SAW Components

SAW IF filter

WiMAX

Series/type:	**B5032**
Ordering code:	**B39461-B5032-H810**
Date:	Aug 30, 2006
Version:	2.1

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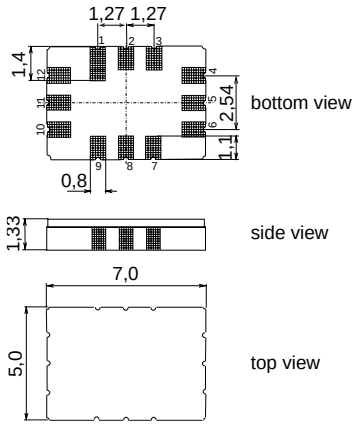
Application

- Low-loss IF filter for WiMAX
- Usable passband 10.4 MHz
- Balanced or unbalanced operation possible



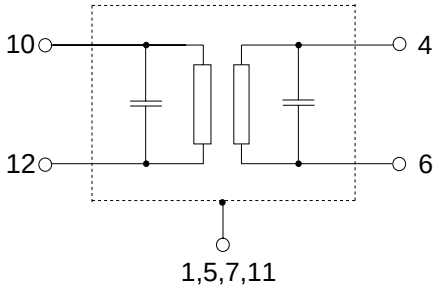
Features

- Package size 7.0 x 5.0 x 1.33 mm³
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.2 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 balanced input
■	4	Output
■	6	Output ground or balanced output
■	2, 3, 8, 9	To be grounded
■	1, 5, 7, 11	Case ground



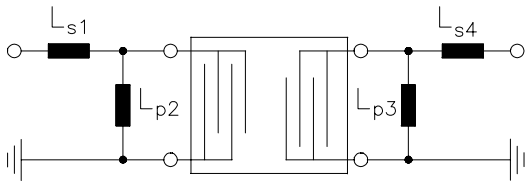
Characteristics

Operating temperature range: T = –40 to 90 °C
Terminating source impedance: Z_S = 50 Ω single ended or 200 Ω balanced and matching network
Terminating load impedance: Z_L = 50 Ω single ended or 200 Ω balanced and matching network

		min.	typ. @ 25 °C	max.	
Nominal frequency	f_N	—	456.0	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	8.7	11.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 2.9$ MHz		—	0.4	1.5	dB
$f_N \pm 5.2$ MHz		—	0.5	2.0	dB
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 5.2$ MHz		—	35	150	ns
Absolute group delay (at f_N)					
	τ	—	0.7	2.0	µs
Relative attenuation (relative to α_{min})	α_{rel}				
$f_N \pm$ 10.0 ... $f_N \pm$ 43.0 MHz		37[1)]	43	—	dB
411 - 413 MHz		40	50	—	dB
393 - 411 MHz		40	50	—	dB
343 - 393 MHz		42	50	—	dB
Average relative attenuation (relative to α_{min})	α_{avg}				
441.2 - 450.8 MHz		7.0	8.8	—	dB
461.2 - 470.8 MHz		7.0	9.1	—	dB
423.2 - 432.8 MHz		48[1)]	51	—	dB
479.2 - 488.8 MHz		49[1)]	52	—	dB
Temperature coefficient of frequency	TC_f	—	–18	—	ppm/K

1) for balanced operation mode only a minimum selectivity of 30 dB could be specified

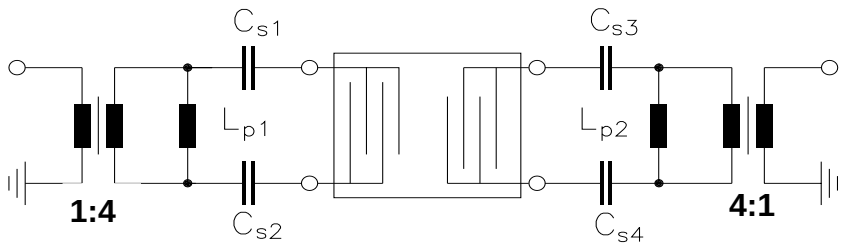
Matching network to 50 Ω single ended (element values depend on PCB layout)



