



SAW Components

Data Sheet X 9650 M





SAW Components	X 9650 M
Bandpass Filter	44,00 MHz

Data Sheet

Standard

- DVB-DAVIC

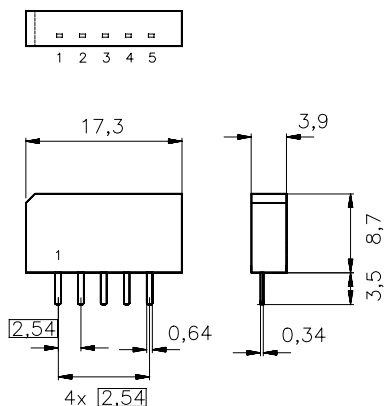
Plastic package **SIP5K**

Features

- Bandpass filter for digital cable TV with two channels
- Channel 1: 3dB bandwidth 1,8 MHz
- Channel 2: 3dB bandwidth 1,1 MHz
- Constant group delay

Terminals

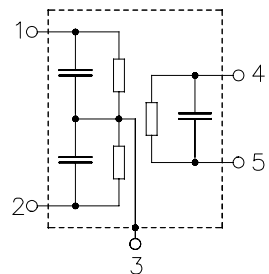
- Tinned CuFe alloy



Dimensions in mm, approx. weight 1,0 g

Pin configuration

- | | |
|---|-----------------------|
| 1 | Input |
| 2 | Switching input |
| 3 | Chip carrier - ground |
| 4 | Output |
| 5 | Output |



Type	Ordering code	Marking and package according to	Packing according to
X 9650 M	B39440-X9650-M100	C61157-A1-A15	F61074-V8067-Z000

Maximum ratings

Operable temperature range	T_A	-25/+65	°C	between any terminals
Storage temperature range	T_{stg}	-40/+85	°C	
DC voltage	V_{DC}	5	V	
AC voltage	V_{pp}	10	V	


SAW Components
X 9650 M
Bandpass Filter
44,00 MHz
Data Sheet
Characteristics of channel 1 (switching input pin 2 connected to ground pin 3)

Reference temperature: $T_A = 25 (45) ^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \Omega$
 Terminating load impedance: $Z_L = 2 \text{ k}\Omega \parallel 3 \text{ pF}$

		min.	typ.	max.	
Center frequency (center between 3 dB points)	f_C	—	44,00	—	MHz
Insertion attenuation Reference level for the following data	α 44,06 (44,00) MHz	13,0	14,5	16,0	dB
Pass bandwidth					
$\alpha_{\text{rel}} \leq 1 \text{ dB}$	$B_{1\text{dB}}$	—	1,6	—	MHz
$\alpha_{\text{rel}} \leq 3 \text{ dB}$	$B_{3\text{dB}}$	—	1,8	—	MHz
$\alpha_{\text{rel}} \leq 30 \text{ dB}$	$B_{30\text{dB}}$	—	2,7	—	MHz
Relative attenuation	α_{rel}				
Lower sidelobe					
35,06 ... 40,26 (35,00 ... 40,20) MHz		38,0	43,0	—	dB
40,26 ... 42,56 (40,20 ... 42,50) MHz		32,0	37,0	—	dB
Upper sidelobe					
45,56 ... 48,66 (45,50 ... 48,60) MHz		24,0	30,0	—	dB
48,66 ... 55,06 (48,60 ... 55,00) MHz		36,0	40,0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
43,16 ... 44,96 (43,10 ... 44,90) MHz		—	50	—	ns
Impedance at 44,06 MHz					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	0,9 \parallel 13,3	—	k Ω \parallel pF
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	0,8 \parallel 6,1	—	k Ω \parallel pF
Temperature coefficient of frequency	TC_f	—	-72	—	ppm/K



SAW Components

X 9650 M

Bandpass Filter

44,00 MHz

Data Sheet

Characteristics of channel 2 (switching input pin 2 connected to input pin 1)

Reference temperature: $T_A = 25 (45) \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$
 Terminating load impedance: $Z_L = 2 \text{ k}\Omega \parallel 3 \text{ pF}$

		min.	typ.	max.	
Center frequency (center between 3 dB points)	f_C	—	44,00	—	MHz
Insertion attenuation Reference level for the following data	α 44,06 (44,00) MHz	13,5	15,0	16,5	dB
Pass bandwidth					
$\alpha_{rel} \leq 1 \text{ dB}$	B_{1dB}	—	0,8	—	MHz
$\alpha_{rel} \leq 3 \text{ dB}$	B_{3dB}	—	1,2	—	MHz
$\alpha_{rel} \leq 30 \text{ dB}$	B_{30dB}	—	2,4	—	MHz
Relative attenuation	α_{rel}				
Lower sidelobe 35,06 ... 42,66 (35,00 ... 42,60) MHz		34,0	39,0	—	dB
Upper sidelobe 45,36 ... 47,36 (45,30 ... 47,30) MHz		25,0	29,0	—	dB
47,36 ... 55,06 (47,30 ... 55,00) MHz		34,0	39,0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
43,46 ... 44,66 (43,40 ... 44,60) MHz		—	50	—	ns
Impedance at 44,06 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	0,5 \parallel 18,1	—	k Ω \parallel pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	0,8 \parallel 6,1	—	k Ω \parallel pF
Temperature coefficient of frequency	TC_f	—	-72	—	ppm/K



