



SAW Components

SAW IF filter

TD-SCDMA

Series/type:	B5207
Ordering code:	B39141B5207H310
Date:	March 05, 2009
Version:	2.0



Data Sheet



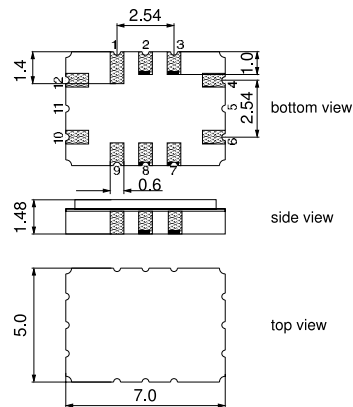
Application

- Low-loss IF filter for TD-SCDMA base station
- Usable passband 20.0 MHz
- Balanced or unbalanced operation



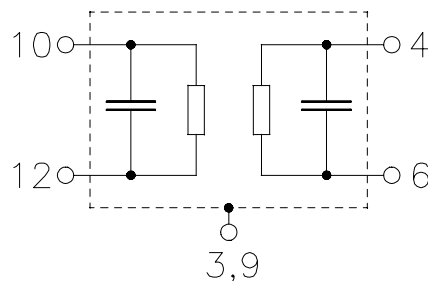
Features

- Package size 7.0 x 5.0 x 1.48 mm³
- Package code QCC12C
- RoHS compatible
- Approximate weight 0.25 g
- Ceramic Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- Filter surface passivated



Pin configuration

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




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138.24 MHz
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Characteristics

Temperature range for specification:

 $T = -40\text{ °C to }+85\text{ °C}$

Terminating source impedance:

 $Z_S = 50\ \Omega$ and matching network

Terminating load impedance:

 $Z_L = 50\ \Omega$ and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	138.24	—	MHz
Minimum insertion attenuation (including matching network)	α_{\min}	—	8.5	10.0	dB
Passband width	$\alpha_{\text{rel}} \leq 1.0\text{ dB}$	$B_{1.0\text{dB}}$	20	23.1	—
					MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
	$f_N \pm 10.0\text{ MHz}$	—	0.4	1.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
	$f_N \pm 10.0\text{ MHz}$	—	40	60	ns
Absolute group delay (mean)	$\bar{\tau}$				
	$f_N \pm 10.0\text{ MHz}$	—	665	—	ns
Relative attenuation (relative to α_{\min})	α_{rel}				
	10.00 MHz ... 90.00 MHz	55	62	—	dB
	90.00 MHz ... 108.24 MHz	50	57	—	dB
	108.24 MHz ... 117.52 MHz	50	57	—	dB
	122.88 MHz	45	52	—	dB
	220.40 MHz ... 271.12 MHz	58	75	—	dB
	271.12 MHz ... 1000.00 MHz	40	75	—	dB
1dB compression point		12	—	—	dBm
Input IP3		35	—	—	dBm
Temperature coefficient of frequency	TC_f	—	-87	—	ppm/K



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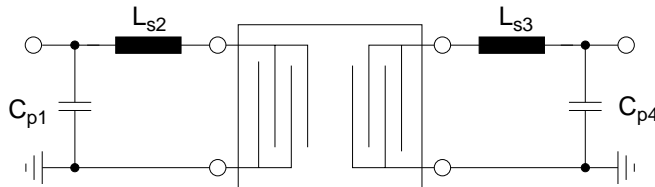
SAW IF filter

138.24 MHz

Data Sheet



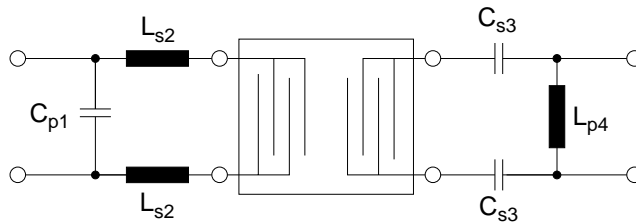
Matching network to 50 Ω



- $C_{p1} = 27 \parallel 2.2 \text{ pF}$
- $L_{s2} = 82 \text{ nH}$
- $L_{s3} = 33 \text{ nH}$
- $C_{p4} = 47 \parallel 2.2 \text{ pF}$

Element values depend upon board layout and properties.

