



SAW Components

SAW IF filter

WLL

Series/type:	B5251
Ordering code:	B39311B5251H810
Date:	May 03, 2012
Version:	2.0



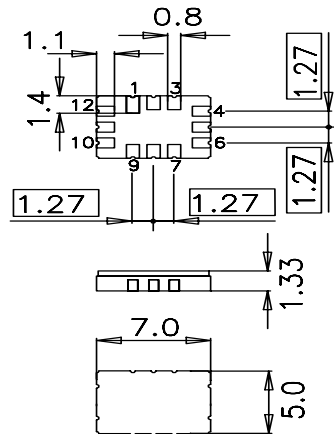
Application

- Low-loss IF filter for WLL
- Usable passband 41.0 MHz
- Single ended operation



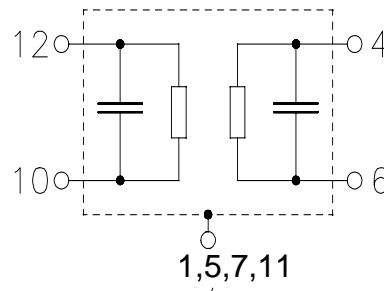
Features

- 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
- Moisture Sensitivity Level 1



Pin configuration

- 10, Input
- 12, Input ground
- 4, Output
- 6, Output ground
- 1,5,7,11 Case Ground
- 2,3,8,9 To be grounded





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Characteristics

Operating temperature range: $T = -40^{\circ}\text{C}$ to 85°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	—	307.2	—	MHz
Minimum insertion attenuation (including matching network)	α_{\min}	—	11	12.5	dB
Passband width					
$\alpha_{\text{rel}} \leq 1.2\ \text{dB}$	$B_{1.2\ \text{dB}}$	41	46.2	—	MHz
$\alpha_{\text{rel}} \leq 3\ \text{dB}$	$B_{3\ \text{dB}}$	43	48.0	—	MHz
Error vector magnitude $f_{N, \text{WCDMA}(k)} \pm 1.92\ \text{MHz}$		—	2	3	%
Amplitude ripple (p-p) $f_N \pm 20.5\ \text{MHz}$	$\Delta\alpha$	—	0.7	1.2	dB
Phase ripple (p-p) $f_N \pm 20.5\ \text{MHz}$	$\Delta\varphi$	—	6.2	10	deg
Absolute group delay $f_N \pm 20.5\ \text{MHz}$	τ	—	0.55	1.0	μs
Group delay ripple (p-p) $f_N \pm 20.5\ \text{MHz}$	$\Delta\tau$	—	30	100	ns
Relative attenuation (relative to α_{\min})	α_{rel}				
100.00 MHz ... 210.00 MHz		45	53	—	dB
210.00 MHz ... 275.00 MHz		40	50	—	dB
339.00 MHz ... 400.00 MHz		38	42	—	dB
400.00 MHz ... 600.00 MHz		45	52	—	dB
600.00 MHz ... 1000.0 MHz		45	68	—	dB
Temperature coefficient of frequency	TC_f	—	-75	—	ppm/K

¹⁾ $f_{N, \text{WCDMA}(k)} = 287.9\ \text{MHz} + k \cdot 5\ \text{MHz}; \quad k = (0, 1, 2, 3, 4, 5, 6, 7)$



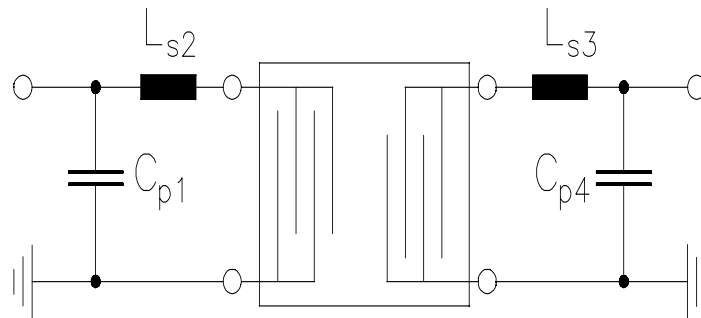
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Matching network to 50 Ω Input / 50 Ω Output :



Cp1=18pF
Ls2=8.2nH

Ls3= 9.5nH
Cp4=16pF

(matching element values depend on PCB layout)

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 in f _N ± 20.5 MHz	P _{IN}	10	dBm	



