Bandpass Filters for Digital Terrestrial TV Applications

Series/Type: **X7251D**

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39362X7251D100	X7251N	2004-07-23	2004-09-30	

For further information please contact your nearest EPCOS sales office, which will also support you in selecting a suitable substitute. The addresses of our worldwide sales network are presented at www.epcos.com/sales.

EPCOS

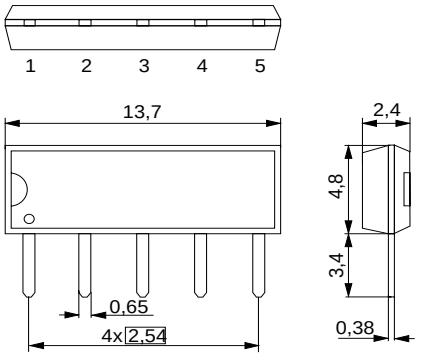
SAW Components

Data Sheet X 7251 D

Duroplast package **SIP5D**

Features

- IF filter for digital TV
- Switchable between two bandwidths
- Optimized for cascade of two devices
- Standard IC package



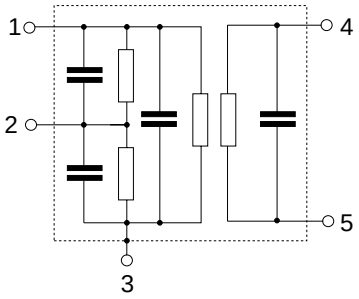
Dimensions in mm, approx. weight 0,5 g

Terminals

- Tinned CuFe alloy

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 7251 D	B39362-X7251-N201	C61157-A1-A21	F61074-V8049-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 pin 2 connected to ground)

Reference temperature: T_A = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ || 3 pF

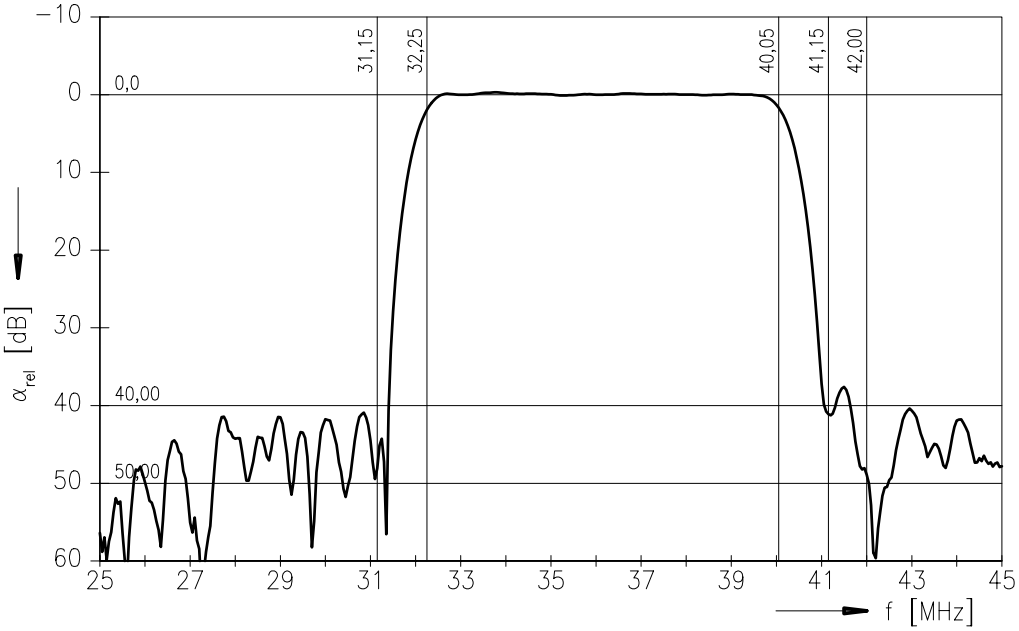
		min.	typ.	max.	
Insertion attenuation	α				
Reference level for the following data 36,17 MHz		19,5	21,0	22,5	dB
Pass bandwidth					
$\alpha_{rel} \leq$ 1,5 dB	$B_{1,5dB}$	7,4	7,7	8,0	MHz
$\alpha_{rel} \leq$ 3 dB	B_{3dB}	7,7	8,0	8,3	MHz
$\alpha_{rel} \leq$ 15 dB	B_{15dB}	8,6	8,9	9,2	MHz
$\alpha_{rel} \leq$ 30 dB	B_{30dB}	8,8	9,4	10,0	MHz
Relative attenuation	α_{rel}				
Lower sidelobe 25,00 ... 31,15 MHz		35,0	41,0		dB
Upper sidelobe 41,15 ... 42,00 MHz		31,0	37,0		dB
42,00 ... 45,00 MHz		37,0	44,0		dB
Reflected wave signal suppression					
1,1 µs ... 6,0 µs after main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		42,0	50,0	—	dB
Feedthrough signal suppression					
1,3 µs ... 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		—	50,0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
32,25 ... 40,05 MHz		—	50	—	ns
Impedance at 36,17 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1,7 ‖17,3	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	2,4 ‖ 4,3	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

