



# SAW Components

Data Sheet B 8105 L

Data Sheet

A large, stylized, 3D-rendered graphic of the word "EPCOS" in a light gray, sans-serif font. The letters are slightly tilted and appear to be floating or attached to a dark, curved surface. The background is dark and features a faint, glowing globe with a grid of latitude and longitude lines.



SAW Components

B 8105 L

Bandpass Filter

112,32 MHz

Data Sheet

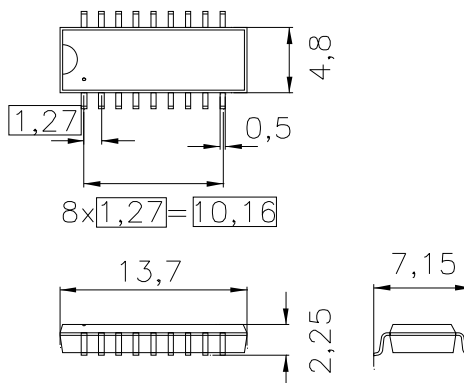
duroplast package **DIP18D**

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

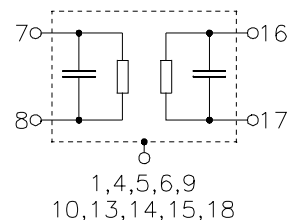
- Tinned CuFe alloy



Dimensions in mm, approx. weight 0,4 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
B8105L	B39112-B8105-L100	C61157-A2-A4	F61074-V8058-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	$T_A$	-40/+85	°C	
Storage temperature range	$T_{stg}$	-40/+85	°C	
DC voltage	$V_{DC}$	0	V	
Source power	$P_s$	10	dBm	



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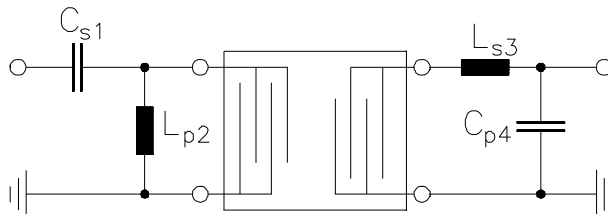
**Characteristics**

Reference temperature:  $T = +25\text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 1,0\text{ k}\Omega \parallel 280\text{ nH}$   
 Terminating load impedance:  $Z_L = 0,9\text{ k}\Omega \parallel 230\text{ nH}$

		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)	$\alpha_N$	—	14,2	15,0	dB
<b>Passband width</b>	$B_{3\text{dB}}$	—	1,25	—	MHz
	$B_{30\text{dB}}$	—	2,45	—	MHz
<b>Group delay ripple (p-p)</b>	$\Delta\tau$	—	200	300	ns
	$f_N - 800\text{ kHz} \dots f_N + 800\text{ kHz}$	—	200	300	ns
<b>Relative attenuation (relative to <math>\alpha_N</math>)</b>	$\alpha_{\text{rel}}$				
	$f_N - 475\text{ kHz} \dots f_N + 475\text{ kHz}$	—	1,5	3,0	dB
	$f_N \pm 475\text{ kHz} \dots f_N \pm 800\text{ kHz}$	—	7,0	10,0	dB
	$f_N \pm 1,175\text{ MHz} \dots f_N \pm 1,300\text{ MHz}$	18	22	—	dB
	$f_N \pm 1,300\text{ MHz} \dots f_N \pm 1,475\text{ MHz}$	25	33	—	dB
	$f_N \pm 1,475\text{ MHz} \dots f_N \pm 2,100\text{ MHz}$	38	46	—	dB
	$f_N \pm 2,100\text{ MHz} \dots f_N \pm 5,680\text{ MHz}$	42	47	—	dB
	$f_N - 5,680\text{ MHz} \dots f_N - 20,000\text{ MHz}$	42	50	—	dB
	$f_N + 5,680\text{ MHz} \dots f_N + 10,000\text{ MHz}$	40	43	—	dB
	$f_N + 10,000\text{ MHz} \dots f_N + 20,000\text{ MHz}$	42	50	—	dB
	$f_N \pm 17,28\text{ MHz}$	48	55	—	dB
<b>Impedance at <math>f_N</math></b>					
	Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$	—	2,0 $\parallel$ 4,8	—	k $\Omega$ $\parallel$ pF
	Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$	—	2,5 $\parallel$ 5,2	—	k $\Omega$ $\parallel$ pF
<b>Temperature coefficient of frequency <sup>1)</sup></b>	$TC_f$	—	- 0,03	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>	$T_0$	—	30	—	$^\circ\text{C}$

<sup>1)</sup> Temperature dependence of  $f_c$ :  $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

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



- $C_{s1} = 6,8\text{ pF}$
- $L_{p2} = 150\text{ nH}$
- $L_{s3} = 270\text{ nH}$
- $C_{p4} = 22\text{ pF}$



