



SAW Components

Preliminary Data LM42A

Data Sheet

A large, stylized, 3D-rendered graphic of the EPCOS logo. The word "EPCOS" is written in a bold, white, sans-serif font, appearing to be part of a larger, glowing, metallic structure that resembles a stylized globe or a complex geometric shape. The background is dark and textured.



SAW Components	LM42A
Low-Loss Filter	456,00 MHz

Preliminary Data

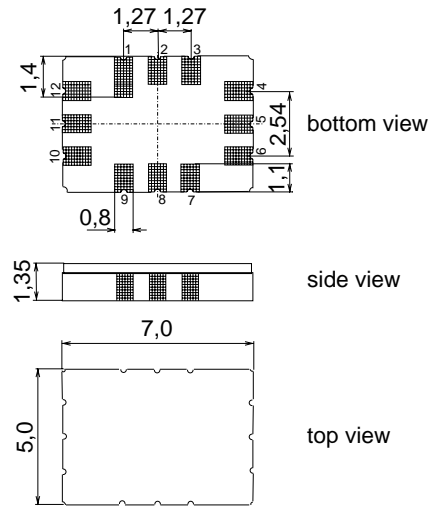
Features

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

Terminals

- Gold plated

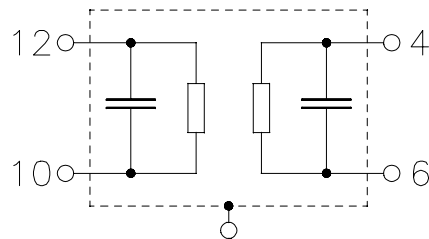
Ceramic SMD package QCC12E



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 Sensitive Device (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


SAW Components
LM42A
Low-Loss Filter
456,00 MHz
Preliminary Data
Characteristics

Operating temperature: $T = -40 \dots +85 \text{ }^\circ\text{C}$
 Terminating source impedance: 200 Ω balanced and matching network
 Terminating load impedance: 200 Ω balanced and matching network

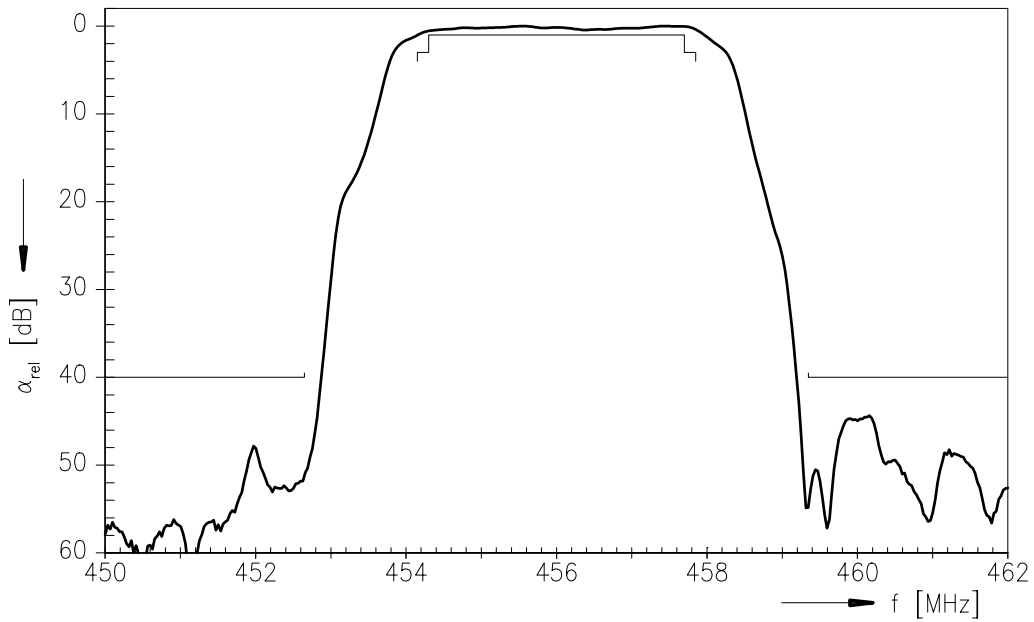
		min.	typ.	max.	
Nominal frequency	f_N	—	456,00	—	MHz
Minimum insertion attenuation (including matching network)	α_{\min}	—	8,5	10,0	dB
Amplitude ripple (p-p)	$\Delta\alpha$				
	$f_N \pm 1,7 \text{ MHz}$	—	0,6	1,0	dB
	$f_N \pm 1,85 \text{ MHz}$	—	1,5	3,0	dB
Absolute group delay (at f_N)	τ	—	0,55	3,0	μs
Group delay ripple (p-p)	$\Delta\tau$				
	$f_N \pm 1,7 \text{ MHz}$	—	120	250	ns
Return loss	$f_N \pm 1,7 \text{ MHz}$				
	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/K ²
Turnover temperature	T_0	—	30	—	$^\circ\text{C}$

