EPCOS

SAW Components

Data Sheet X 9650 M

Data Sheet

Standard

- DVB-DAVIC

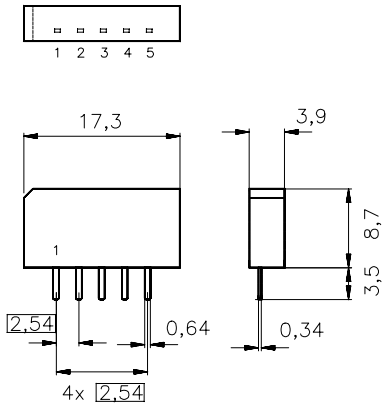
Features

- 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

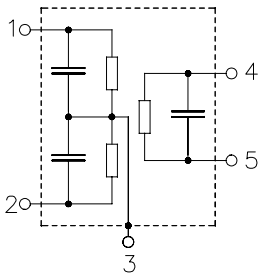
Plastic package **SIP5K**



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

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

Reference temperature: T_A = 25 (45) ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ ‖ 3 pF

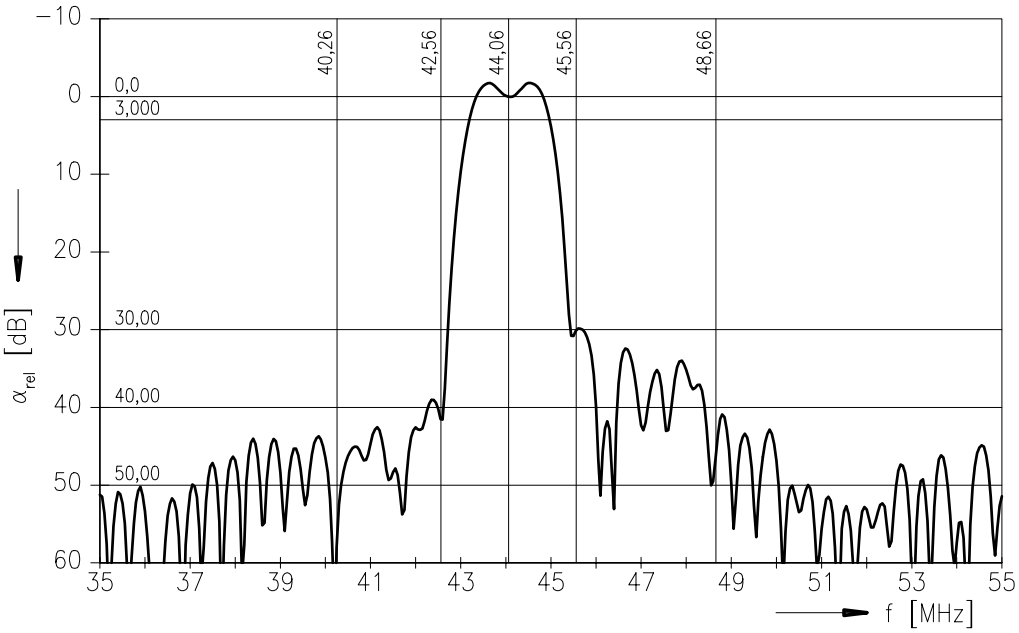
		min.	typ.	max.	
Center frequency (center between 3 dB points)	f_C	—	44,00	—	MHz
Insertion attenuation	α				
Reference level for the following data 44,06 (44,00) MHz		13,0	14,5	16,0	dB
Pass bandwidth					
α_{rel} ≤1 dB	B_{1dB}	—	1,6	—	MHz
α_{rel} ≤3 dB	B_{3dB}	—	1,8	—	MHz
α_{rel} ≤30 dB	B_{30dB}	—	2,7	—	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)	Δτ				
43,16 ... 44,96 (43,10 ... 44,90) MHz		—	50	—	ns
Impedance at 44,06 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	0,9 ‖ 13,3	—	kΩ ‖ pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	0,8 ‖ 6,1	—	kΩ ‖ pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

