (relative to <math>\alpha_N</math>)</b>	$\alpha_{\text{rel}}$				
$f_N \pm 1,415\text{ MHz} \dots f_N \pm 3,0\text{ MHz}$		30	38	—	dB
$f_N \pm 3,0\text{ MHz} \dots f_N \pm 4,6\text{ MHz}$		40	47	—	dB
$f_N \pm 4,6\text{ MHz} \dots f_N \pm 20,0\text{ MHz}$		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):



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



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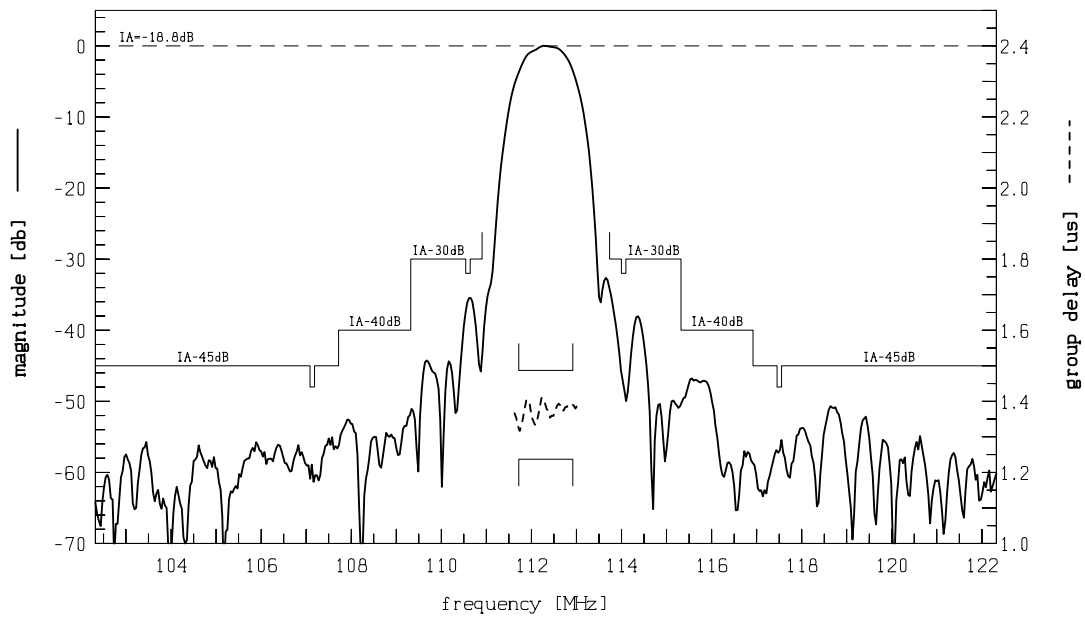
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## Bandpass Filter

