SAW Components

SAW Filter

WiMAX

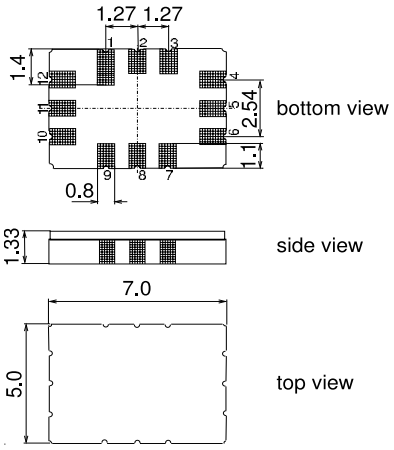
Series/Type:	**B5033**
Ordering code:	**B39561-B5033-H810**
Date:	Dec 19, 2005
Version:	2

Application

- Low-loss IF filter for WiMAX
- Usable bandwidth 3.7 MHz
- Temperature stable
- Ceramic SMD package

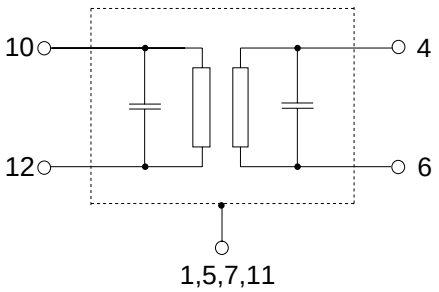
Features

- Package size 7.0 x 5.0 x 1.33 mm^3
- Package code QCC12E
- RoHS compatible
- Approx. weight 0.2 g
- Package for **S**urface **M**ount **T**echnology (**SMT**)
- Ni, gold-plated terminals



Pin configuration

■	10	Input
■	12	Input ground
■	4	Output
■	6	Output ground
■	2, 3, 8, 9	Ground
■	1, 5, 7, 11	Case ground



Characteristics

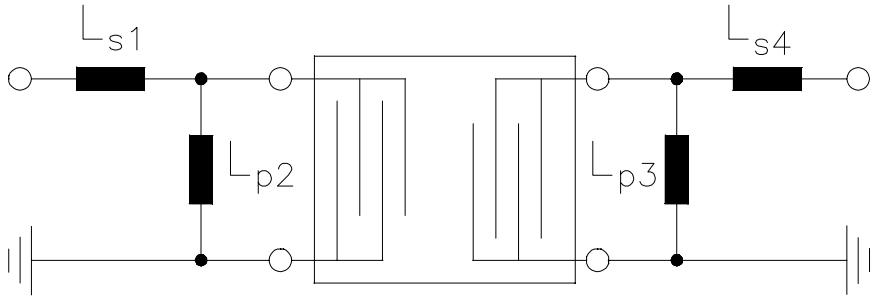
Operating temperature range: T = –40 ˚C to +85 ˚C
Terminating source impedance: Z_S = 50 Ω single ended and matching network
Terminating load impedance: Z_L = 50 Ω single ended and matching network

		min.	typ.	max.	
Nominal frequency	f_N	—	556.00	—	MHz
Minimum insertion attenuation (including matching network)	α_{min}	—	9.5	11.0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
$f_N \pm 1.70$ MHz		—	0.3	1.0	dB
$f_N \pm 1.85$ MHz		—	1.0	3.0	dB
Absolute group delay (at f_N)	τ	—	0.5	3.0	µs
Group delay ripple (p-p)	$\Delta\tau$				
$f_N \pm 1.70$ MHz		—	120	250	ns
Input and output return loss		7	14	—	dB
Impulse response attenuation(Time/Height values are relative to the main time response lobe)					
1-2 µs		15	33	—	dB
2-3 µs		30	45	—	dB
> 3 µs		40	55	—	dB
Relative attenuation (relative to α_{min})	α_{rel}				
1 MHz ... 356 MHz		30	70	—	dB
356 MHz ... 460 MHz		40	65	—	dB
460 MHz ... 516 MHz		50	58	—	dB
516 MHz ... 552.0 MHz		40	44	—	dB
552.0 MHz ... 552.65 MHz		18	28	—	dB
559.35 MHz ... 560.0 MHz		18	28	—	dB
560.0 MHz ... 565.0 MHz		37	40	—	dB
565.0 MHz ... 656 MHz		40	45	—	dB
656 MHz ... 946 MHz		30	50	—	dB
Temperature coefficient of frequency[1]	TC_f	—	–0.036	—	ppm/K²
Turnover temperature	T_0	—	30	—	˚C

[1] Temperature dependance of f_c: $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

Matching network to 50 Ω single ended

(element values depend on PCB layout)