L_{s1} = 33.0 nH
L_{p2} = 15.0 nH
L_{p3} = 15.0 nH
L_{s4} = 33.0 nH

Matching network to 200 Ω balanced (element values depend on PCB layout)

4:1 transformer is only required for measurement in a 50 Ω environment



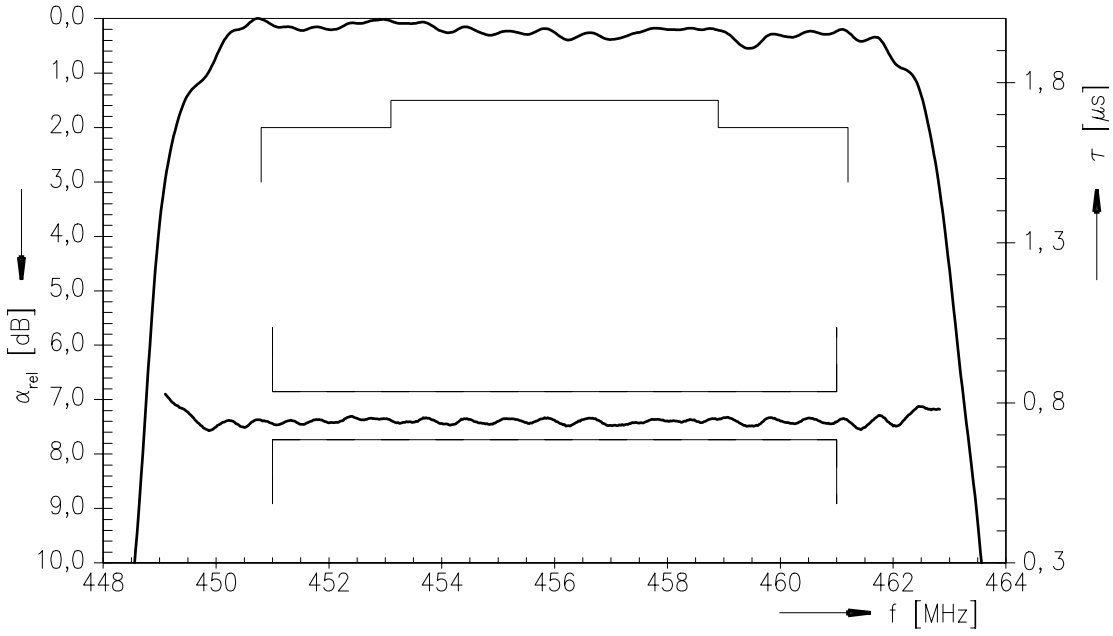
C_{s1}, C_{s2} not used
L_{p1} = 15 nH
C_{s3}, C_{s4} not used
L_{p2} = 15 nH

