SAW Components

SAW IF filter

WCDMA

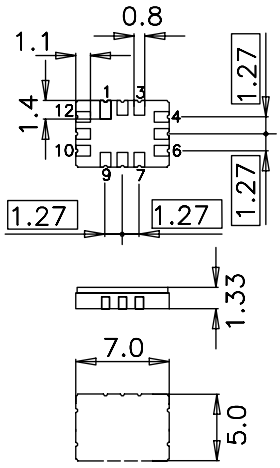
Series/type:	**B5060**
Ordering code:	**B39171-B5060-H810**
Date:	Mar 13, 2007
Version:	2.0

Application

- Low-loss IF filter for WCDMA base station
- Usable passband 10 MHz
- Balanced or unbalanced operation possible

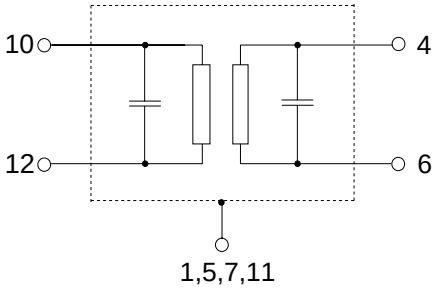
Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.25 g
- Ceramic package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals
- **E**lectrostatic **S**ensitive **D**evice (**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



Data sheet SMD

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}	—	6.9	8.0	dB
Maximum insertion attenuation (including matching network) $f_N \pm 5.0$ MHz	α_{max}	—	7.3	9.0	dB
Passband width $\alpha_{rel} \leq 1.0$ dB	B_{1dB}	10	13.0	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 5.0$ MHz		—	0.4	1.0	dB
Error Vector Magnitude	EVM				
$f_N - 2.5$ MHz ± 1.92 MHz		—	0.9	4.0	%
$f_N + 2.5$ MHz ± 1.92 MHz		—	0.9	4.0	%
Return Loss					
$f_N \pm 5.0$ MHz		10.0	13.0	—	dB
Input IP3		40	—	—	dBm
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N - 7.5$ MHz ... $f_N - 10.0$ MHz		0.5	5.2	—	dB
$f_N + 7.5$ MHz ... $f_N + 10.0$ MHz		1.5	6.6	—	dB
$f_N \pm 10.0$ MHz ... $f_N \pm 20.0$ MHz		25	41	—	dB
$f_N \pm 20.0$ MHz ... $f_N \pm 57.0$ MHz		40	48	—	dB
Temperature coefficient of frequency	TC_f	—	–87	—	ppm/K

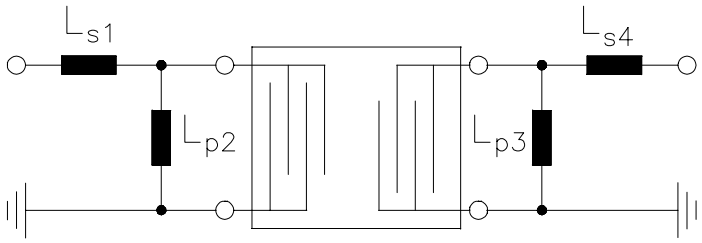
Data sheet SMD

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}	—	6.9	8.0	dB
Maximum insertion attenuation (including matching network) $f_N \pm 5.0$ MHz	α_{max}	—	7.3	9.0	dB
Passband width $\alpha_{rel} \leq 1.0$ dB	B_{1dB}	10	13.0	—	MHz
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 5.0$ MHz		—	0.4	1.0	dB
Error Vector Magnitude	EVM				
$f_N - 2.5$ MHz ± 1.92 MHz		—	0.9	4.0	%
$f_N + 2.5$ MHz ± 1.92 MHz		—	0.9	4.0	%
Return Loss					
$f_N \pm 5.0$ MHz		10.0	12.0	—	dB
Input IP3		40	—	—	dBm
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N - 7.5$ MHz ... $f_N - 10.0$ MHz		0.5	5.2	—	dB
$f_N + 7.5$ MHz ... $f_N + 10.0$ MHz		0.5	6.6	—	dB
$f_N \pm 10.0$ MHz ... $f_N \pm 20.0$ MHz		25	41	—	dB
$f_N \pm 20.0$ MHz ... $f_N \pm 57.0$ MHz		40	48	—	dB
Temperature coefficient of frequency	TC_f	—	–87	—	ppm/K

