



# SAW Components

Data Sheet X 7251 D





**SAW Components**

**X 7251 D**

**Bandpass Filter**

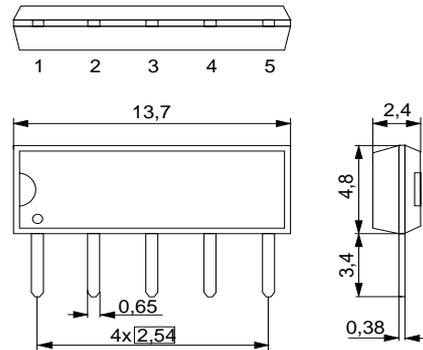
**36,17 MHz**

**Data Sheet**

Duroplast package **SIP5D**

**Features**

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



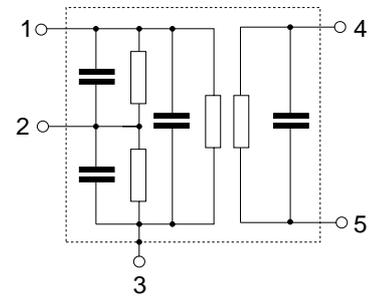
**Terminals**

- Tinned CuFe alloy

Dimensions in mm, approx. weight 0,5 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 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



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

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

		<b>min.</b>	<b>typ.</b>	<b>max.</b>	
<b>Insertion attenuation</b>	$\alpha$				
Reference level for the following data	36,17 MHz	19,5	21,0	22,5	dB
<b>Pass bandwidth</b>					
$\alpha_{rel} \leq 1,5\text{ dB}$	$B_{1,5dB}$	7,4	7,7	8,0	MHz
$\alpha_{rel} \leq 3\text{ dB}$	$B_{3dB}$	7,7	8,0	8,3	MHz
$\alpha_{rel} \leq 15\text{ dB}$	$B_{15dB}$	8,6	8,9	9,2	MHz
$\alpha_{rel} \leq 30\text{ dB}$	$B_{30dB}$	8,8	9,4	10,0	MHz
<b>Relative attenuation</b>	$\alpha_{rel}$				
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
<b>Reflected wave signal suppression</b>					
1,1 $\mu$ s ... 6,0 $\mu$ s after main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		42,0	50,0	—	dB
<b>Feedthrough signal suppression</b>					
1,3 $\mu$ s ... 1,2 $\mu$ s before main pulse (test pulse 250 ns, carrier frequency 36,17 MHz)		—	50,0	—	dB
<b>Group delay ripple (p-p)</b>	$\Delta\tau$				
32,25 ... 40,05 MHz		—	50	—	ns
<b>Impedance at 36,17 MHz</b>					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1,7 $\parallel$ 17,3	—	k $\Omega$ $\parallel$ pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	2,4 $\parallel$ 4,3	—	k $\Omega$ $\parallel$ pF
<b>Temperature coefficient of frequency</b>	$TC_f$	—	-72	—	ppm/K


