SAW Components

SAW IF filter

GSM base station

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

EPCOS

SAW Components	B5045
SAW IF filter	**201.0 MHz**

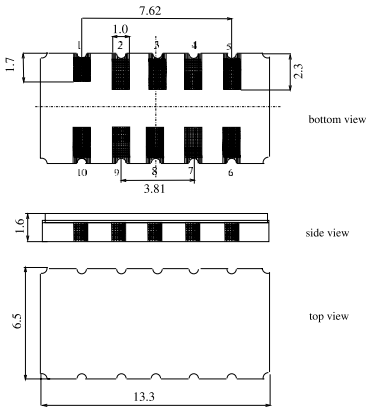
Data Sheet SMD

Application

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

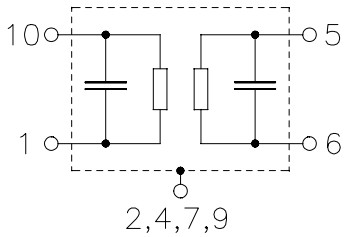
Features

- Package size 13.3 x 6.5 x 1.6 mm^3
- Package code DCC12A
- RoHS compatible
- Approx. weight 0.4 g
- Ceramic package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- Filter surface passivated



Pin configuration

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



Data Sheet SMD

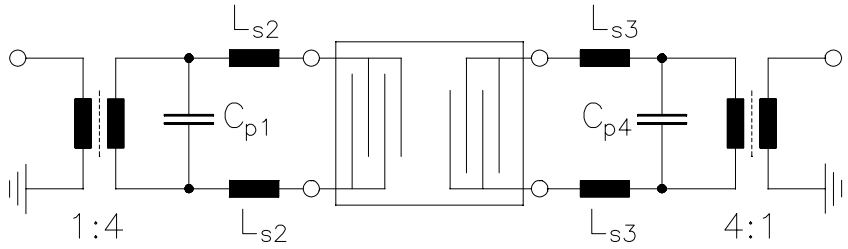
Characteristics

Operating temperature range: T = 0 to 70 °C
Terminating source impedance: Z_S = 200 Ω balanced and matching network
Terminating load impedance: Z_L = 200 Ω balanced and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	201.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	4.4	5.5	dB
Passband width	$B_{1.0dB}$				
$\alpha_{rel} \le 1$ dB		—	290	—	kHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 110$ kHz		—	0.6	1.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 110$ kHz		—	1.0	1.5	µs
Absolute group delay	τ				
at f_N		1.7	1.95	2.2	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 300 kHz ... $f_N \pm$ 400 kHz		16	25	—	dB
$f_N \pm$ 400 kHz ... $f_N \pm$ 600 kHz		27	30	—	dB
$f_N \pm$ 600 kHz ... $f_N \pm$ 800 kHz		28	35	—	dB
$f_N \pm$ 800 kHz ... $f_N \pm$ 35 MHz		38	45	—	dB
Impulse response attenuation (relative to max.)					
> 3 µs after main lobe		10	12	—	dB
> 30 µs after main lobe		50	60	—	dB
IM3 level (Input level -17 dBm)					
$f_N \pm$ 800 kHz		—	—	-110	dB
$f_N \pm$ 1600 kHz		—	—	-110	dB
Temperature coefficient of frequency[1]	TC_f	—	–0.036	—	ppm/K²
Turnover temperature	T_0	—	35	—	°C

[1] 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



C_{p1} = 19 pF
L_{s2} = 22 nH
L_{s3} = 22 nH
C_{p4} = 18 pF

Transformers are only required for measurement in a 50 Ω environment.

