EPCOS

SAW Components

Preliminary Data LM42A

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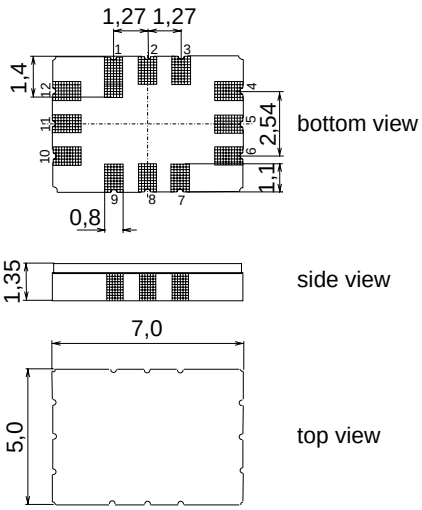
Ceramic SMD package QCC12E

Features

- Low-loss filter for WiMAX
- Usable bandwidth 3,7 MHz
- Low insertion attenuation
- Package for Surface Mounted Technology (SMT)



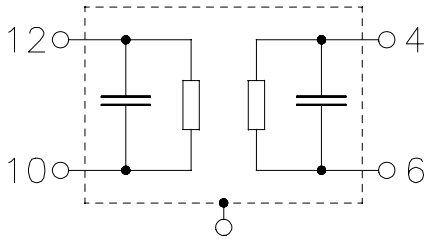
Terminals

- Gold plated

Dimensions in mm, approx. weight 0,2 g

Pin configuration

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



Type	Ordering code	Marking and Package according to	Packing according to
LM42A		C61157-A7-A103	F61074-V8170-Z000

Electrostatic **S**ensitive **D**evice (**ESD**)

Maximum ratings

Operable temperature range	T	-40/ +85	˚C	
Storage temperature range	T_{stg}	-40/ +85	˚C	
DC voltage	V_{DC}	0	V	
Source power	P_S	10	dBm	10 years
Peak source power	P_S	13	dBm	peak < 1s

Preliminary Data

Characteristics

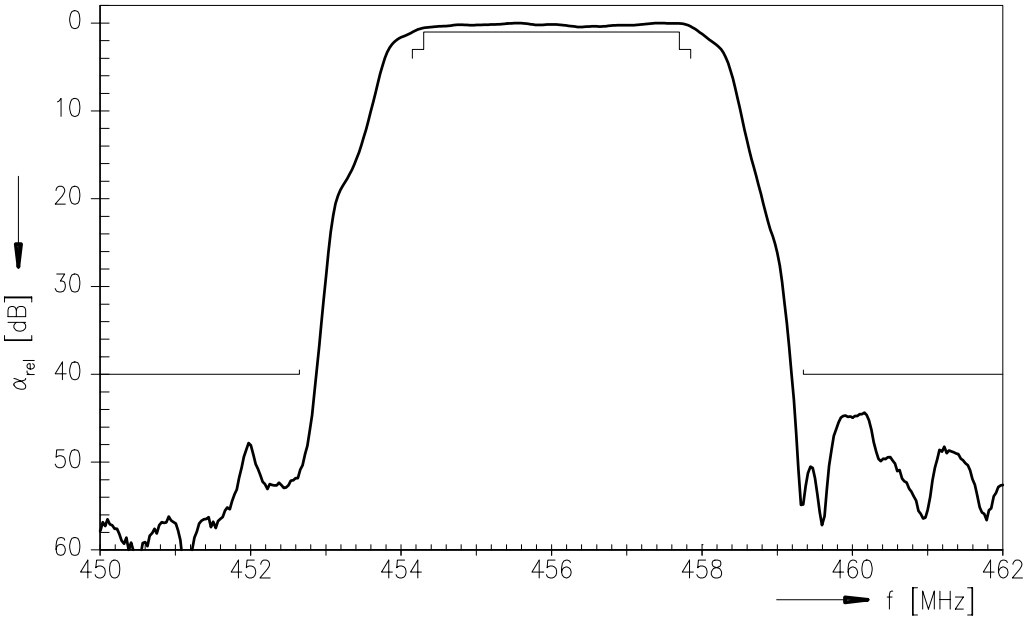
Operating temperature: T = -40 ... +85 ˚C
Terminating source impedance: 200 Ω balanced and matching network
Terminating load impedance: 200 Ω balanced and matching network

