



SAW Components

SAW IF filter

WCDMA

Series/type:	B5070
Ordering code:	B39171-B5070-H810
Date:	Sep 24, 2007
Version:	2.0



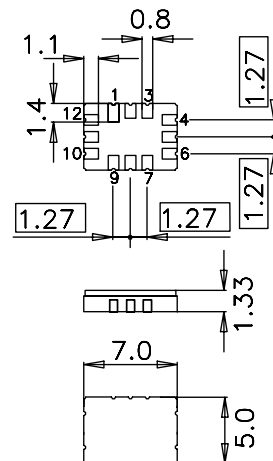
Application

- Low-loss IF filter for WCDMA base station
- Usable passband 15 MHz
- Balanced or unbalanced operation possible



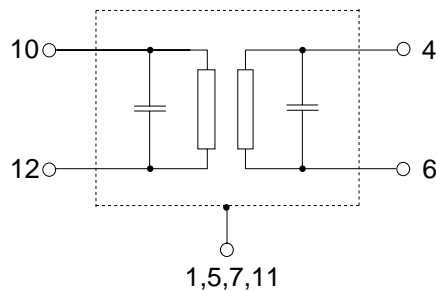
Features

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




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B5070
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167.0 MHz

Data sheet


Characteristics

Operating temperature range:	T = -10 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	—	167.0	—	MHz
Minimum insertion attenuation (including matching network)	α _{min}	—	7.3	8.5	dB
Maximum insertion attenuation (including matching network) f _N ± 7.5 MHz	α _{max}	—	7.7	9.5	dB
Passband width	α _{rel} ≤ 1.0 dB	B _{1dB}	15.0	18.1	—
					MHz
Amplitude ripple (p-p)	Δα				
	f _N ± 7.5 MHz	—	0.4	1.0	dB
Average Error Vector Magnitude	EVM				
	f _N ± 1.92 MHz	—	0.7	3.0	%
	f _N - 5 MHz ± 1.92 MHz	—	0.9	4.0	%
	f _N + 5 MHz ± 1.92 MHz	—	0.9	4.0	%
	f _{N,CDMA(k)} ¹⁾ ± 0.6144 MHz	—	0.7	4.0	%
Return Loss					
Input	f _N ± 7.5 MHz	10.0	15.0	—	dB
Output	f _N ± 7.5 MHz	10.0	19.0	—	dB
Input IP3		40	—	—	dBm
Relative attenuation (relative to α_{min})	α _{rel}				
	f _N - 10.0 MHz ... f _N - 15.0 MHz	0.5	4.0	—	dB
	f _N + 10.0 MHz ... f _N + 15.0 MHz	1.5	5.7	—	dB
	f _N ± 15.0 MHz ... f _N ± 20.0 MHz	25	46	—	dB
	f _N ± 20.0 MHz ... f _N ± 57.0 MHz	40	50	—	dB
Temperature coefficient of frequency	TC _f	—	-87	—	ppm/K

¹⁾ f_{N,CDMA(k)} = 160.125MHz + k*1.25MHz; k = (0,1,...,11)


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Characteristics

Operating temperature range:	T = -40 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	—	167.0	—	MHz
Minimum insertion attenuation (including matching network)	α _{min}	—	7.3	8.5	dB
Maximum insertion attenuation (including matching network) f _N ± 7.5 MHz	α _{max}	—	7.7	9.5	dB
Passband width	α _{rel} ≤ 1.0 dB B _{1dB}	15.0	18.1	—	MHz
Amplitude ripple (p-p)	Δα f _N ± 7.5 MHz	—	0.4	1.0	dB
Average Error Vector Magnitude	EVM				
	f _N ± 1.92 MHz	—	0.7	3.0	%
	f _N - 5 MHz ± 1.92 MHz	—	0.9	4.0	%
	f _N + 5 MHz ± 1.92 MHz	—	0.9	4.0	%
	f _{N,CDMA(k)} ¹⁾ ± 0.6144 MHz	—	0.7	4.0	%
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	f _N ± 15.0 MHz ... f _N ± 20.0 MHz	25	46	—	dB
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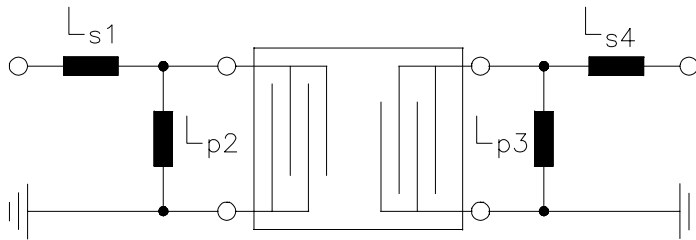
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167.0 MHz

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Matching network to 50 Ω unbalanced



$L_{s1} = 68 \text{ nH}$
 $L_{p2} = 68 \text{ nH}$
 $L_{p3} = 120 \text{ nH}$
 $L_{s4} = 100 \text{ nH}$

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	
Input peak power	P _{IN,peak}	23	dBm	for max. 100 hours