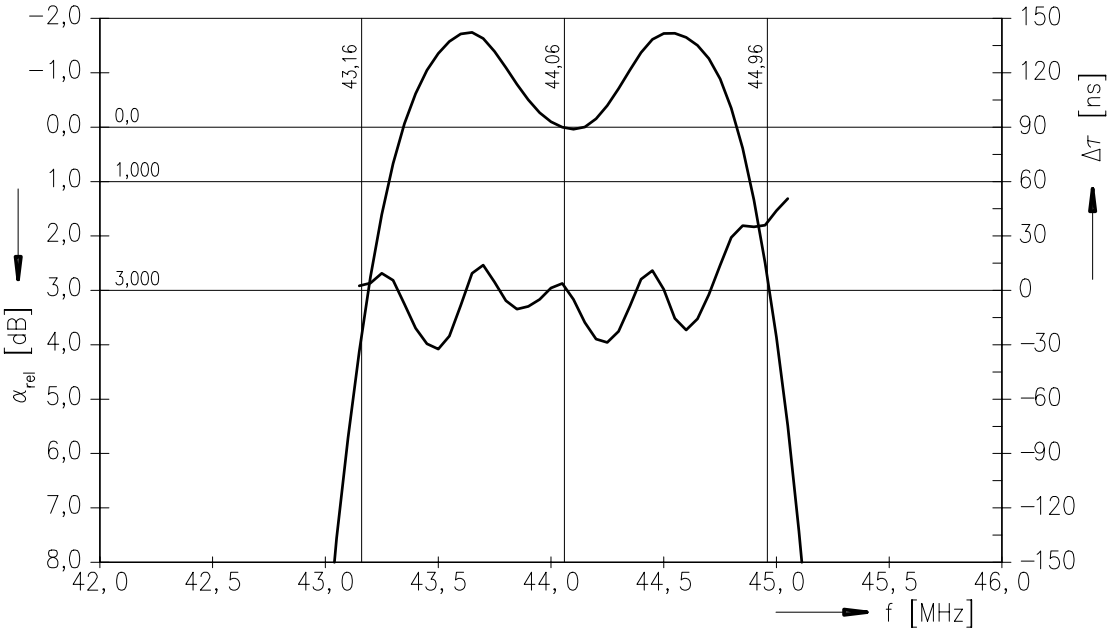
Characteristics of channel 2 (switching input pin 2 connected to input pin 1)

Reference temperature: T_A = 25 (45) ˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ ‖ 3 pF