SAW Components

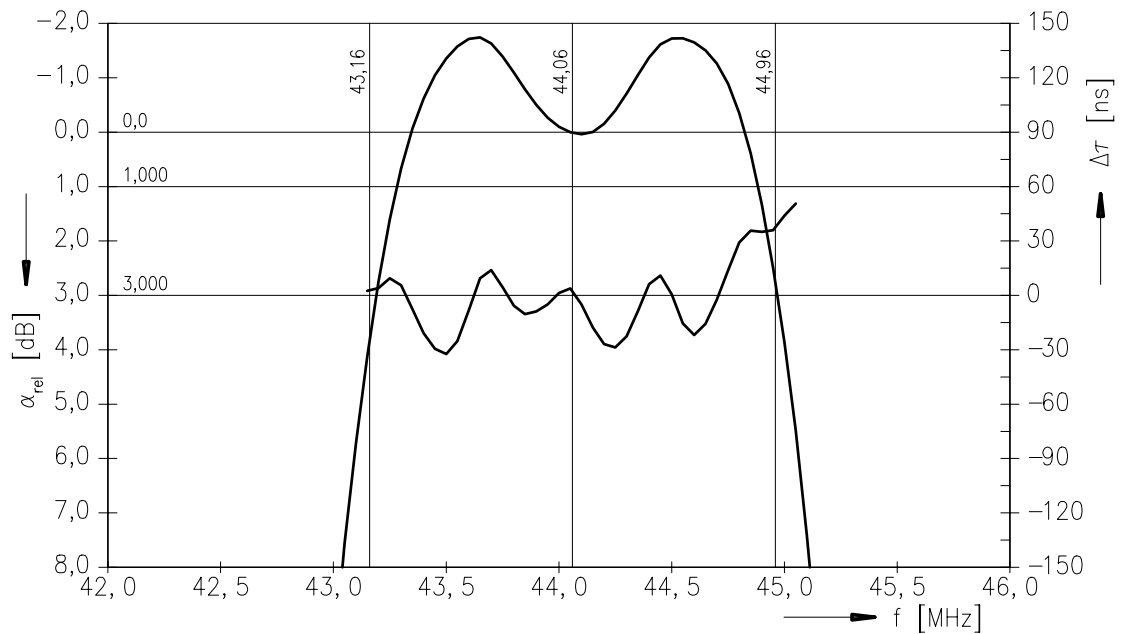
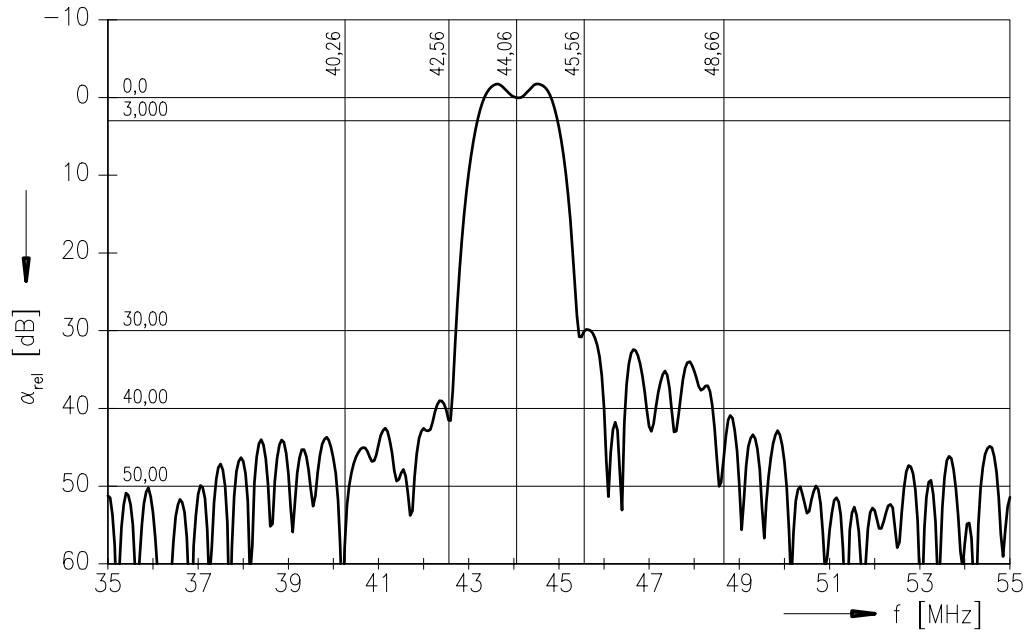
X 9650 M

Bandpass Filter

44,00 MHz

Data Sheet

Frequency response of channel 1 (switching input pin 2 connected to ground pin 3)