			min.	typ.	max.	
Nominal frequency		f_N	—	456,00	—	MHz
Minimum insertion attenuation (including matching network)		α_{min}	—	8,5	10,0	dB
Amplitude ripple (p-p)		$\Delta\alpha$				
	$f_N \pm 1{,}7$ MHz		—	0,6	1,0	dB
	$f_N \pm 1{,}85$ MHz		—	1,5	3,0	dB
Absolute group delay (at f_N)		τ	—	0,55	3,0	µs
Group delay ripple (p-p)		$\Delta\tau$				
	$f_N \pm 1{,}7$ MHz		—	120	250	ns
Return loss	$f_N \pm 1{,}7$ MHz Input		8	12	—	dB
	Output		10	14	—	dB
Impulse response attenuation (Time/Height values are relative to the main time response lobe)						
	1-2 µs		20	30	—	dB
	2-3 µs		35	38	—	dB
	> 3 µs		45	49	—	dB
Relative attenuation (relative to α_{min})		α_{rel}				
	1 MHz ... 256 MHz		30	70	—	dB
	256 MHz ... 360 MHz		40	70	—	dB
	360 MHz ... 416,0 MHz		50	64	—	dB
	416 MHz ... 452,65 MHz		40	46	—	dB
	459,35 MHz ... 656 MHz		40	44	—	dB
	656 MHz ... 946 MHz		30	44	—	dB
Temperature coefficient of frequency [1]		TC_f	—	–0,036	—	ppm/K²
Turnover temperature		T_0	—	30	—	˚C

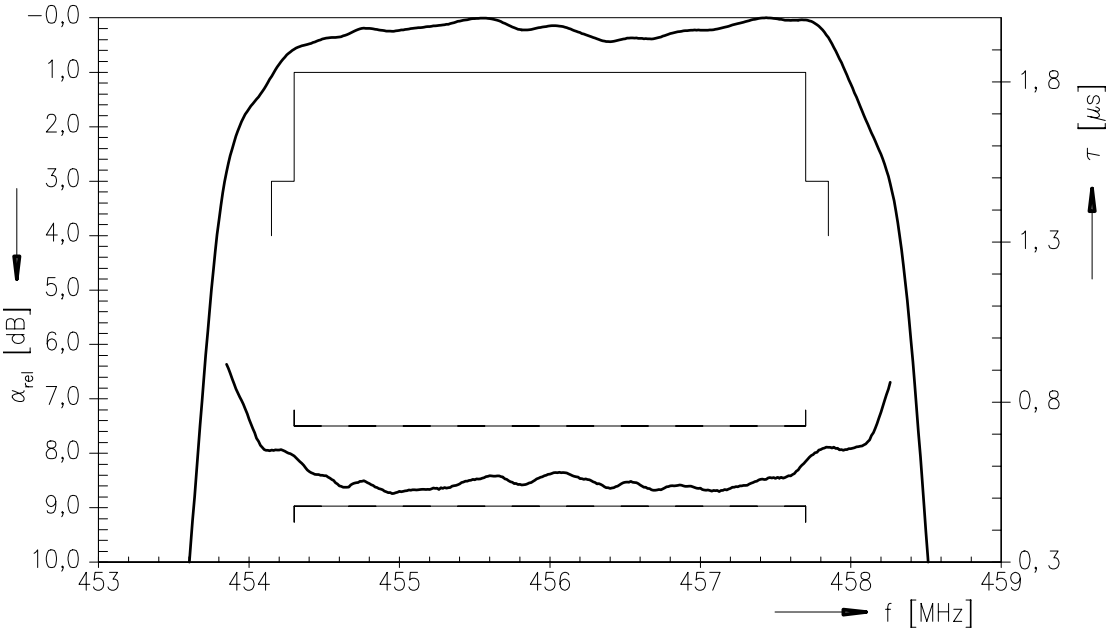
[1] Temperature dependance of f_c: $f_c(T_A) = f_c(T_0)(1 + TC_f(T_A - T_0)^2)$

