



# SAW filters for infrastructure systems

## Series/Type: B5201

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39181B5201H510		2012-01-13	2012-12-31	2013-03-30

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**SAW Components**

**B5201**

**Low-Loss Filter**

**183.6 MHz**

Data sheet



**Revision History: Changes compared to previous iteration issue**

ISSUE	ORIGINATOR	DETAIL SPEC CHANGES	DATE
0.1	M.Stoerkle	initial release	03.12.2007
LT64A			
1.0	M. Stoerkle	selectivity around 185.5 MHz relaxed IL improved to 12 dB single ended matching proposal added	24.01.2008
B5201			
2.0	M. Stoerkle	fc adjusted to enable widened passband spec(+/-0.68 MHz) and improve selectivity at up- per stopband to initial DG value	16.07.2008



Data sheet



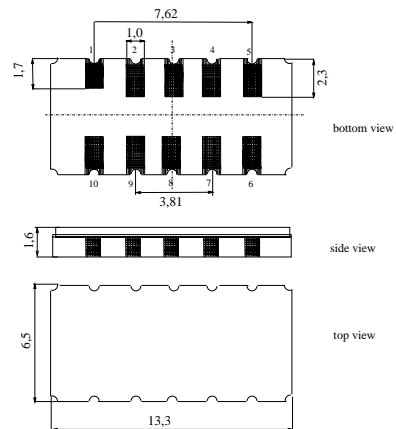
Application

- Low-loss IF filter for CDMA base station, receive path (Rx)
- Usable passband 1.36 MHz
- Unbalanced or balanced operation possible
- High near-by selectivity
- Temperature stable



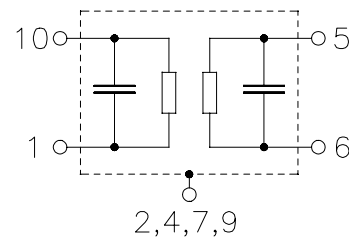
Features

- Package size 13.3 x 6.5 x 1.6 mm<sup>3</sup>
- Package code DCC12A
- RoHS compatible
- Approx. weight 0.4 g
- Ceramic package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Filter surface passivated



Pin configuration

- 10 Input
- 1 Balanced Input or Input ground
- 5 Output
- 6 Balanced Output of Output ground
- 3, 8 To be grounded
- 2, 4, 7, 9 Case ground




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**Characteristics**

 Operating temperature range:  $T = 0$  to  $+85$  °C

 Terminating source impedance:  $Z_S = 1\text{ k}\Omega \parallel 0.75\text{ pF}$  bal or  $50\ \Omega$  single ended and matching network

 Terminating load impedance:  $Z_L = 1\text{ k}\Omega \parallel 0.75\text{ pF}$  bal or  $50\ \Omega$  single ended and matching network

			min.	typ. @ 25°C	max.	
<b>Nominal frequency</b>	$f_N$		—	183.6	—	MHz
<b>Minimum insertion attenuation</b> (including matching network)	$\alpha_{\min}$		—	10	12.0	dB
<b>Passband width</b>	$\alpha_{\text{rel}} \leq 1\text{ dB}$	$B_{1\text{dB}}$	1.36	1.57	—	MHz
	$\alpha_{\text{rel}} \leq 40\text{ dB}$	$B_{40\text{dB}}$	—	3.1	3.6	MHz
<b>Amplitude ripple (p-p)</b>	$f_N \pm 0.68\text{ MHz}$	$\Delta\alpha$	—	0.4	1.0	dB
<b>Phase ripple (rms)</b>	$f_N \pm 0.68\text{ MHz}$	$\Delta\varphi$	—	0.9	2.0	° rms
<b>Absolute group delay</b> mean value within $f_N \pm 0.68\text{ MHz}$ at 25 °C		$\bar{\tau}$	—	2120	—	ns
<b>Error vector magnitude</b>	$f_N \pm 0.68\text{ MHz}$	EVM	—	2.0	3.5	%
<b>Alternate channel suppression</b> $f_N \pm 1.845\text{ MHz} \dots f_N \pm 3.075\text{ MHz}$		ACS	—	53 <sup>1)</sup>	—	dB
<b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b> $f_N \pm 1.8\text{ MHz} \dots f_N \pm 40\text{ MHz}$		$\alpha_{\text{rel}}$	40	47 <sup>1)</sup>	—	dB
<b>VSWR (input and output)</b>	$f_N \pm 0.68\text{ MHz}$		—	1.5:1	2.0:1	
<b>Temperature coefficient of frequency</b> <sup>2)</sup>		$TC_f$	—	-0.036	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>		$T_0$	—	35	—	°C