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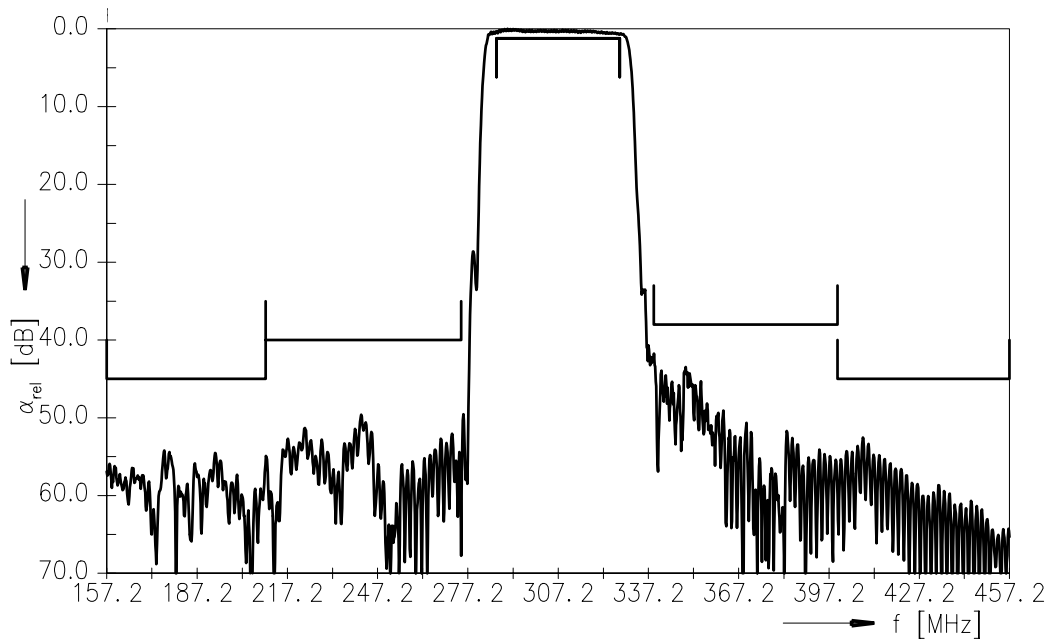
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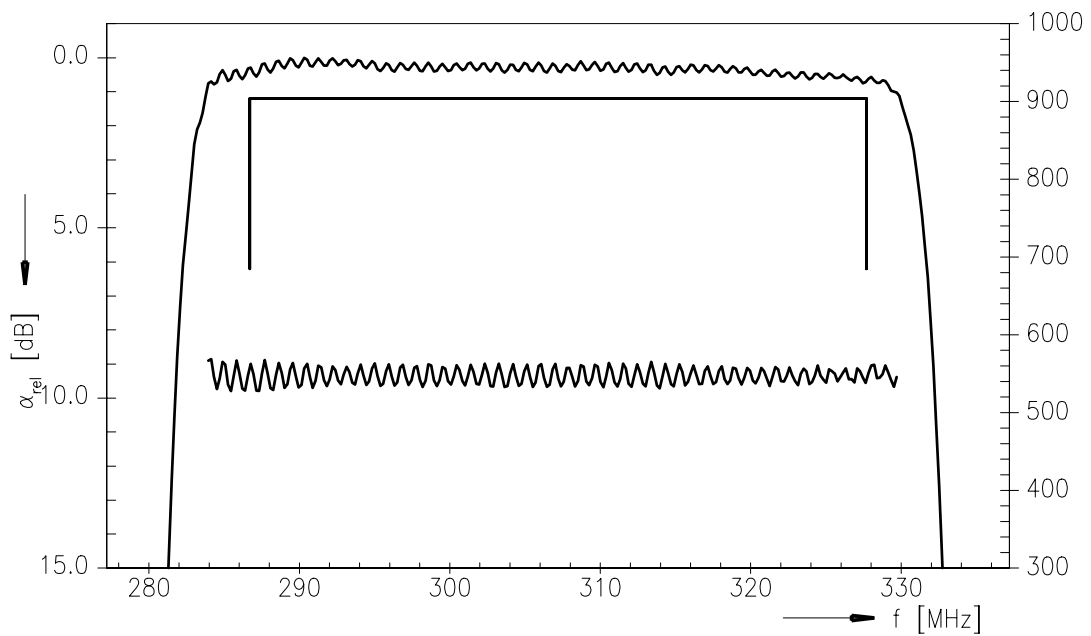
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SMD

Transfer function (Wide band)



Transfer function (Passband)



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



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References

Type	B5251
Ordering code	B39311B5251H810
Marking and package	C61157-A7-A103
Packaging	F61074-V8170-Z000
Date codes	L_1126
S-parameters	B5251_NB.s2p, B5251_WB.s2p see file header for port/in assignment table
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."
Matching coils	See Inductor pdf-catalog http://www.tdk.co.jp/tefe02/coil.htm#aname1 and Data Library for circuit simulation http://www.tdk.co.jp/etvcl/index.htm

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