



SAW Components

SAW IF filter

LTE

Series/type:	B5204
Ordering code:	B39161B5204H810
Date:	November 17, 2009
Version:	2.1



SAW Components	B5204
SAW IF filter	164.0 MHz

Data Sheet



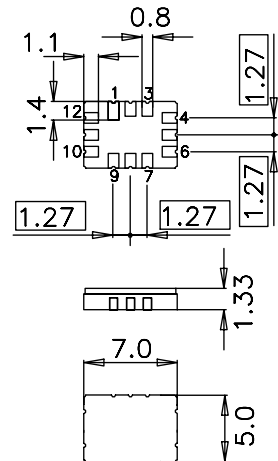
Application

- Low-loss IF filter for LTE base station
- Usable passband 20.0 MHz
- Unbalanced or balanced operation



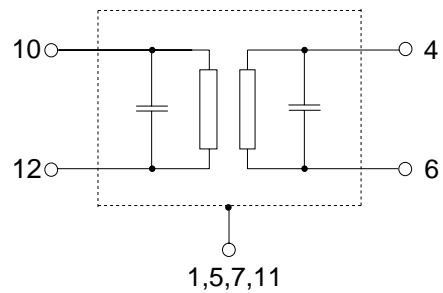
Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- 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 or balanced input
- 4 Output
- 6 Output ground or balanced output
- 2, 3, 8, 9 To be grounded
- 1, 5, 7, 11 Case ground





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Characteristics

Temperature range for specification: T = -40 °C to +85 °C
 Terminating source impedance: Z_S = 50 Ω and matching network
 Terminating load impedance: Z_L = 50 Ω and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f _N	—	164.0	—	MHz
Minimum insertion attenuation (including matching network)	α _{min}	—	7.5	9.0	dB
Passband width	α _{rel} ≤ 1.0 dB	B _{1.0dB}	20.0	23.8	— MHz
Amplitude ripple (p-p)	f _N ± 10.0 MHz	Δα	—	0.2	1.0 dB
Phase ripple (rms)	f _N ± 10.0 MHz	Δφ _{rms}	—	0.5	2.0 °
Group delay ripple (p-p)	f _N ± 10.0 MHz	Δτ	—	15	50 ns
Absolute group delay (mean)	f _N ± 10.0 MHz	τ	—	0.5	— μs
Average Error Vector Magnitude	f _{N, WCDMA(k)¹⁾ ± 1.92 MHz}	EVM	—	1.0	4.0 %
Input IP3			40	—	— dBm
Relative attenuation (relative to α _{min})	10 MHz ... 123 MHz	α _{rel}	40	65	— dB
	194 MHz ... 1 GHz		40	50	— dB
Temperature coefficient of frequency	TC _f	—	-87	—	ppm/K

¹⁾ f_{N, WCDMA(k)} = 156.5MHz + k*5MHz; k = (0,1,2,3)

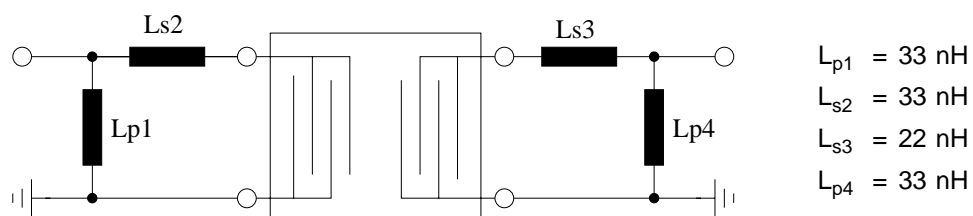


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Matching network to 50 Ω



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}	15	dBm	
Input power	P _{IN}	21	dBm	lifetime-test ongoing
Input power (peak)	P _{IN}	22	dBm	for 2 minutes