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



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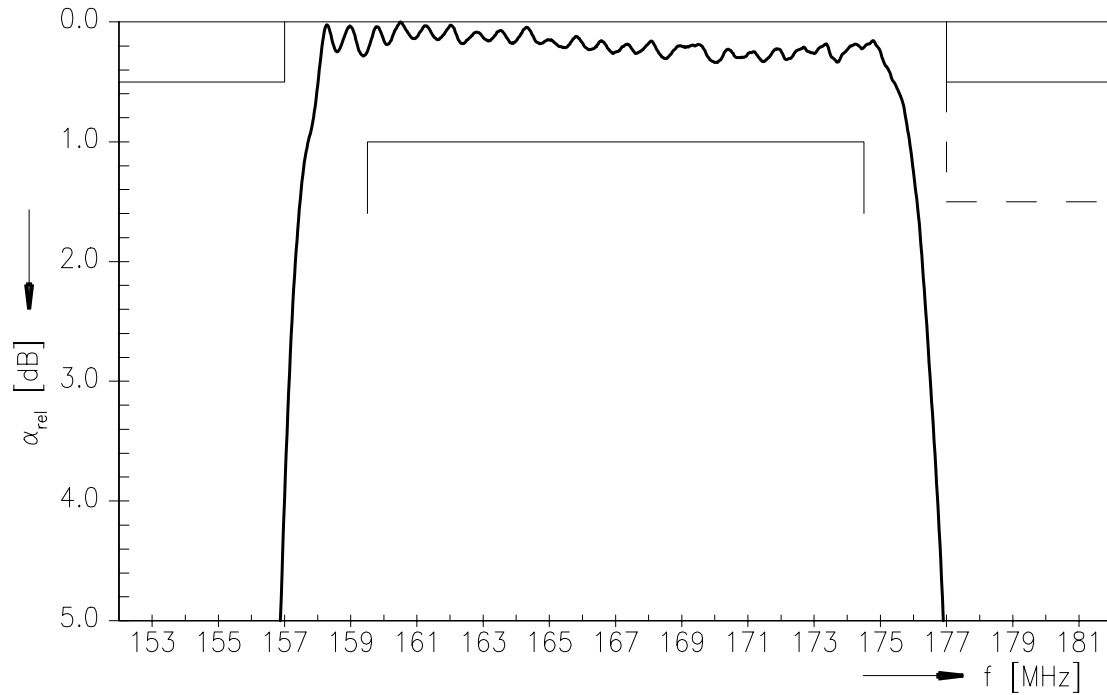
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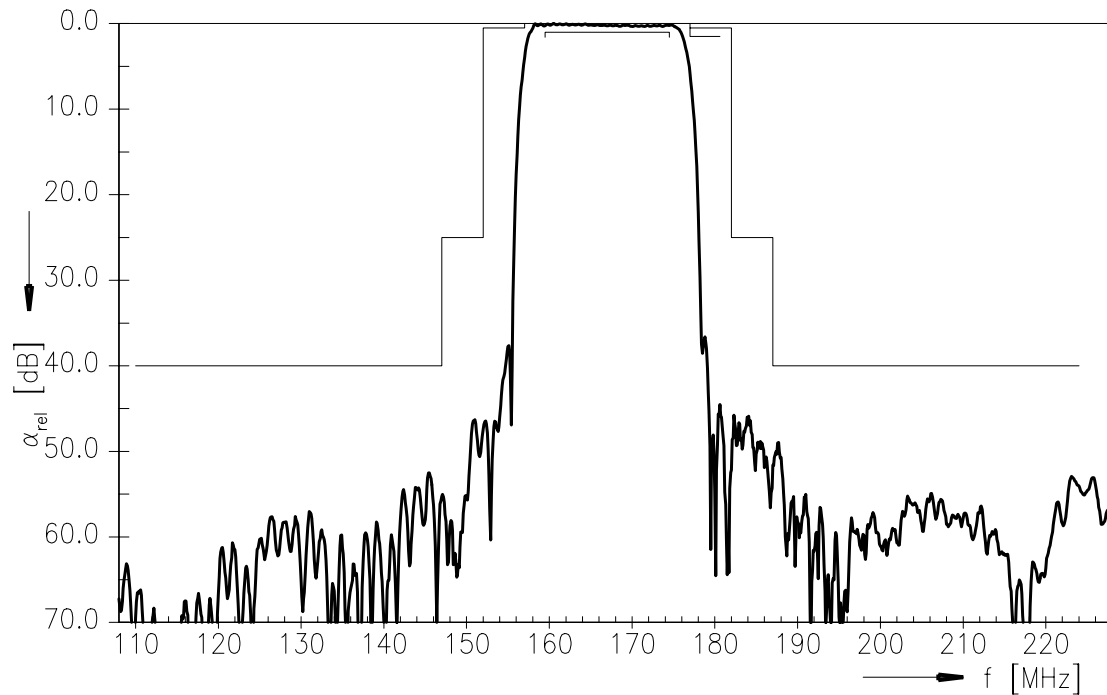
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Transfer function



Transfer function (wideband)



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



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References

Type	B5070
Ordering code	B39171-B5070-H810
Marking and package	C61157-A7-A103
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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7 Sep 24, 2007



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