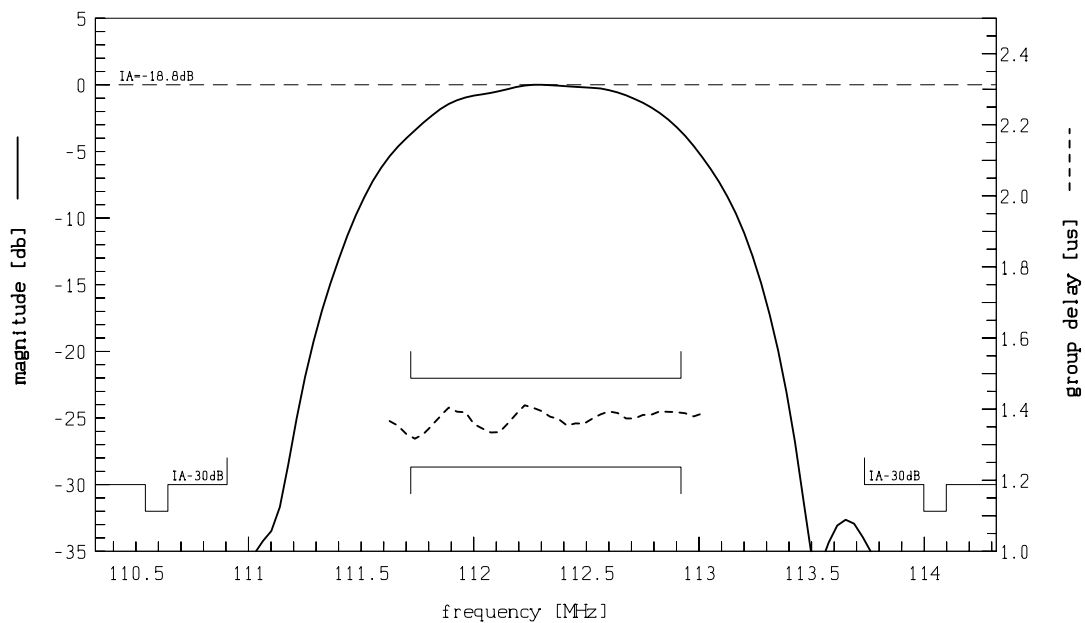
112,32 MHz

### Data Sheet

#### Transfer function:



#### Transfer function (pass band):





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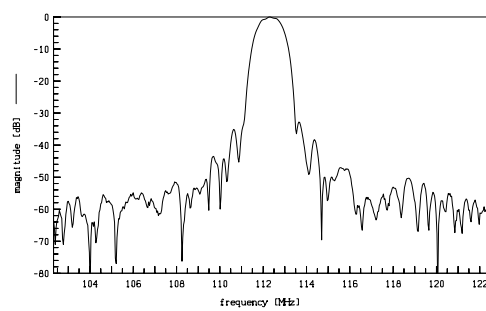
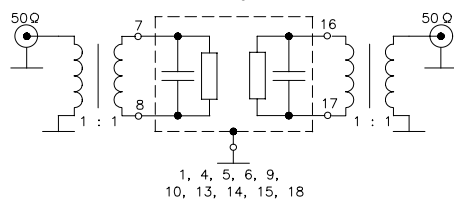
112,32 MHz

### Data Sheet

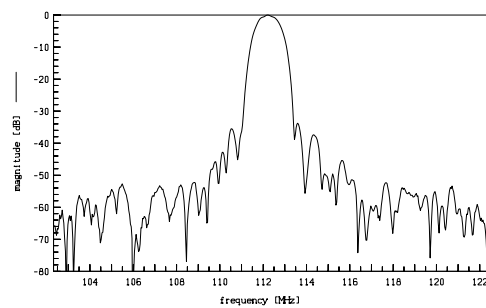
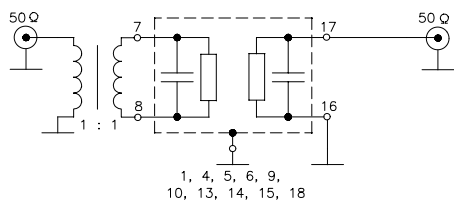
#### Recommended Pin Configurations:

For optimum performance use the following pin configurations.

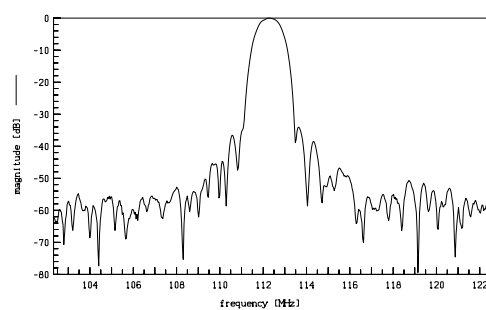
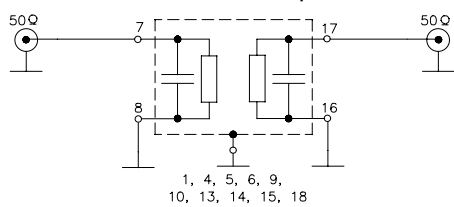
##### Balanced-balanced operation:



##### Balanced-unbalanced operation:



##### Unbalanced-unbalanced operation





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**Published by EPCOS AG**  
**Surface Acoustic Wave Components Division, SAW CE MM PD**  
**P.O. Box 80 17 09, D-81617 München**

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