SAW Components

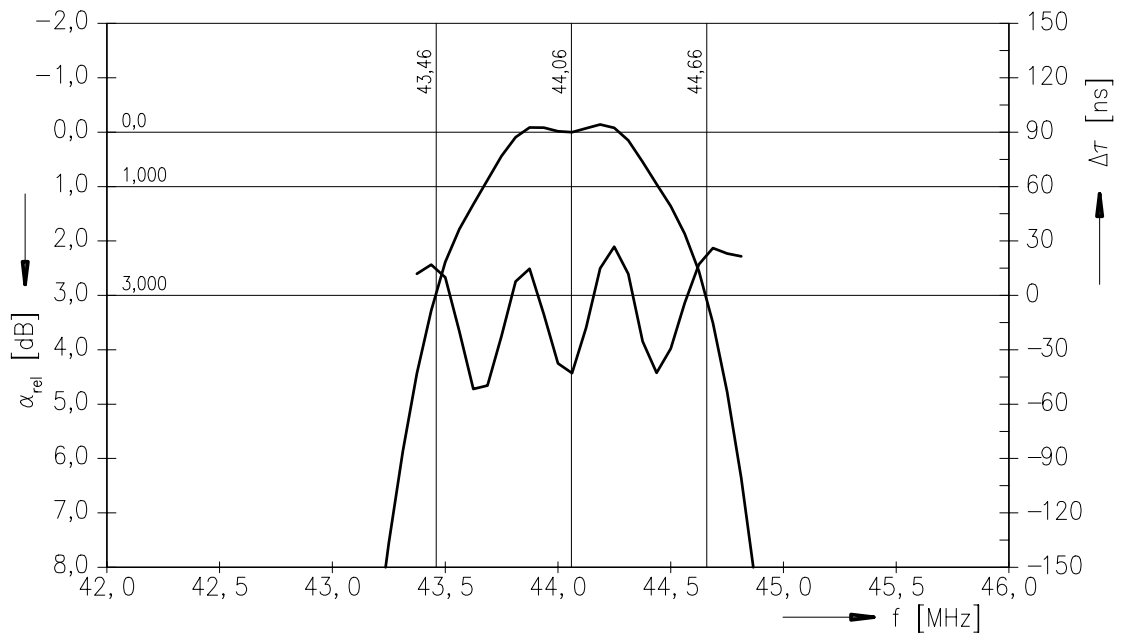
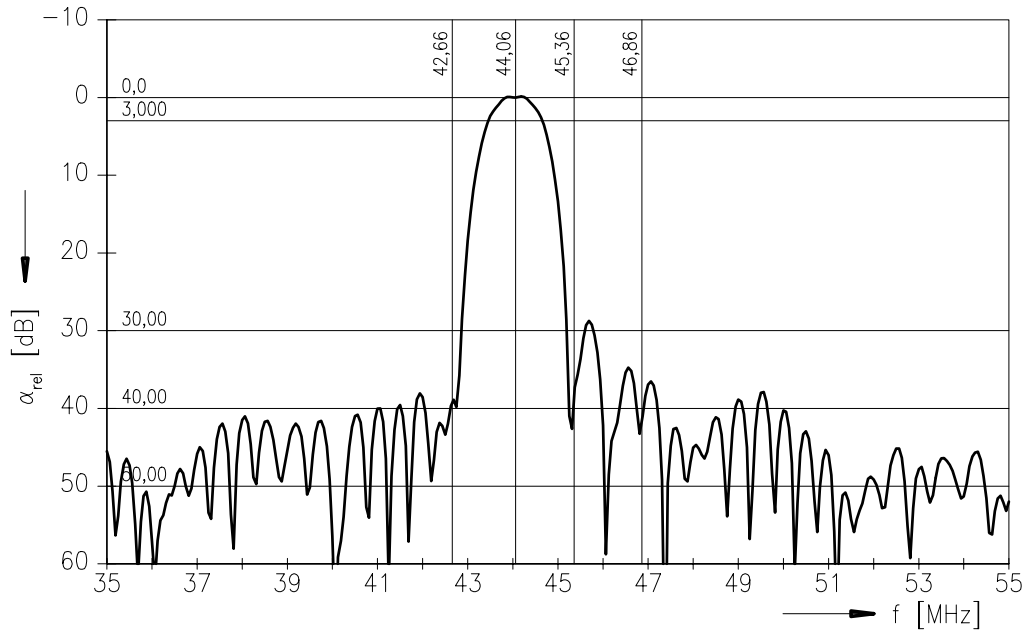
X 9650 M

Bandpass Filter

44,00 MHz

Data Sheet

Frequency response of channel 2 (switching input pin 2 connected to input pin 1)





SAW Components

X 9650 M

Bandpass Filter

44,00 MHz

Data Sheet

Published by EPCOS AG

Surface Acoustic Wave Components Division, SAW CE MM PD

P.O. Box 80 17 09, D-81617 München

© EPCOS AG 2001. All Rights Reserved.

As far as patents or other rights of third parties are concerned, liability is only assumed for components per se, not for applications, processes and circuits implemented within components or assemblies.

The information describes the type of component and shall not be considered as assured characteristics.

Terms of delivery and rights to change design reserved.

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.