<sup>1)</sup> for balanced operation degraded to 44 dB typical

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

Operable temperature range	T	-40/+85	°C
Storage temperature range	$T_{\text{stg}}$	-40/+85	°C
DC voltage	$V_{\text{DC}}$	0	V
Input Power	$P_{\text{IN}}$	10	dBm

 Please read *cautions and warnings and important notes* at the end of this document.

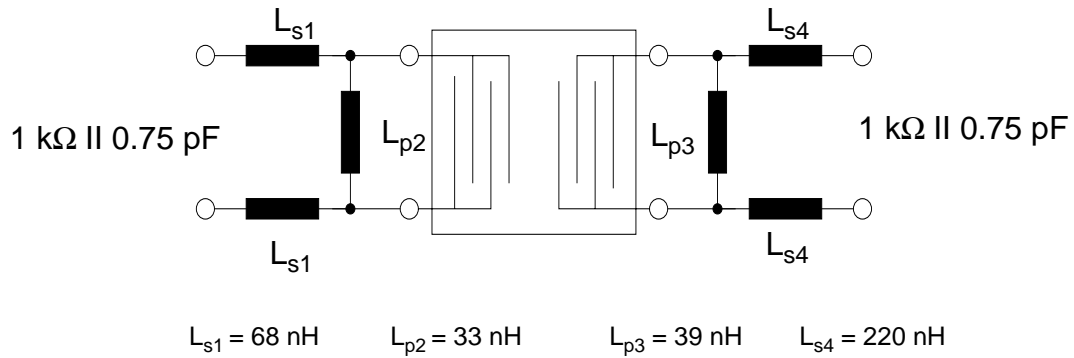


Data sheet



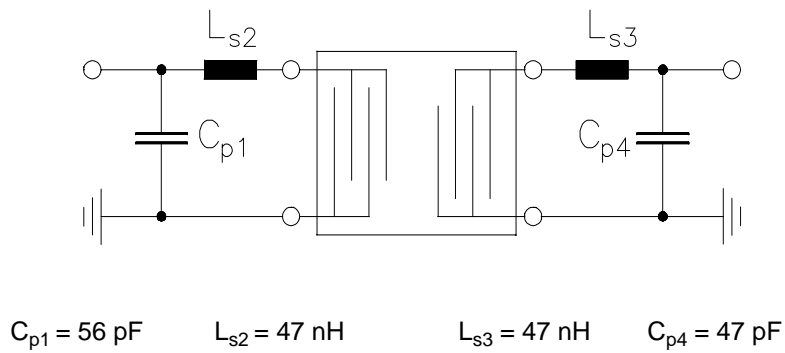
Matching network to  $1\text{ k}\Omega \parallel 0.75\text{ pF}$  balanced:

(element values depend on PCB layout):



Matching network to  $50\ \Omega$  single ended :

(element values depend on PCB layout):