Preliminary Data

Normalized transfer function

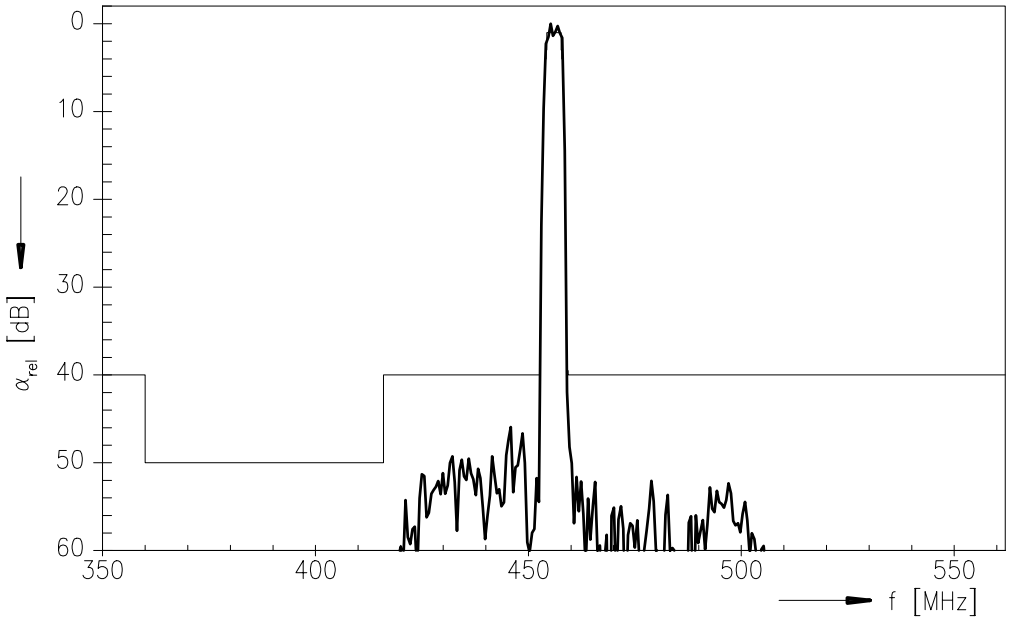


Normalized transfer function (pass band)

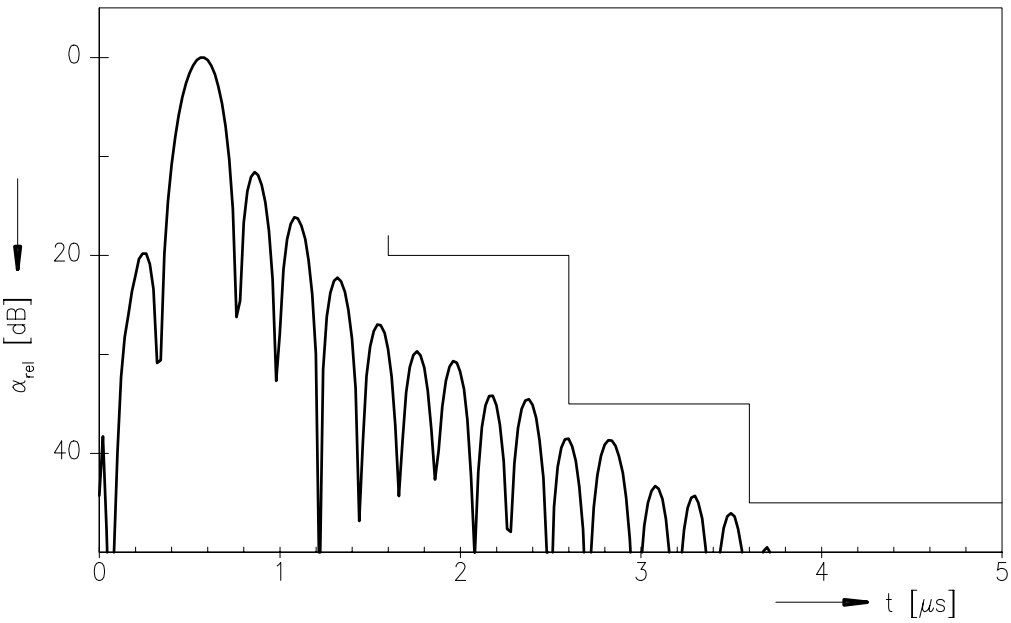


Preliminary Data

Normalized transfer function



Transfer function (Impulse response)



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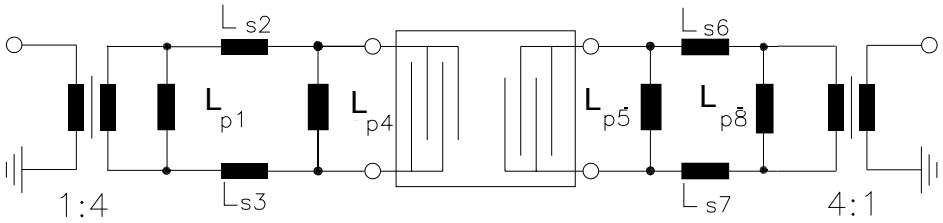
Matching network to 200 Ω balanced

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

(element values depend on PCB layout)



L_{p1} = 100 nH L_{p4} = 22 nH L_{s6} = L_{s7}= 18 nH

L_{s2} = L_{s3}= 33 nH L_{p5}= 27 nH L_{p8} = 62 nH

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