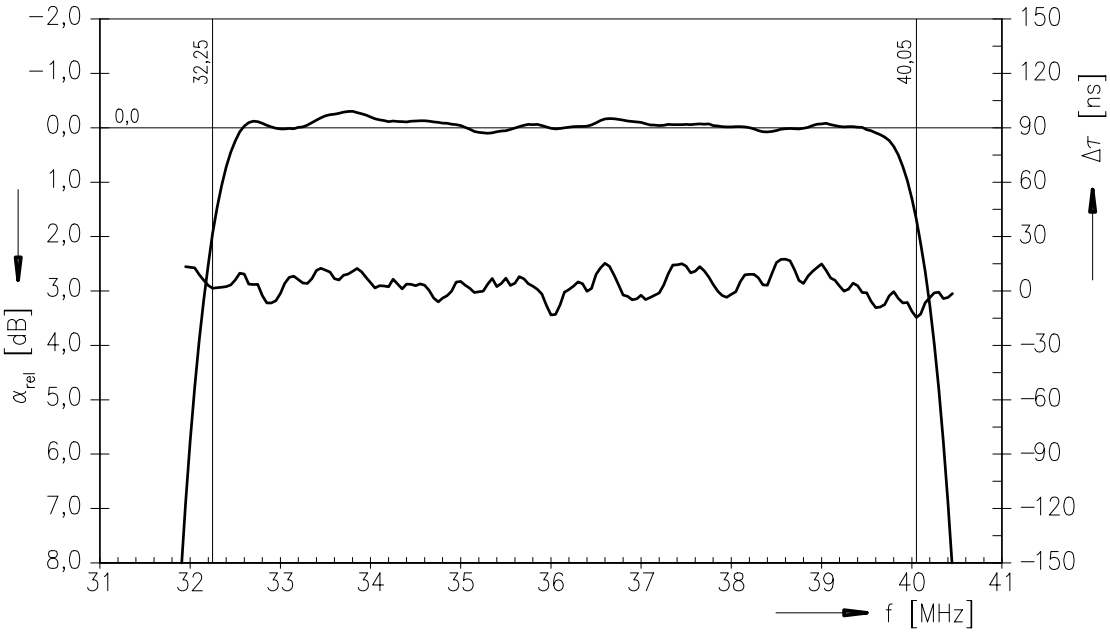
Characteristics of channel 2 (switching pin 2 connected to pin 1)

Reference temperature: T_A = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ || 3 pF