L_{s1} = 22 nH

L_{p2} = 10 nH

L_{p3} = 10 nH

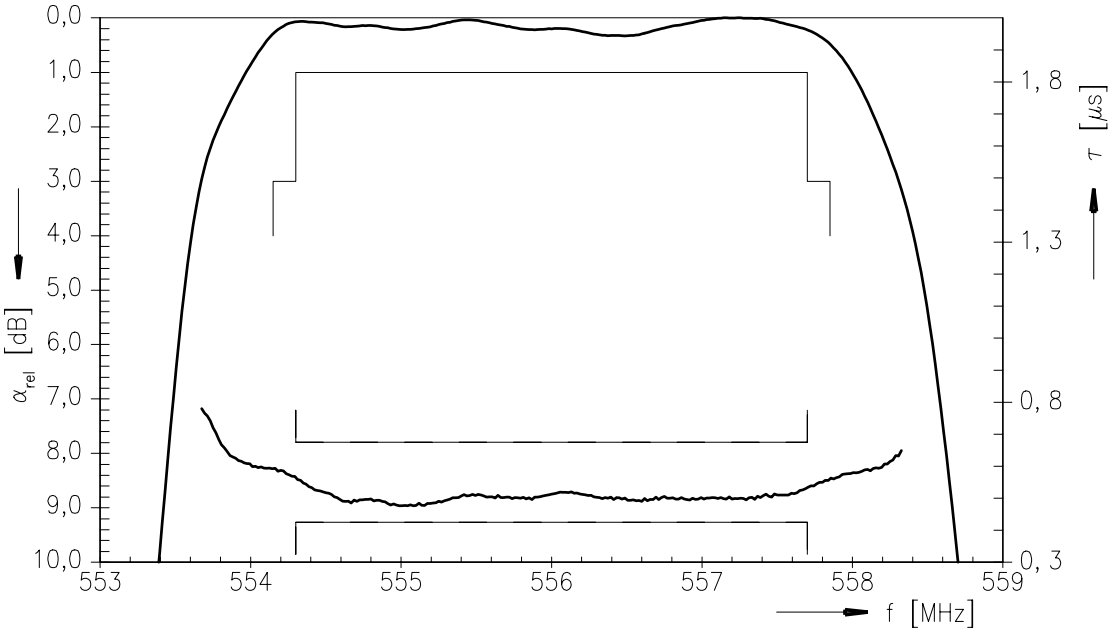
L_{s4} = 18 nH

Maximum ratings

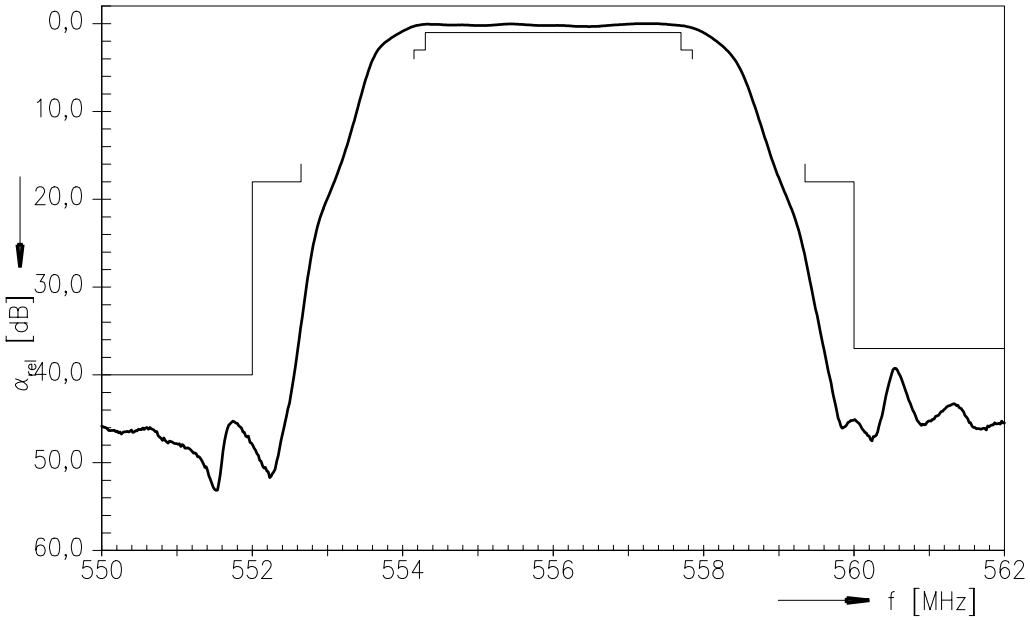
Operable temperature range	T	–40/+85	°C	
Storage temperature range	T_{stg}	–40/+85	°C	
DC voltage	V_{DC}	0	V	
ESD voltage	V_{ESD}	200[1)]	V	machine model, 1 pulse
Input power	P_{IN}	0	dBm	