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

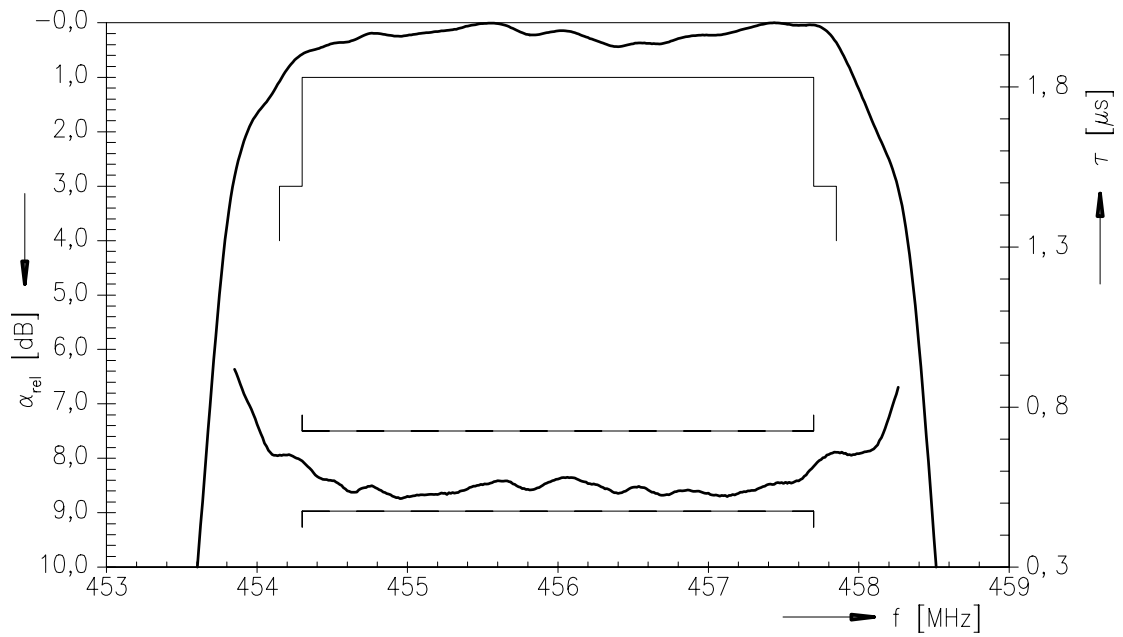


Preliminary Data

Normalized transfer function



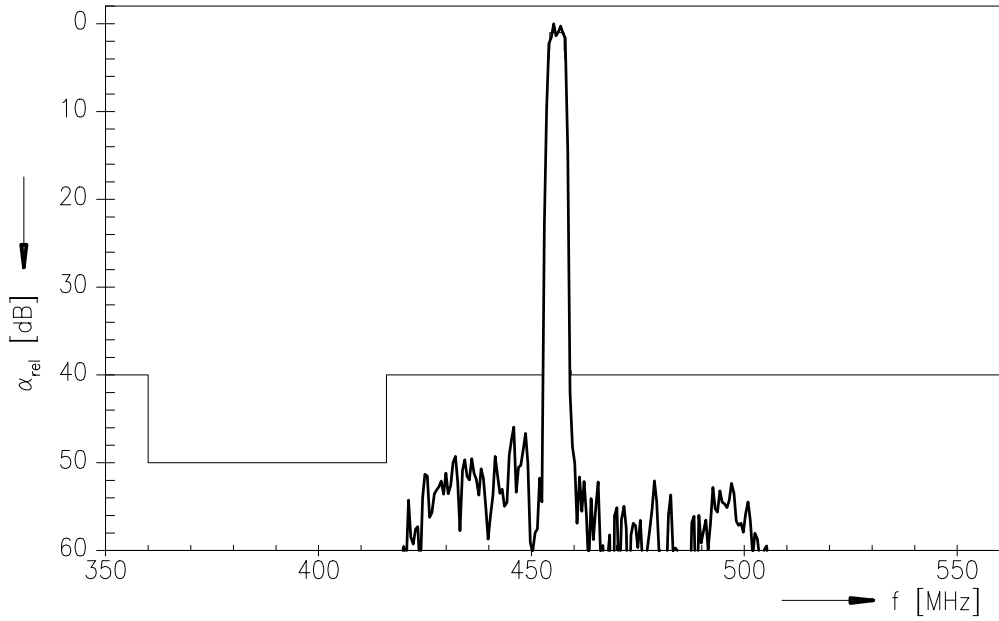
Normalized transfer function (pass band)