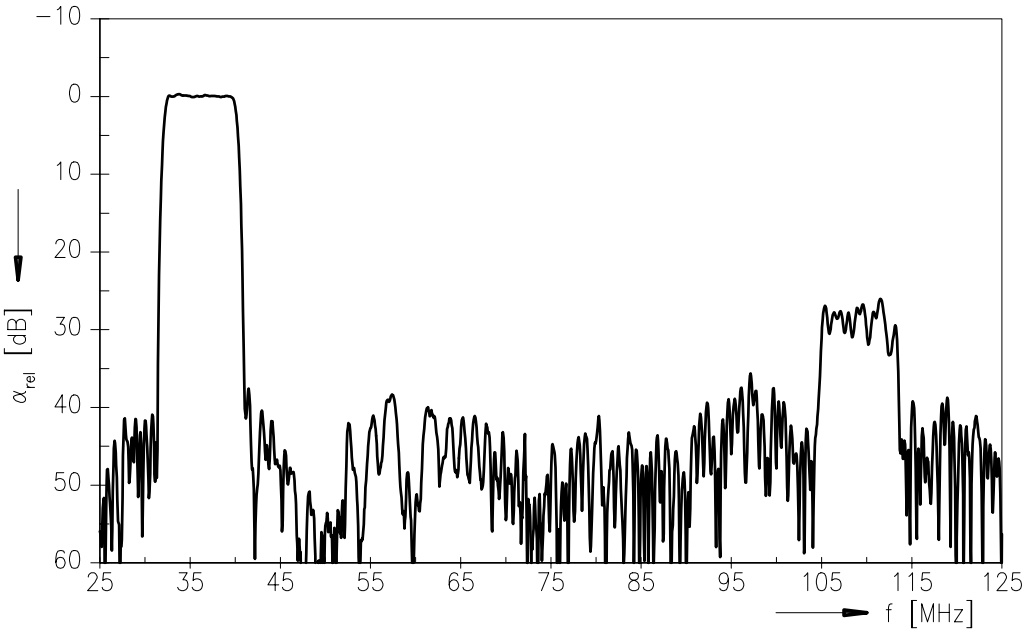
		min.	typ.	max.	
Insertion attenuation	α				
Reference level for the following data 36,17 MHz		19,5	21,0	22,5	dB
Pass bandwidth					
$\alpha_{rel} \leq$ 1,5 dB	$B_{1,5dB}$	6,4	6,7	7,0	MHz
$\alpha_{rel} \leq$ 3 dB	B_{3dB}	6,7	7,0	7,3	MHz
$\alpha_{rel} \leq$ 15 dB	B_{15dB}	7,7	8,0	8,3	MHz
$\alpha_{rel} \leq$ 30 dB	B_{30dB}	7,9	8,5	9,1	MHz
Relative attenuation	α_{rel}				
Lower sidelobe 25,00 ... 31,55 MHz		35,0	41,0		dB
Upper sidelobe 40,75 ... 45,00 MHz		33,0	38,0		dB
Reflected wave signal suppression					
1,1 µs ... 6,0 µs after main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		42,0	50,0	—	dB
Feedthrough signal suppression					
1,3 µs ... 1,2 µs before main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		—	50,0	—	dB
Group delay ripple (p-p)	$\Delta\tau$				
32,75 ... 39,55 MHz		—	50	—	ns
Impedance at 36,17 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1,5 ‖20,9	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	2,4 ‖ 4,3	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Frequency response of channel 1