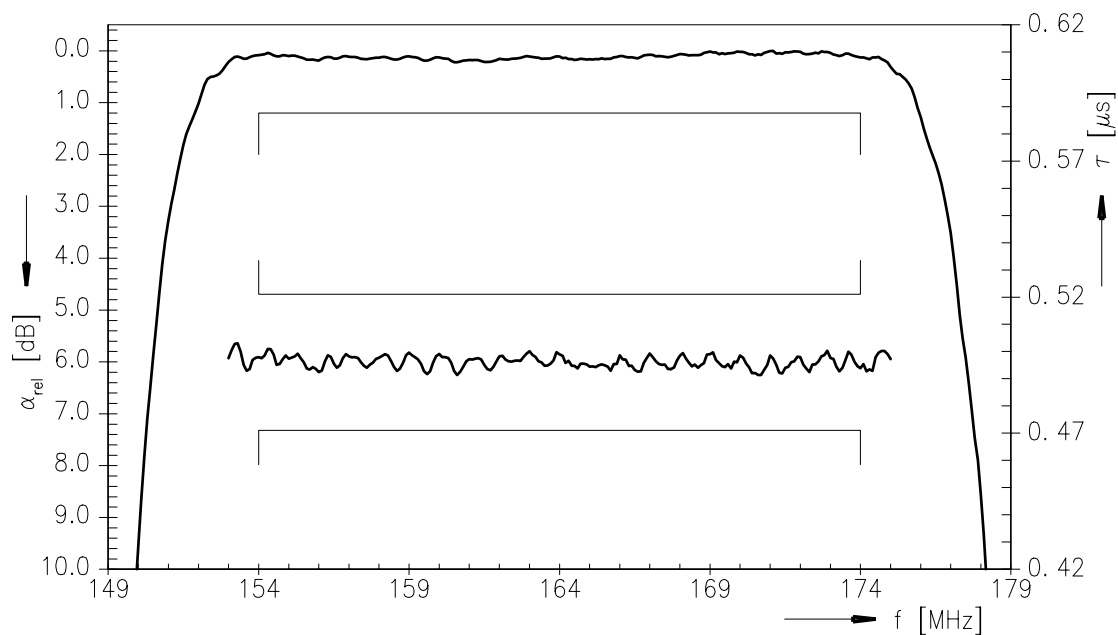


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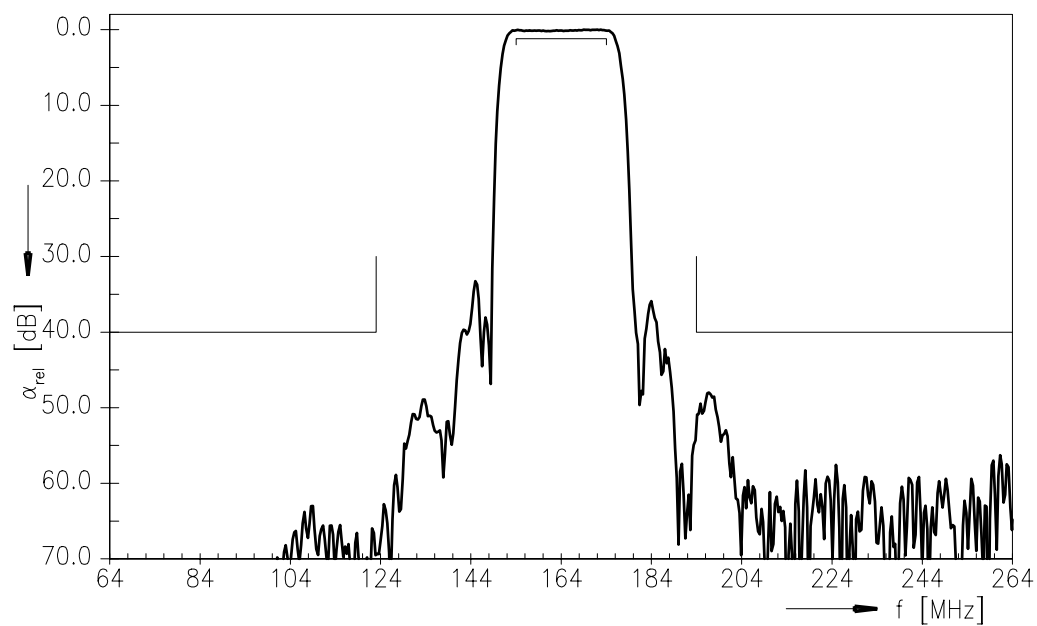
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Transfer function (S21, Narrowband)



Transfer function (S21, Wideband)



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



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References

Type	B5204
Ordering code	B39161B5204H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	B5204_NB.s2p B5204_NB_UN.s4p, B5204_WB_UN.s4p
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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