



## **SAW Components**

### **SAW IF filter**

GSM base station

<b>Series/type:</b>	<b>B5045</b>
<b>Ordering code:</b>	<b>B39201-B5045-H510</b>
<b>Date:</b>	<b>January 12, 2009</b>
<b>Version:</b>	<b>2.0</b>



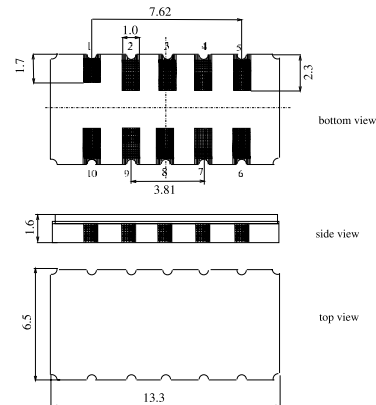
**Application**

- Low-loss IF filter for GSM / EDGE base station
- Usable passband 220 kHz
- Temperature stable
- Balanced or unbalanced operation possible



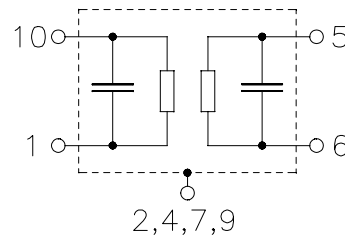
**Features**

- 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**

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





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**201.0 MHz**

**Data Sheet**



**Characteristics**

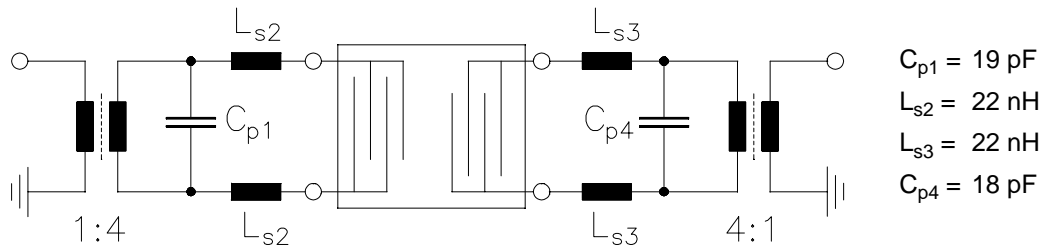
Operating temperature range:  $T = 0 \text{ to } 70 \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 200 \text{ } \Omega$  balanced and matching network  
 Terminating load impedance:  $Z_L = 200 \text{ } \Omega$  balanced and matching network

		min.	typ. @ 25 °C	max.	
<b>Nominal frequency</b>	$f_N$	—	201.0	—	MHz
<b>Minimum insertion attenuation</b> (including matching network)	$\alpha_{\min}$	—	4.4	5.5	dB
<b>Passband width</b> $\alpha_{\text{rel}} \leq 1 \text{ dB}$	$B_{1.0\text{dB}}$	—	290	—	kHz
<b>Amplitude ripple (p-p)</b> $f_N \pm 110 \text{ kHz}$	$\Delta\alpha$	—	0.6	1.0	dB
<b>Group delay ripple (p-p)</b> $f_N \pm 110 \text{ kHz}$	$\Delta\tau$	—	1.0	1.5	$\mu\text{s}$
<b>Absolute group delay</b> at $f_N$	$\tau$	1.7	1.95	2.2	$\mu\text{s}$
<b>Relative attenuation</b> (relative to $\alpha_{\min}$ )	$\alpha_{\text{rel}}$				
$f_N \pm 300 \text{ kHz} \dots f_N \pm 400 \text{ kHz}$		16	25	—	dB
$f_N \pm 400 \text{ kHz} \dots f_N \pm 600 \text{ kHz}$		27	30	—	dB
$f_N \pm 600 \text{ kHz} \dots f_N \pm 800 \text{ kHz}$		28	35	—	dB
$f_N \pm 800 \text{ kHz} \dots f_N \pm 35 \text{ MHz}$		38	45	—	dB
<b>Impulse response attenuation</b> (relative to max.)					
> 3 $\mu\text{s}$ after main lobe		10	12	—	dB
> 30 $\mu\text{s}$ after main lobe		50	60	—	dB
<b>IM3 level</b> (Input level -17 dBm)					
$f_N \pm 800 \text{ kHz}$		—	—	-110	dB
$f_N \pm 1600 \text{ kHz}$		—	—	-110	dB
<b>Temperature coefficient of frequency<sup>1)</sup></b>	$TC_f$	—	-0.036	—	ppm/K <sup>2</sup>
<b>Turnover temperature</b>	$T_0$	—	35	—	$^\circ\text{C}$

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



Matching network to 200 Ω balanced



Transformers are only required for measurement in a 50 Ω environment.  
 Element values depend upon PCB layout and properties.

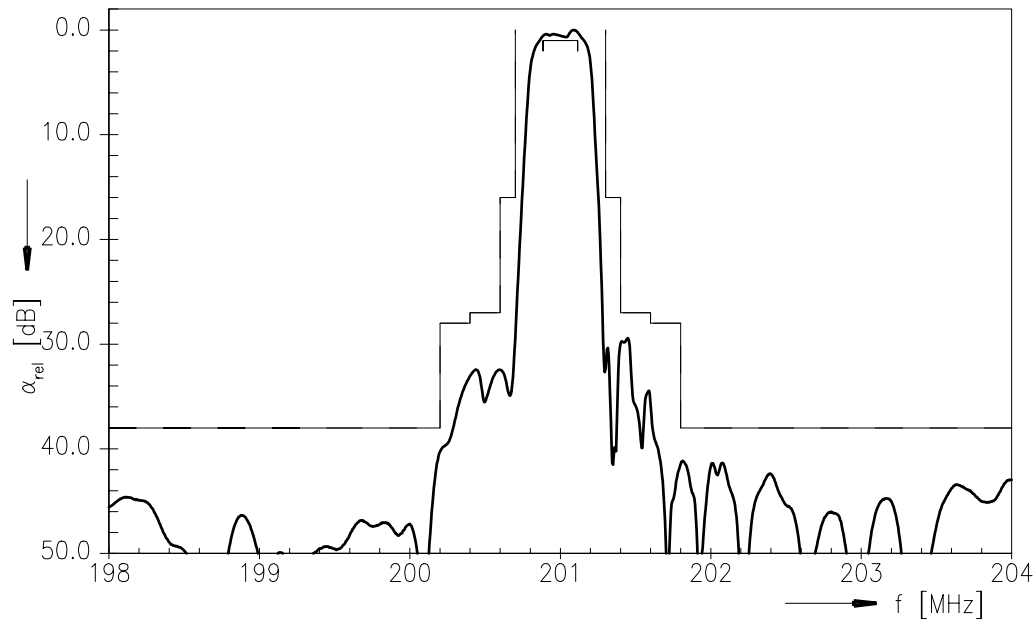
Maximum ratings

Operable temperature range	T	-40/+85	°C	machine model, 1 pulse
Storage temperature range	T <sub>stg</sub>	-40/+85	°C	
DC voltage	V <sub>DC</sub>	0	V	
ESD voltage	V <sub>ESD</sub>	200 <sup>1)</sup>	V	
Input power	P <sub>IN</sub>	10	dBm	

1) acc. to J-STD22A-0115A (machine model, 1 pulse +/-).



Transfer function



Transfer function (passband)



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



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## References

<b>Type</b>	B5045
<b>Ordering code</b>	B39201-B5045-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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