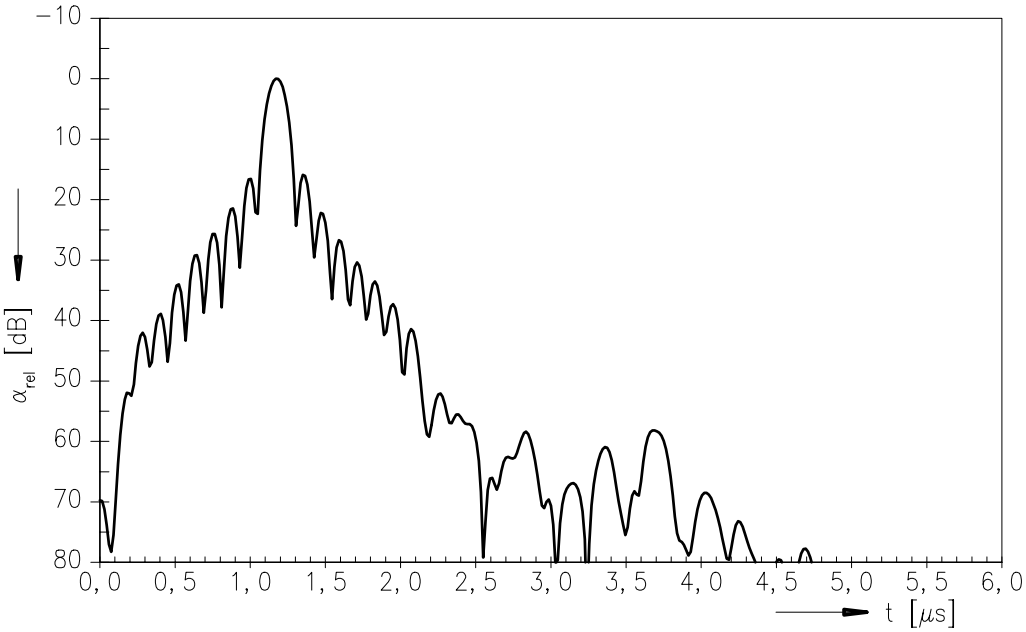




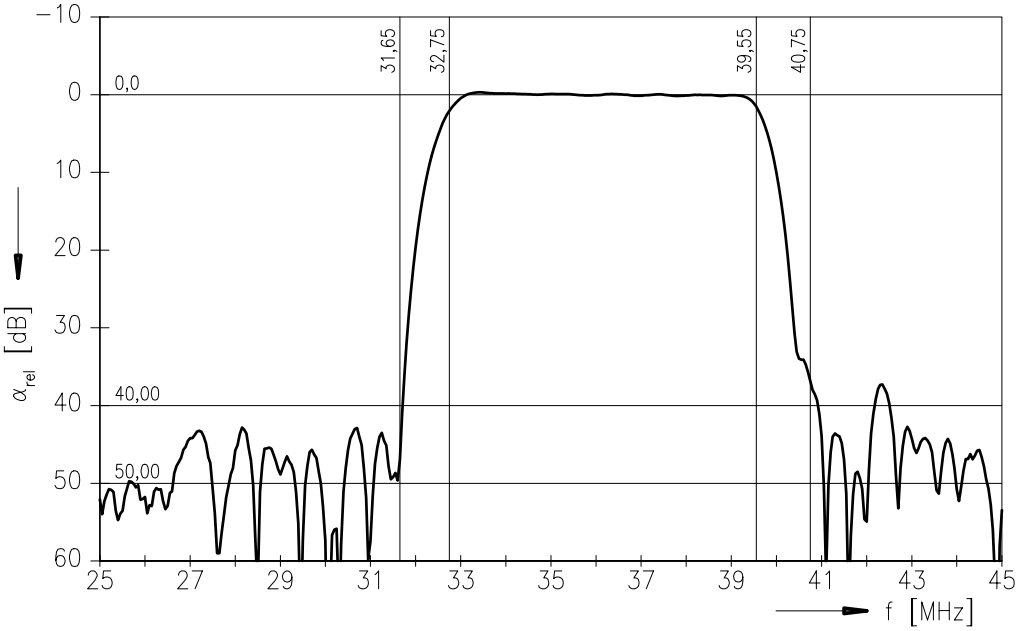
Frequency response of channel 1

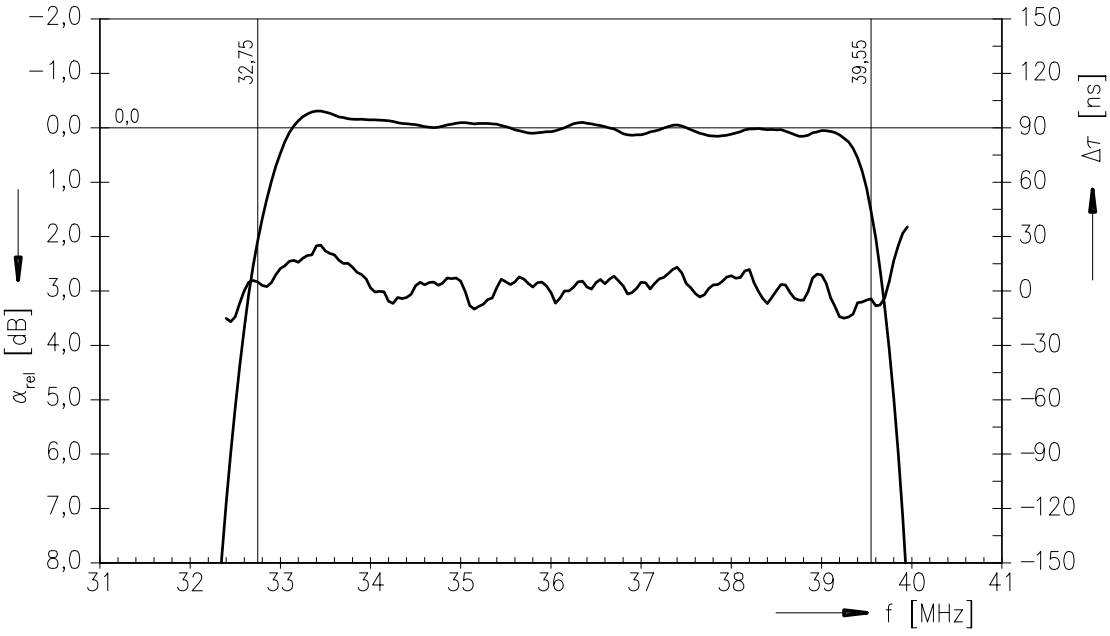


Time domain response of channel 1

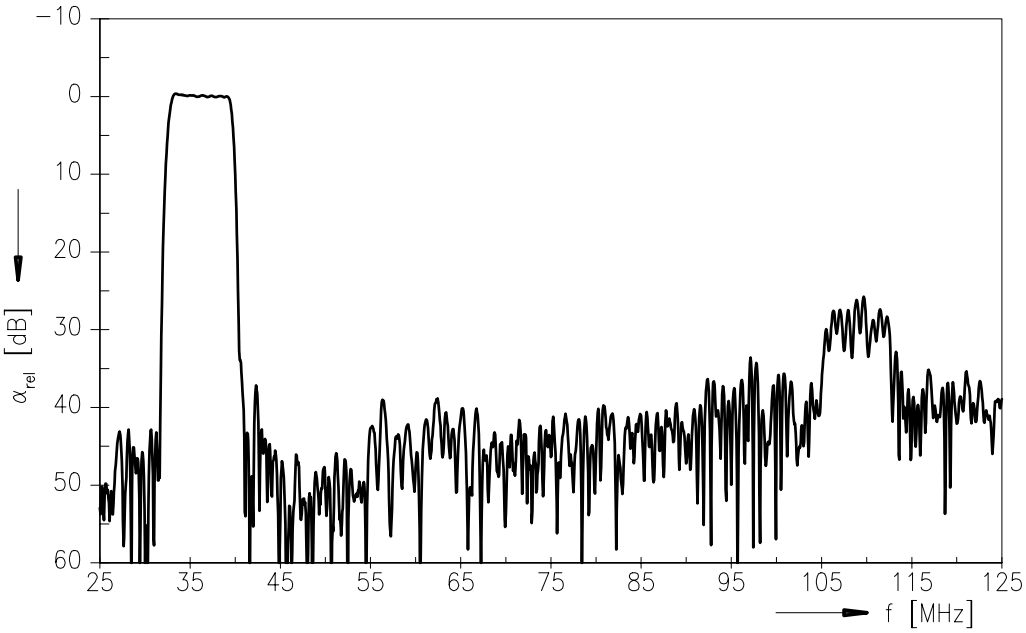


Frequency response of channel 2

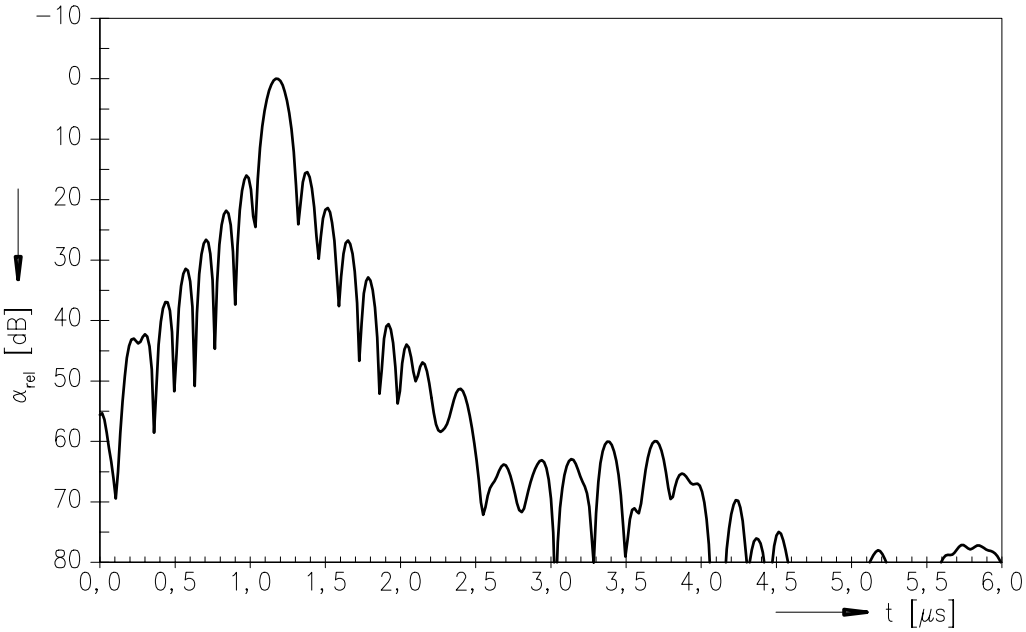




Frequency response of channel 2



Time domain response of channel 2



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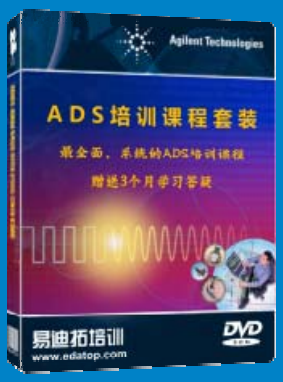

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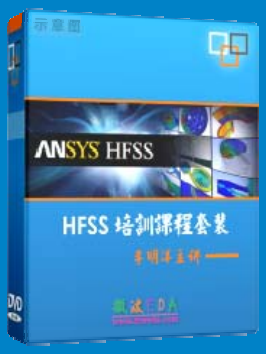

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