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

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

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



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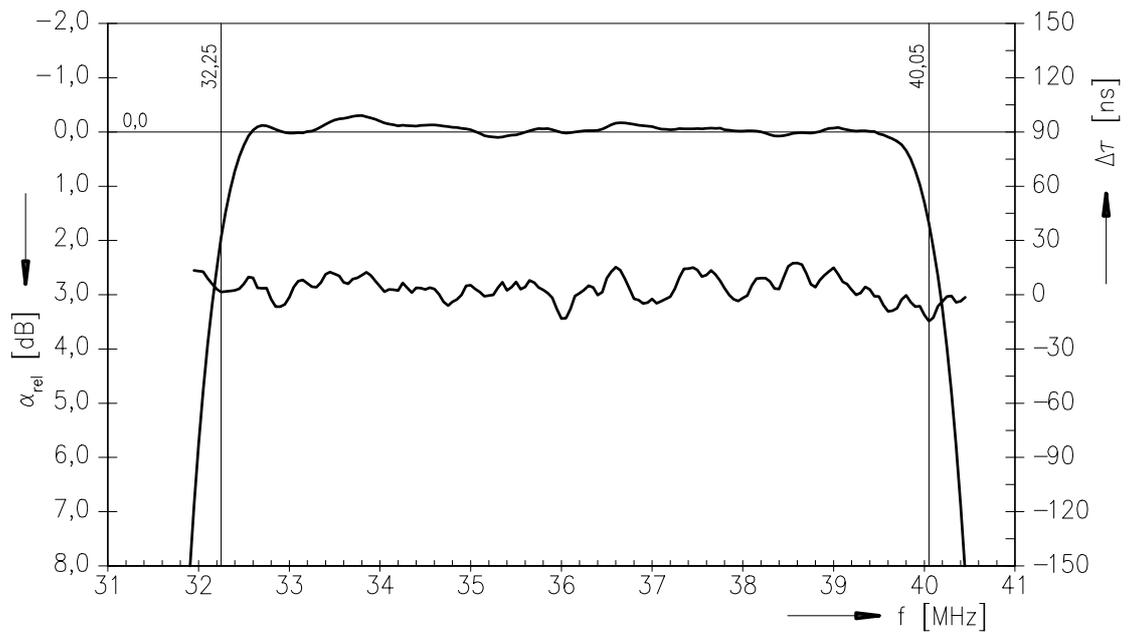
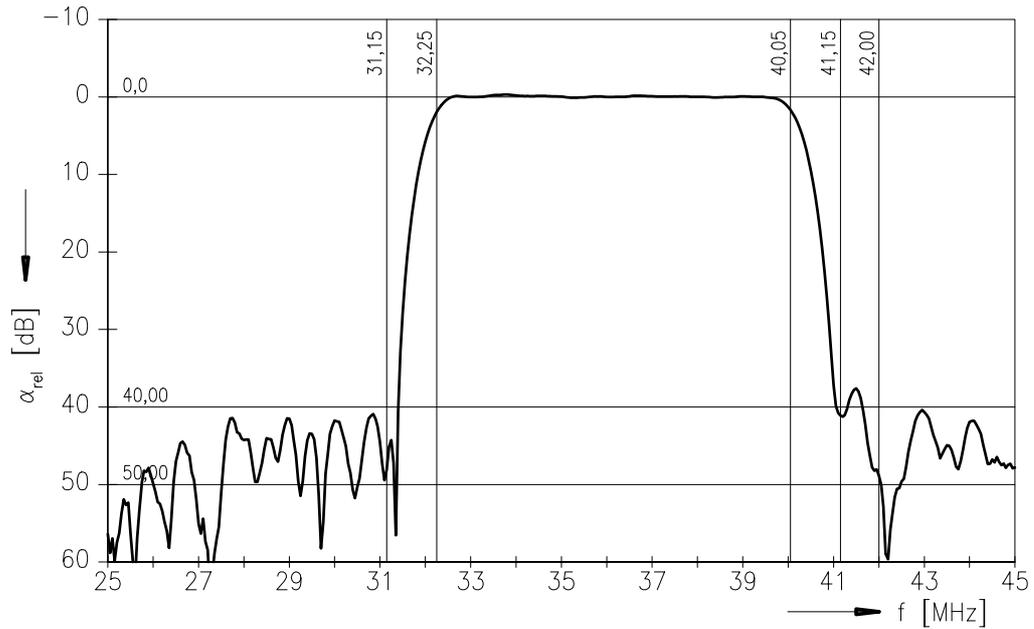
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Data Sheet