Matching network to 50 Ω unbalanced



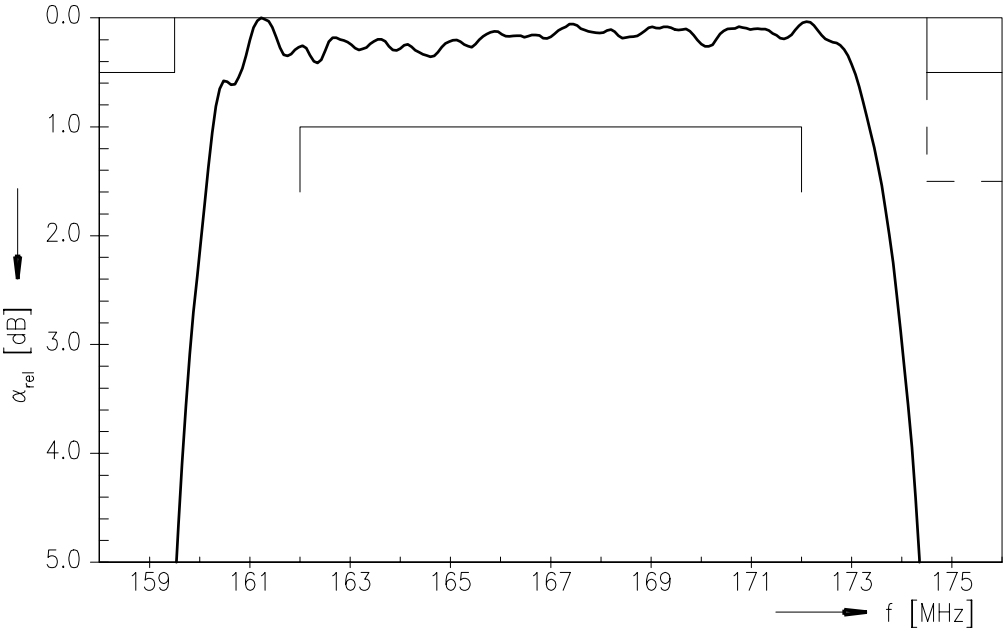
L_{s1} = 62 nH
L_{p2} = 91 nH
L_{p3} = 150 nH
L_{s4} = 91 nH

Maximum ratings

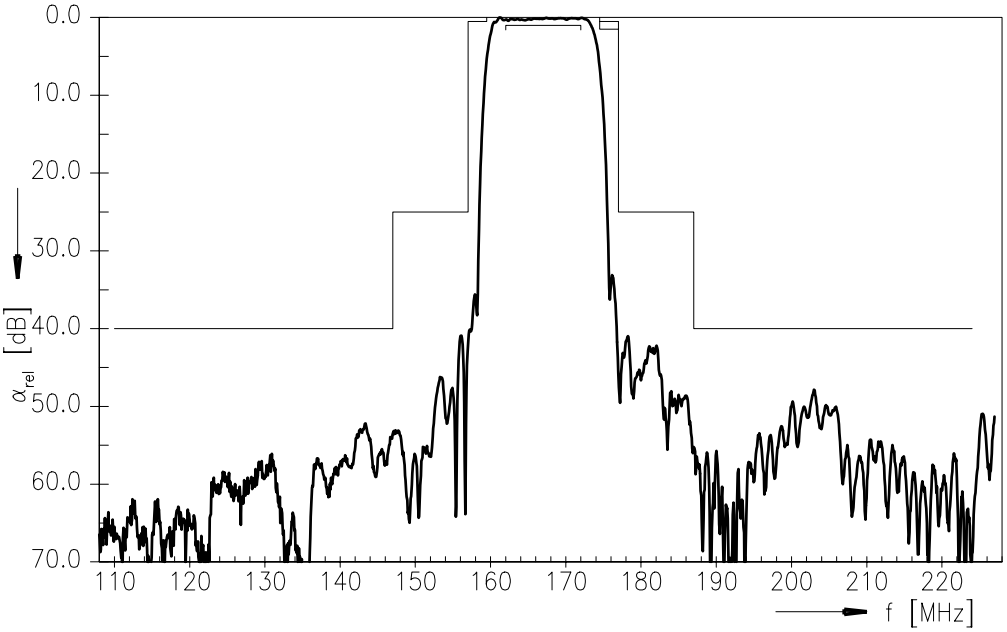
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200[1)]	V	machine model, 1 pulse
Input power	P_{IN}	10	dBm	
Input peak power	$P_{IN,peak}$	23	dBm	for max. 100 hours

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

Transfer function



Transfer function (wideband)



References

Type	B5060
Ordering code	B39171-B5060-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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