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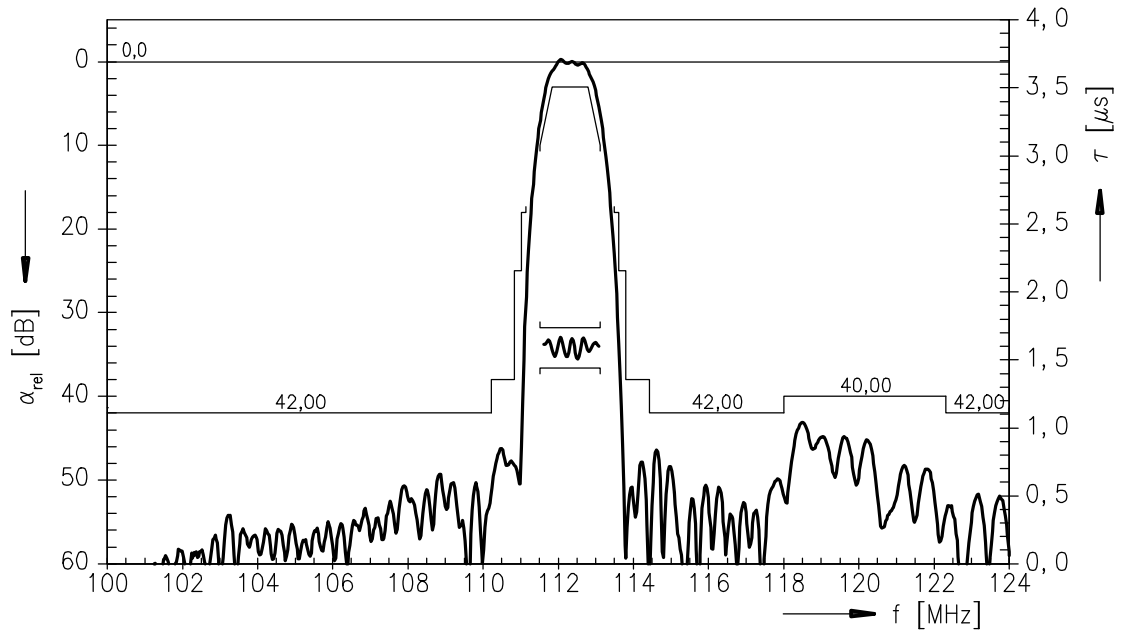
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Bandpass Filter

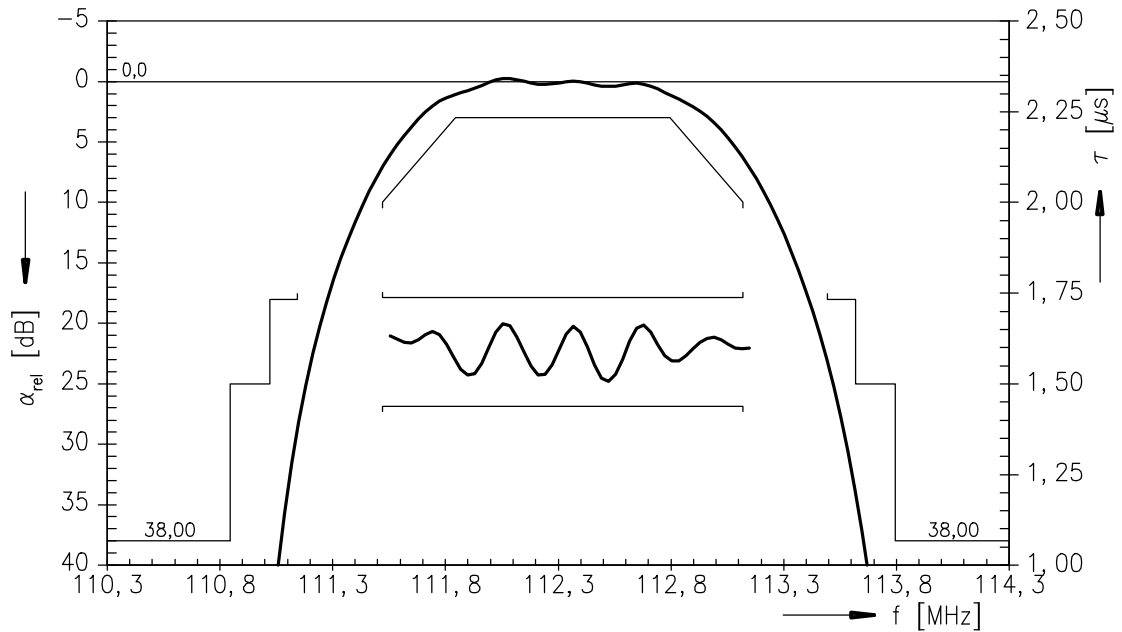
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Transfer function:



Transfer function (pass band):





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