Frequency response of channel 1





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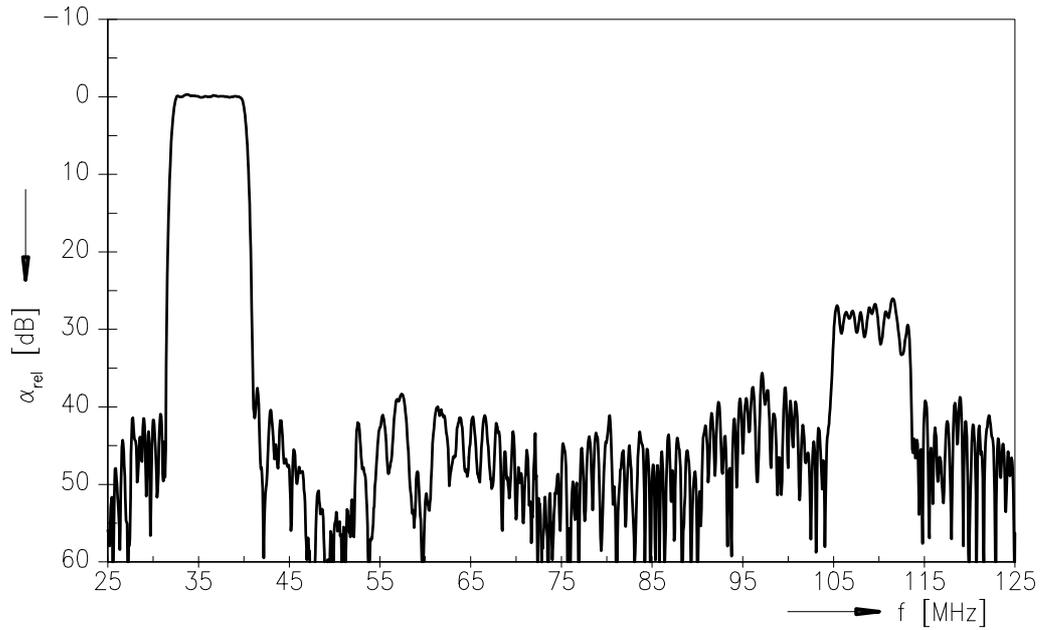
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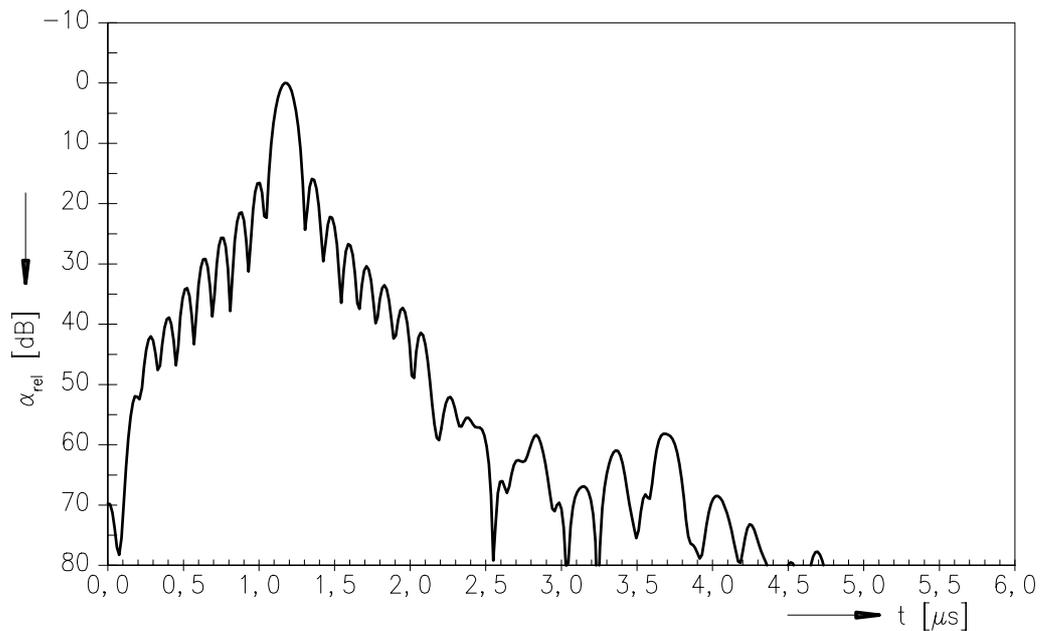
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Data Sheet

