

IF Filters for Cordless Phones and ISM-Band Application

Series/Type: B8100

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product		Deadline Last Orders	Last Shipments	
B39111B8100L100	B39111B4542Z910	2004-05-19	2004-09-30	2004-12-31	

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.



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## B39111B8100L100

Date of withdrawal: 19–MAY–04 Deadline for last orders: 30–SEP–04 Last shipments: 31–DEC–04

For further information please contact your nearest EPCOS sales office you in selecting a suitable substitute. The addresses of the sales office at www.epcos.com/sales.

# **SAW Components**

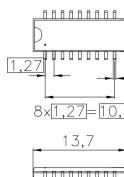
Data Sheet B 8100



- 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 alloyv



Dimensions in mm,

## Pin configuration

13,14,15,18

7	Input
8	Input ground or balanced input
16	Output
17	Output ground or balanced output
1,4,5,6,9,10	Chip carrier – ground

2,3,11,12 not connected

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Туре	Ordering code	ing code Marking and Package	
		according to	accord
B8100	B39111-B8100-L100	C61157-A2-A4	F6107

Electrostatic Sensitive Device (ESD)

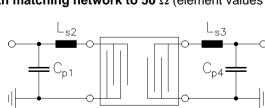
## **Maximum ratings**

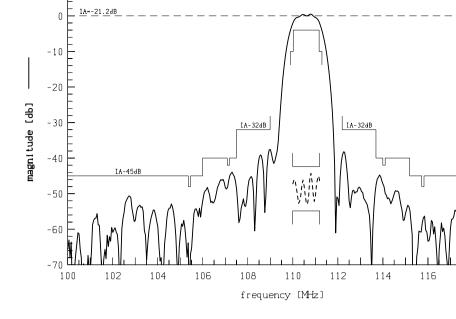
Operable temperature range	Τ	-25/+65	°C	
Storage temperature range	$T_{\rm stg}$	-40/+85	°C	
DC voltage	$V_{\rm DC}$	5	V	
Source power	$P_{s}$	10	dBm	

Terminating load impedance:  $Z_{L} = 50 \Omega (140 \Omega || 110 \text{ nH}^*)$ 

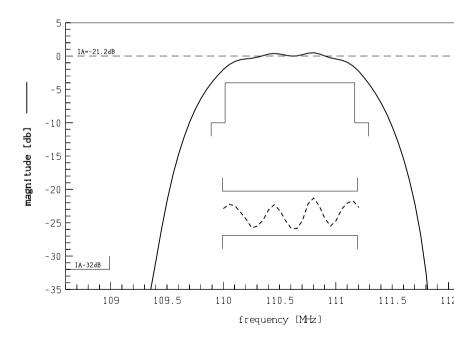
		` ''	,
		min.	typ.
Nominal frequency	f <sub>N</sub>		110,59
Center frequency	$f_{\mathtt{C}}$	110,48	110,59
(center frequency between 10 dB points)			
Insertion attenuation at f <sub>N</sub>	$\alpha_{N}$	_	20,9
(including losses in matching network)		_	(13,5*)
Passband width	$B_{3dB}$	_	1,28
	$B_{30dB}$	_	2,40
Group delay ripple (p-p)	$\Delta  au$		
$f_{\rm N}$ - 600 kHz $f_{\rm N}$ + 600 kHz		_	180
		_	(300*)
<b>Relative attenuation</b> (relative to $\alpha_N$ )	$lpha_{\text{rel}}$		
$f_{N}$ - 576 kHz $f_{N}$ + 576 kHz		_	2,0
$f_{\rm N} \pm 576 \text{ kHz}$ $f_{\rm N} \pm 700 \text{ kHz}$		_	_
$f_{\rm N} \pm 1,6 \ {\rm MHz} \qquad \qquad f_{\rm N} \pm 3,1 \ {\rm MHz}$		32	38
$f_{N} \pm 3.1 \text{ MHz}$ $f_{N} \pm 4.6 \text{ MHz}$		40	44
$f_{N} \pm 4,6 \text{ MHz}$ $f_{N} \pm 20 \text{ MHz}$		45	50
f <sub>N</sub> ± 1,728 MHz		32	38
$f_{\rm N} \pm 2 \times 1,728  {\rm MHz}$		42	47
$f_{\rm N} \pm 3 \times 1,728 \text{ MHz}$		48	53
Impedance at $f_N$			
Input: $Z_{IN} = R_{IN}    C_{IN}$		_	600    8,5
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		_	140   19,0
Temperature coefficient of frequency	$TC_{f}$		- 18

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



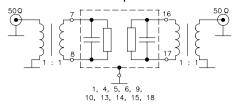


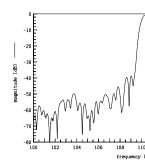
## Transfer function (pass band):



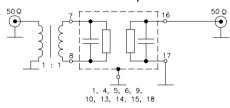
For optimum performance use the following pin configurations.

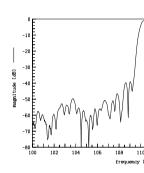
## Balanced-balanced operation:



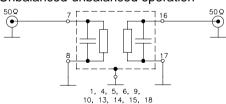


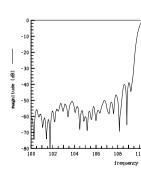
## Balanced-unbalanced operation:





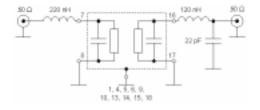
## Unbalanced-unbalanced operation



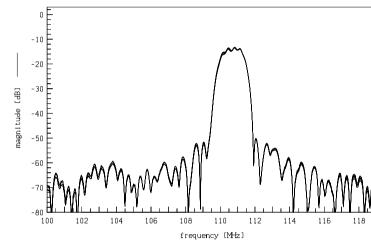


#### Matching Stability / Variation of the Matching Network:

All matching-elements changed by  $\pm 10\%$  (simulation).



Transfer function of matched filter (S<sub>21</sub>):



Impedance variation of matched filter (in passband):