Maximum ratings

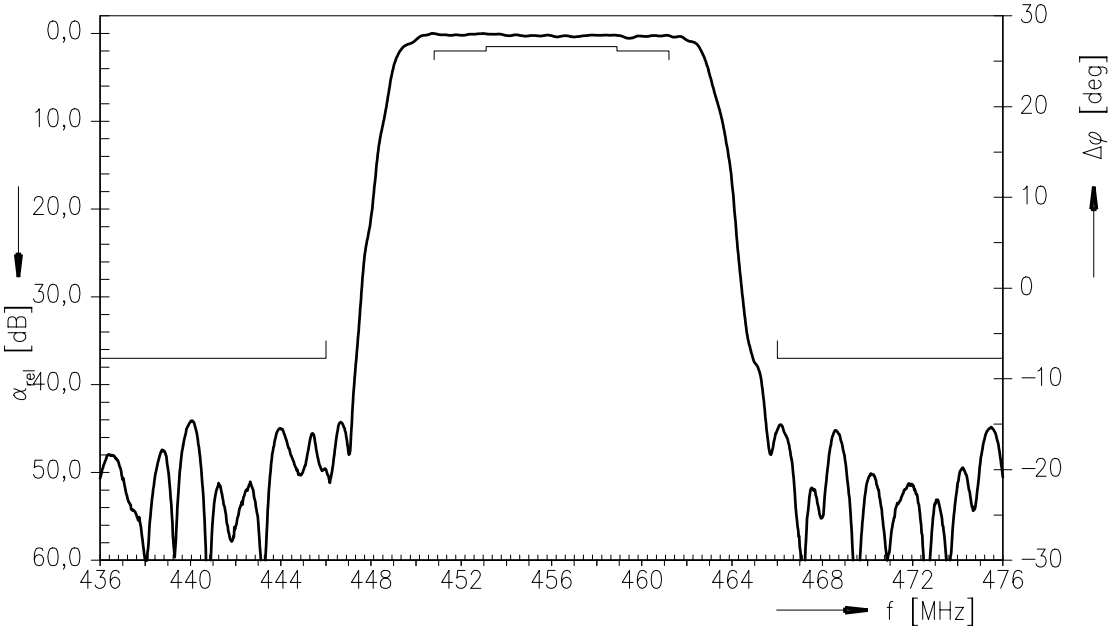
Operable temperature range	T	–40/+90	°C	
Storage temperature range	T_{stg}	–40/+90	°C	
DC voltage	V_{DC}	5	V	between input, output and ground
DC voltage	V_{DC}	0	V	between 10,12 and between 4,6
ESD voltage	V_{ESD}	200[1)]	V	machine model, 1 pulse
Input power	P_{IN}	0	dBm	

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

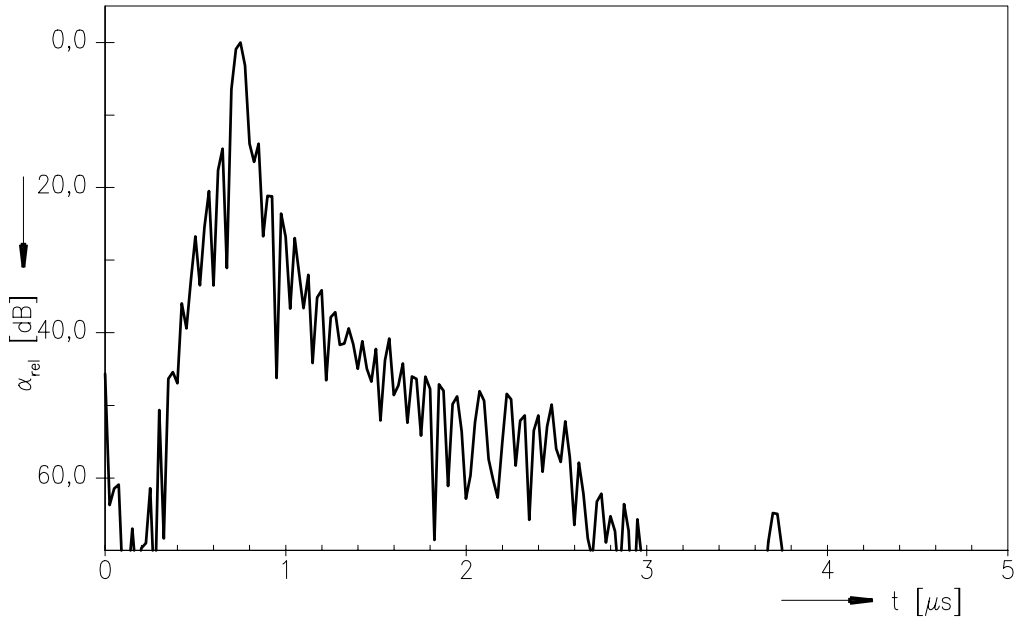
Normalized transfer function (pass band)



Transfer function (wide band)



Normalized time response



References

Type	B5032
Ordering code	B39461-B5032-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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