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

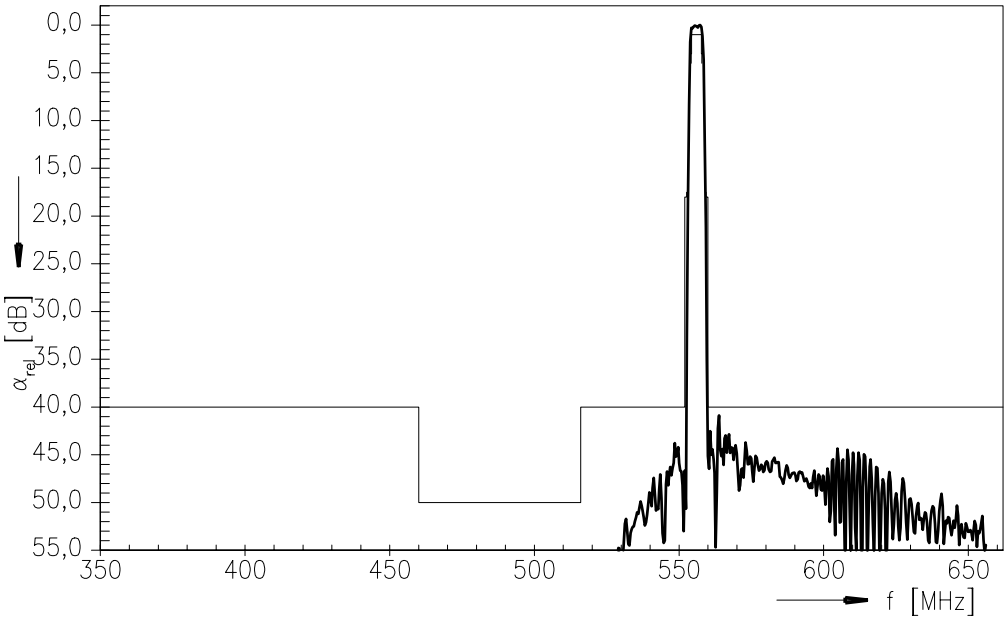
Transfer function



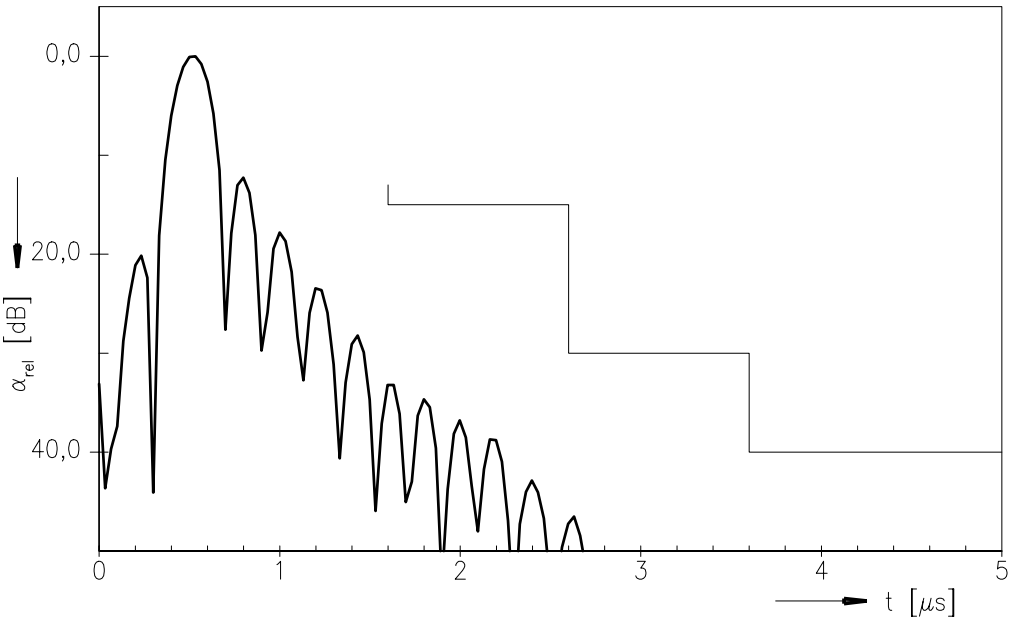
Transfer function (wideband)



Normalized transfer function



Transfer function (Impulse response)



Type	B5033	
Ordering code	B39561-B5033-H810	
Marking and Package	C61157-A7-A103	
Packaging	F61074-V8170-Z000	
Date Codes	L_1126	
S-Parameters		
Soldering profile	S_6001	

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Published by EPCOS AG
Surface Acoustic Wave Components Division
P.O. Box 80 17 09, 81617 Munich, GERMANY

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