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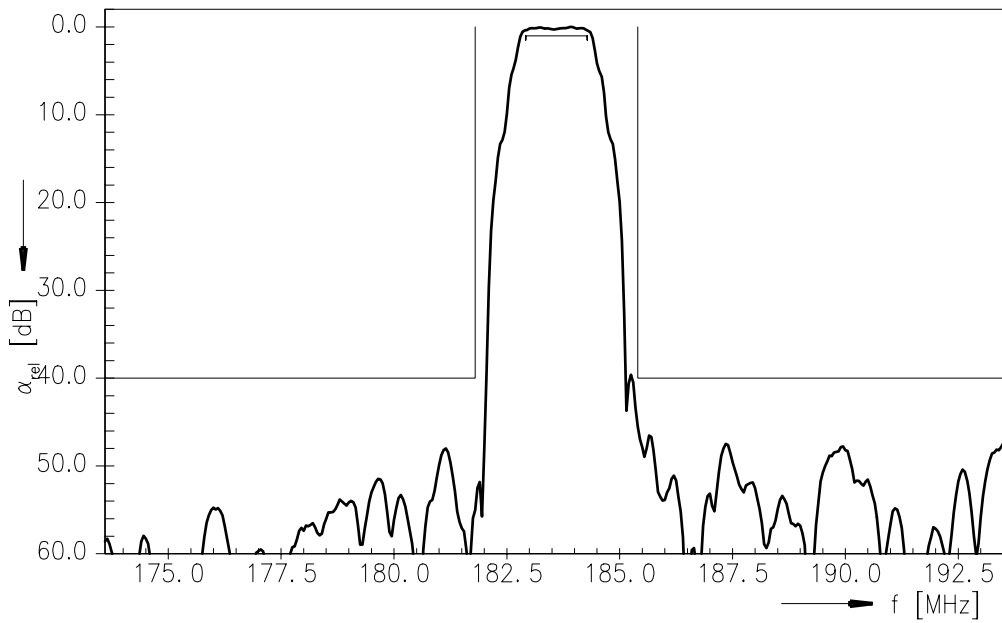
Low-Loss Filter

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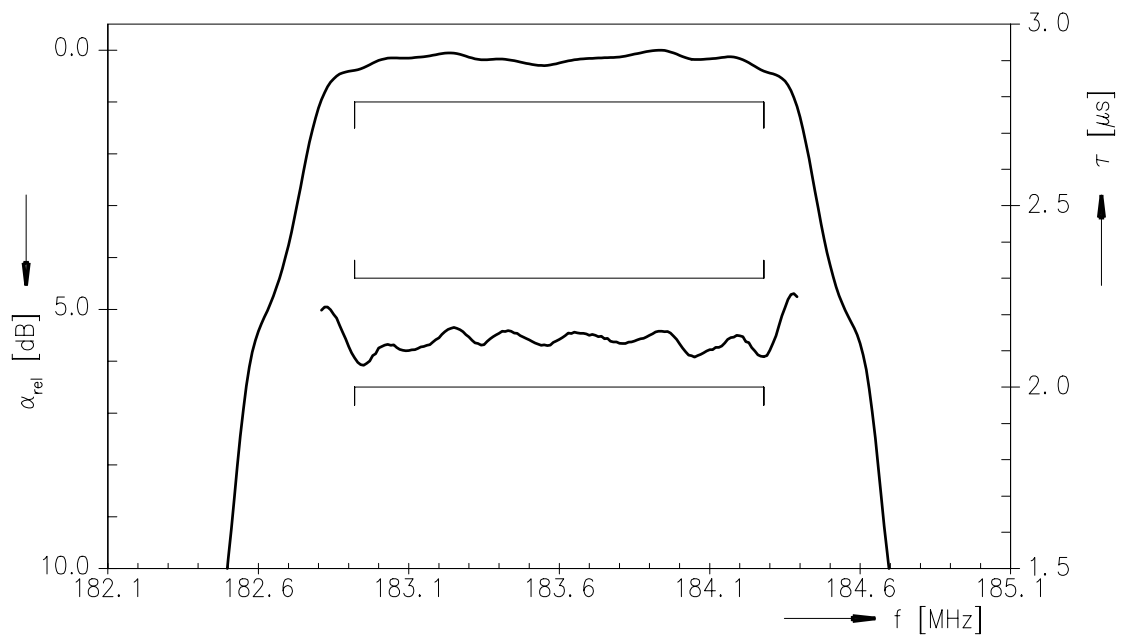
Data sheet



Transfer function



Transfer function (passband)



Please read *cautions and warnings* and *important notes* at the end of this document.



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**183.6 MHz**

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References

<b>Type</b>	B5201
<b>Ordering code</b>	B39181-B5201-H510
<b>Marking and Package</b>	C61157-A7-A94
<b>Packaging</b>	F61074-V8163-Z000
<b>Date Codes</b>	L_1126
<b>S-Parameters</b>	
<b>Soldering profile</b>	S_6001
<b>RoHS compatible</b>	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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**Published by EPCOS AG  
Surface Acoustic Wave Components Division  
P.O. Box 80 17 09, 81617 Munich, GERMANY**

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