Matching network to 200 Ω balanced input and 200 Ω balanced output



- $C_{p1} = 18 \text{ pF}$
- $L_{s2} = 62 \text{ nH}$
- $C_{s3} = 100 \text{ pF}$
- $L_{p4} = 47 \text{ nH}$

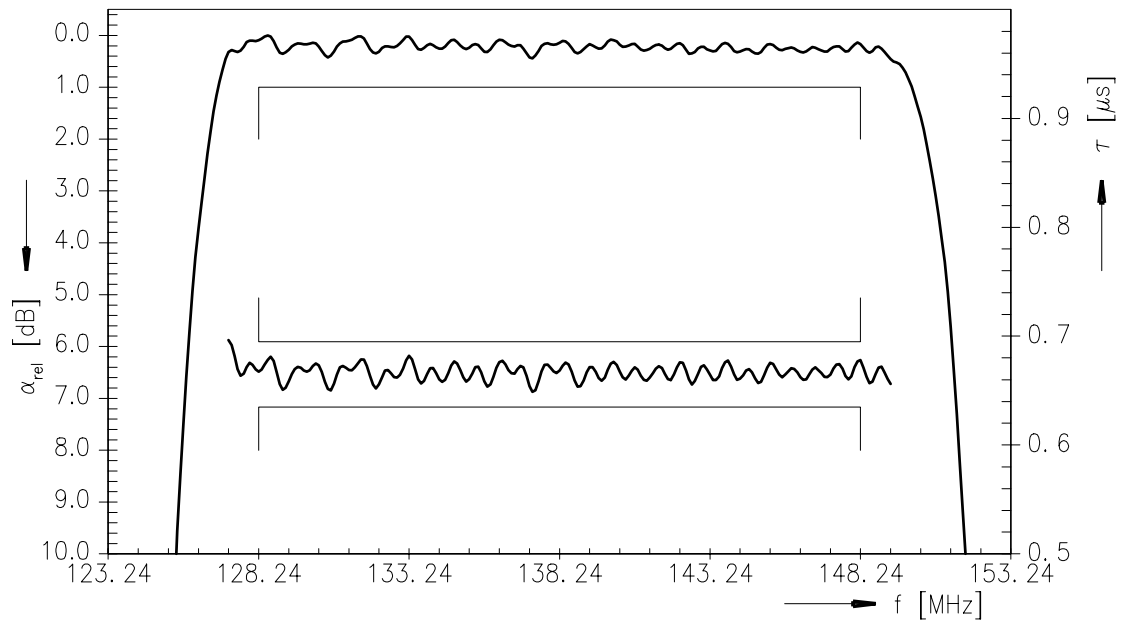
Element values depend upon board layout and properties.

Maximum ratings

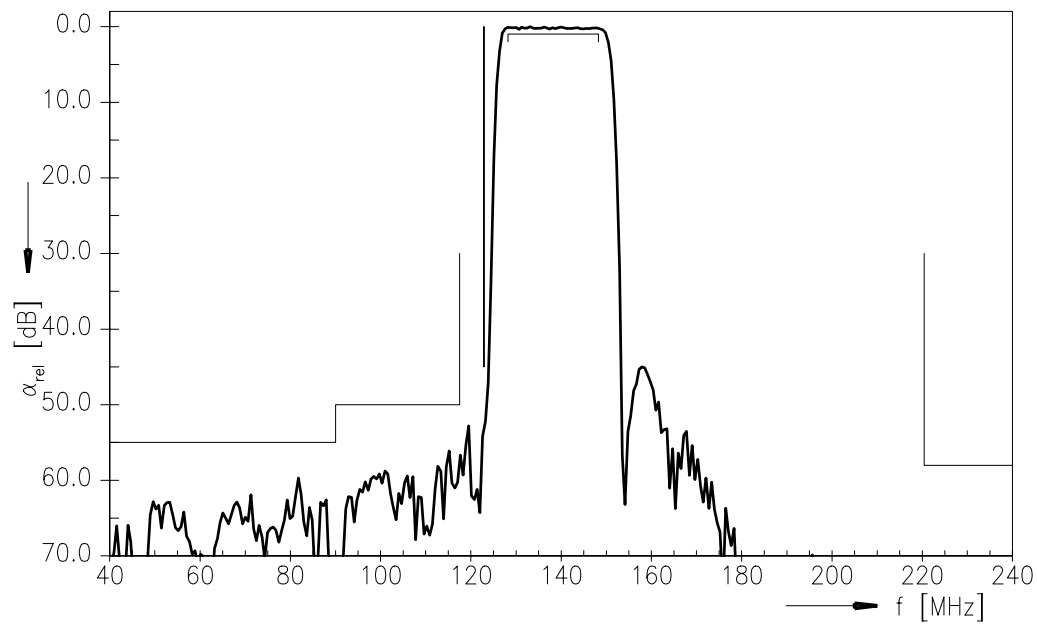
Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{stg}	-40/+85	°C	
DC voltage	V _{DC}	0	V	
Input Power	P _{IN}	10	dBm	



Transfer function (S21, Narrowband)



Transfer function (S21, Wideband)





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References

Type	B5207
Ordering code	B39141B5207H310
Marking and package	C61157-A7-A95
Packaging	F61074-V8170-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."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com.

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