



SAW Components

SAW IF filter

WCDMA

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

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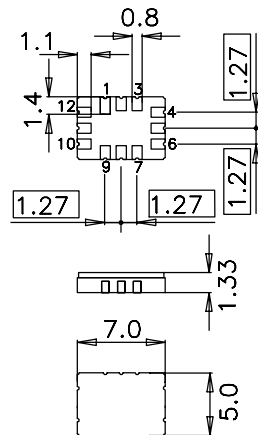
Application

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



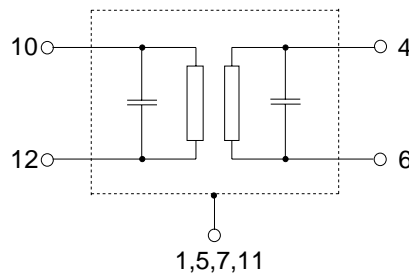
Features

- 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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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)	f _N ± 7.5 MHz	Δα	—	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
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Amplitude ripple (p-p)	f _N ± 7.5 MHz	Δα	—	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 - 10.0 MHz ... f _N - 15.0 MHz	0.5	4.0	—	dB
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	f _N ± 15.0 MHz ... f _N ± 20.0 MHz	25	46	—	dB
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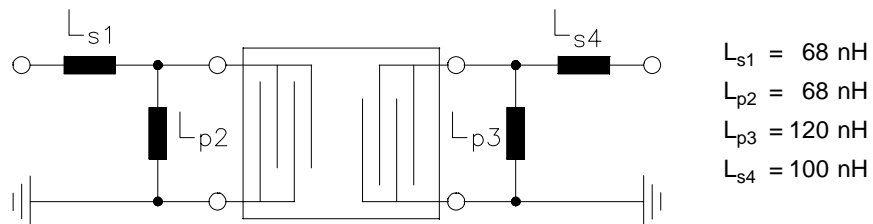
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Matching network to 50 Ω unbalanced



Maximum ratings

Operable temperature range	T	-40/+85	°C	
Storage temperature range	T _{sta}	-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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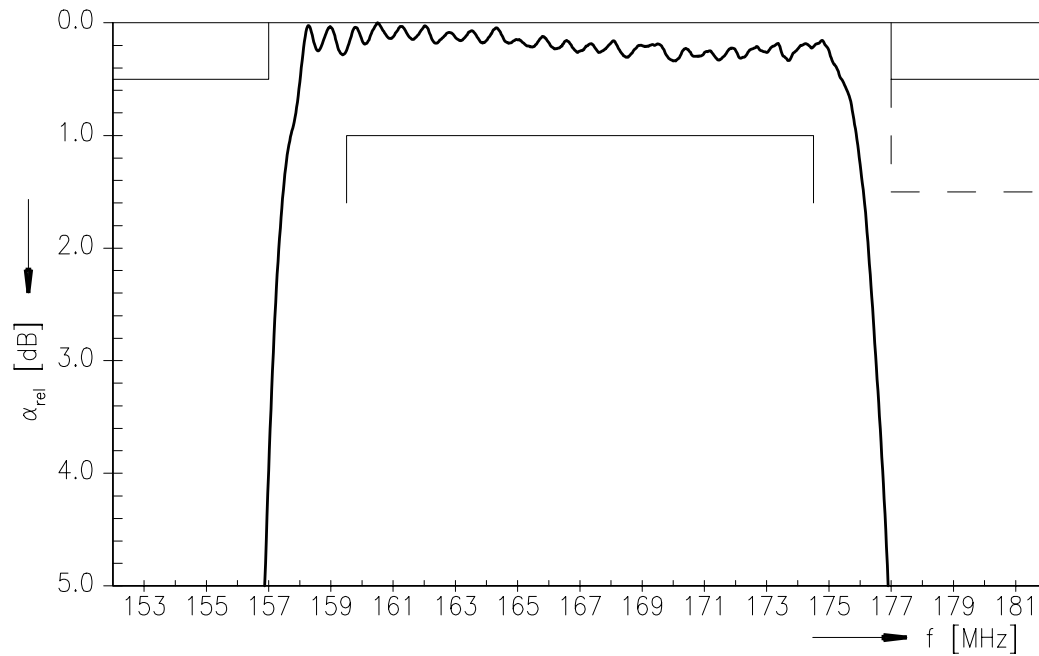
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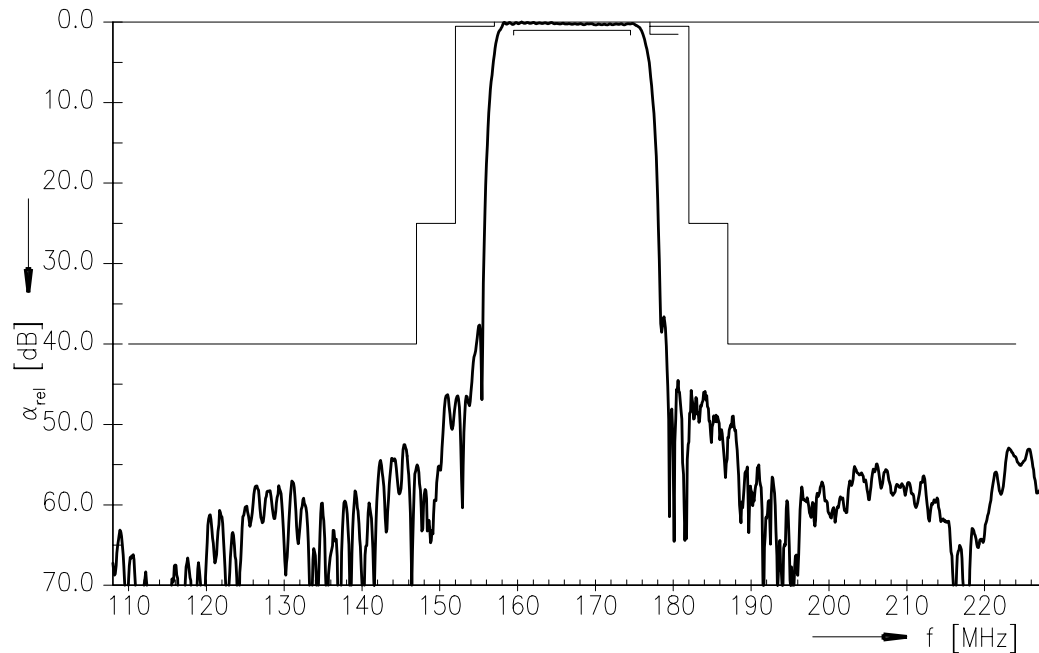
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Transfer function



Transfer function (wideband)



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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."

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