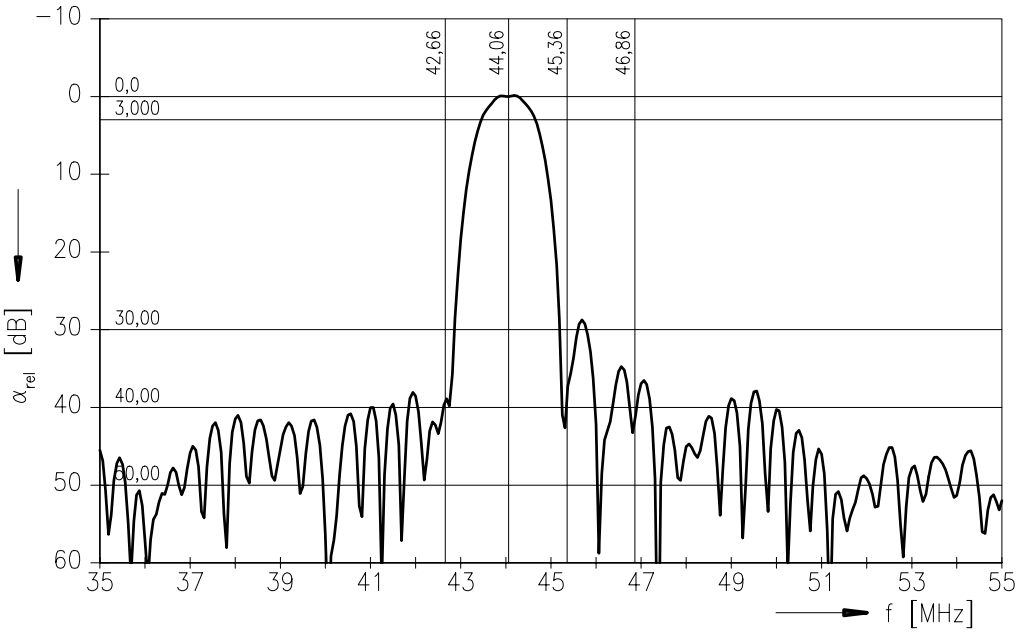
		min.	typ.	max.	
Center frequency (center between 3 dB points)	f_C	—	44,00	—	MHz
Insertion attenuation	α				
Reference level for the following data 44,06 (44,00) MHz		13,5	15,0	16,5	dB
Pass bandwidth					
α_{rel} ≤1 dB	B_{1dB}	—	0,8	—	MHz
α_{rel} ≤3 dB	B_{3dB}	—	1,2	—	MHz
α_{rel} ≤30 dB	B_{30dB}	—	2,4	—	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)	Δτ				
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 ‖ 18,1	—	kΩ ‖ pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	0,8 ‖ 6,1	—	kΩ ‖ pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

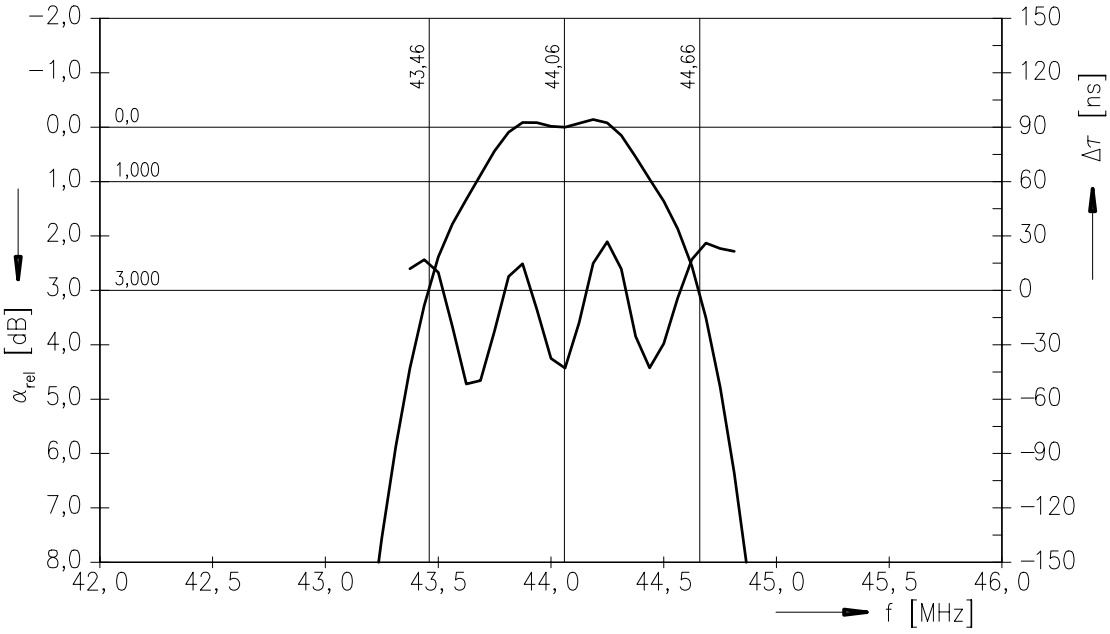
Frequency response of channel 1 (switching input pin 2 connected to ground pin 3)





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





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