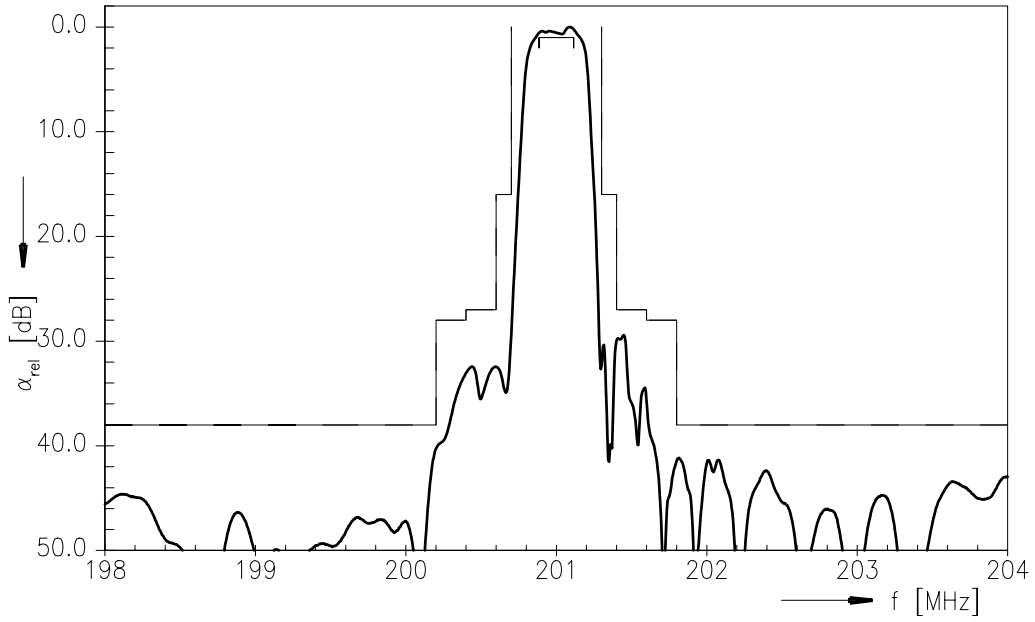
Element values depend upon PCB layout and properties.

Maximum ratings

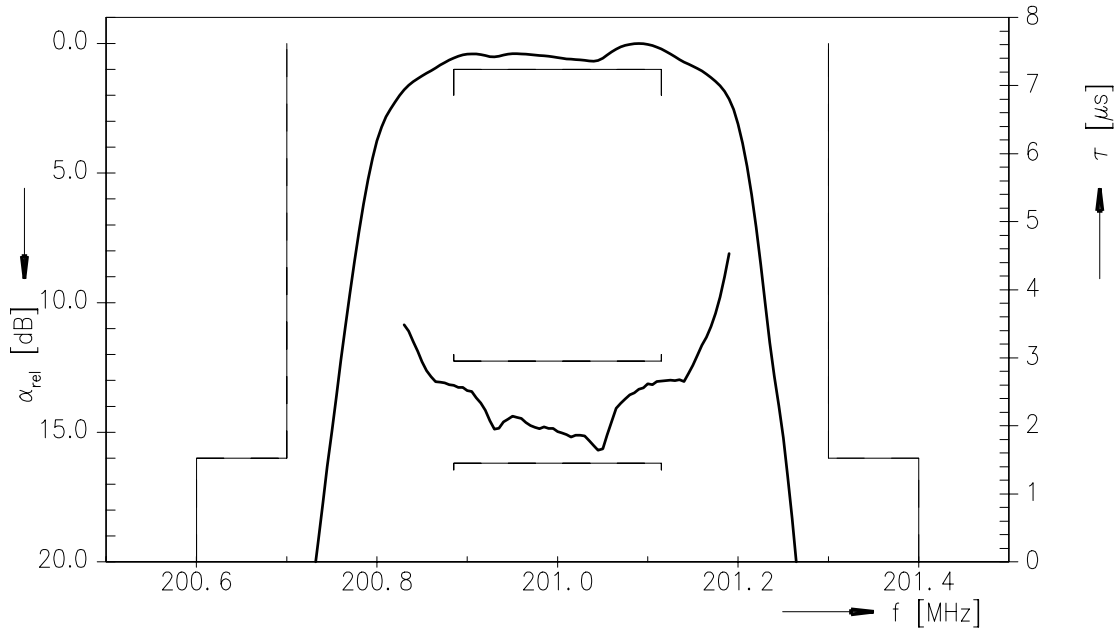
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200[1)]	V	machine model, 1 pulse
Input power	P_{IN}	10	dBm	

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

Transfer function



Transfer function (passband)



References

Type	B5045
Ordering code	B39201-B5045-H510
Marking and package	C61157-A7-A94
Packaging	F61074-V8163-Z000
Date codes	L_1126
S-parameters	
Soldering profile	S_6001
RoHS compatible	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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