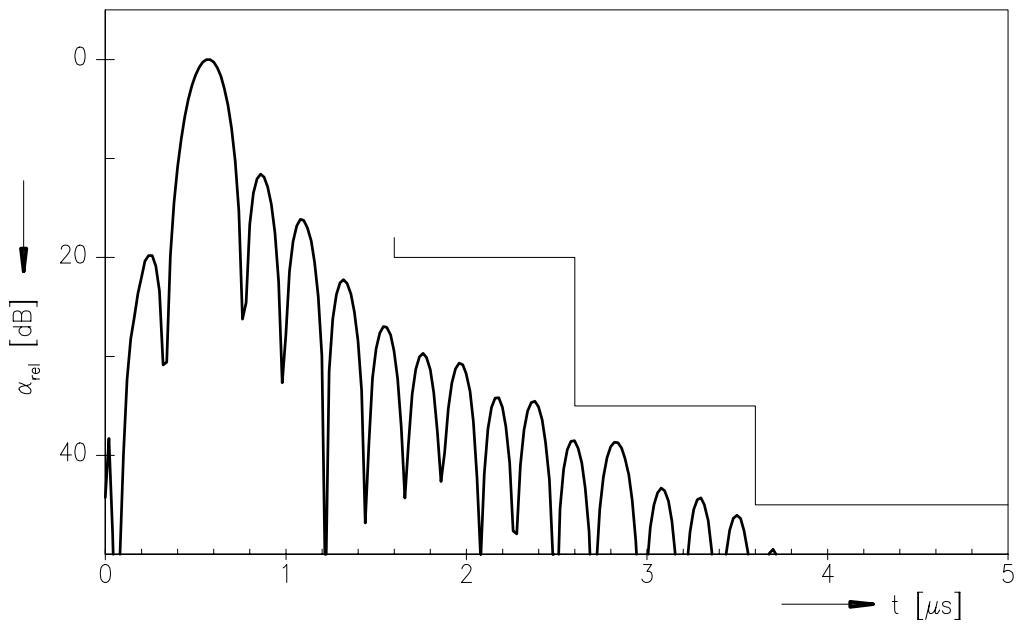


Preliminary Data

Normalized transfer function



Transfer function (Impulse response)



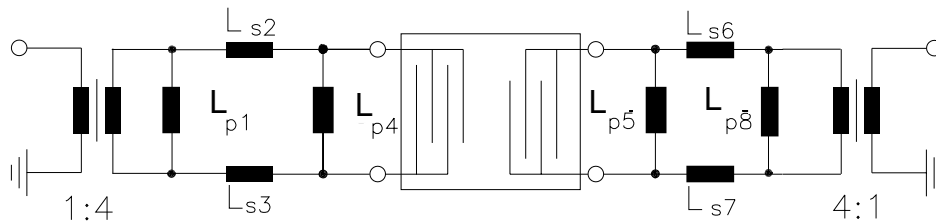


Preliminary Data

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)



$$L_{p1} = 100 \text{ nH}$$

$$L_{p4} = 22 \text{ nH}$$

$$L_{s6} = L_{s7} = 18 \text{ nH}$$

$$L_{s2} = L_{s3} = 33 \text{ nH}$$

$$L_{p5} = 27 \text{ nH}$$

$$L_{p8} = 62 \text{ nH}$$

Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW MC

P.O. Box 80 17 09, 81617 Munich, GERMANY

© EPCOS AG 2004. Reproduction, publication and dissemination of this brochure and the information contained therein without EPCOS' prior express consent is prohibited.

Purchase orders are subject to the General Conditions for the Supply of Products and Services of the Electrical and Electronics Industry recommended by the ZVEI (German Electrical and Electronic Manufacturers' Association), unless otherwise agreed.

This brochure replaces the previous edition.

For questions on technology, prices and delivery please contact the Sales Offices of EPCOS AG or the international Representatives.

Due to technical requirements components may contain dangerous substances. For information on the type in question please also contact one of our Sales Offices.