Frequency response of channel 1



Time domain response of channel 1





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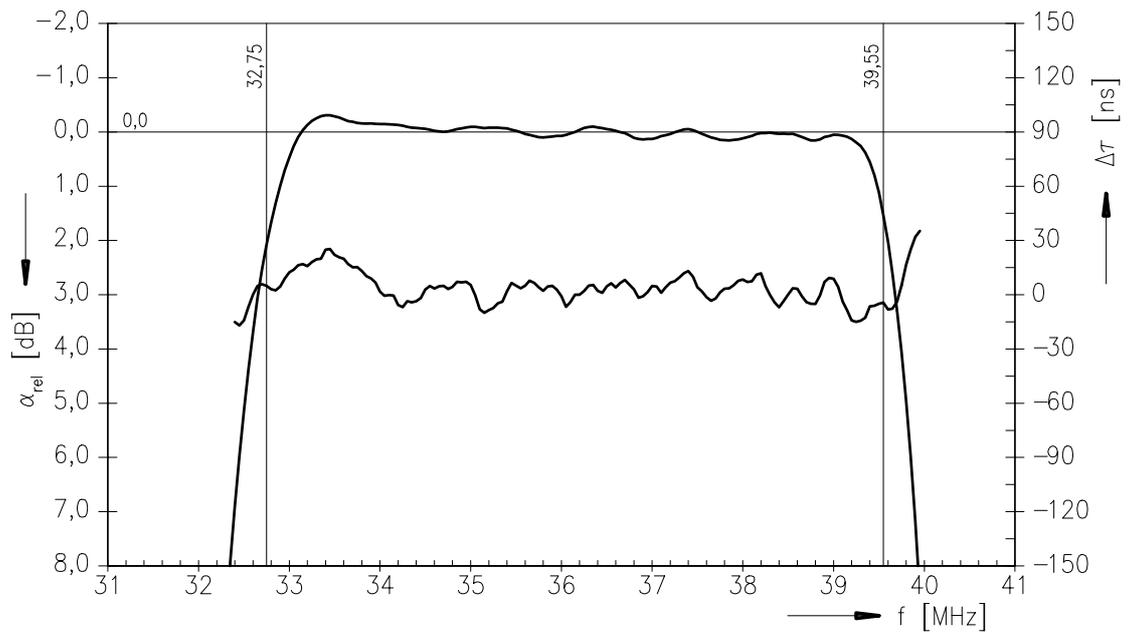
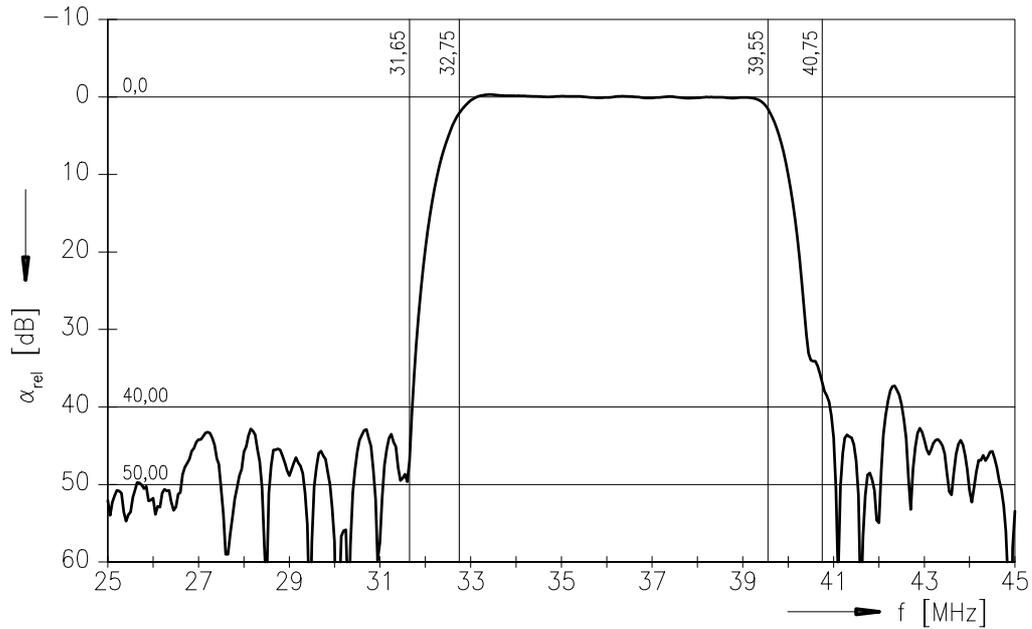
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Data Sheet

Frequency response of channel 2





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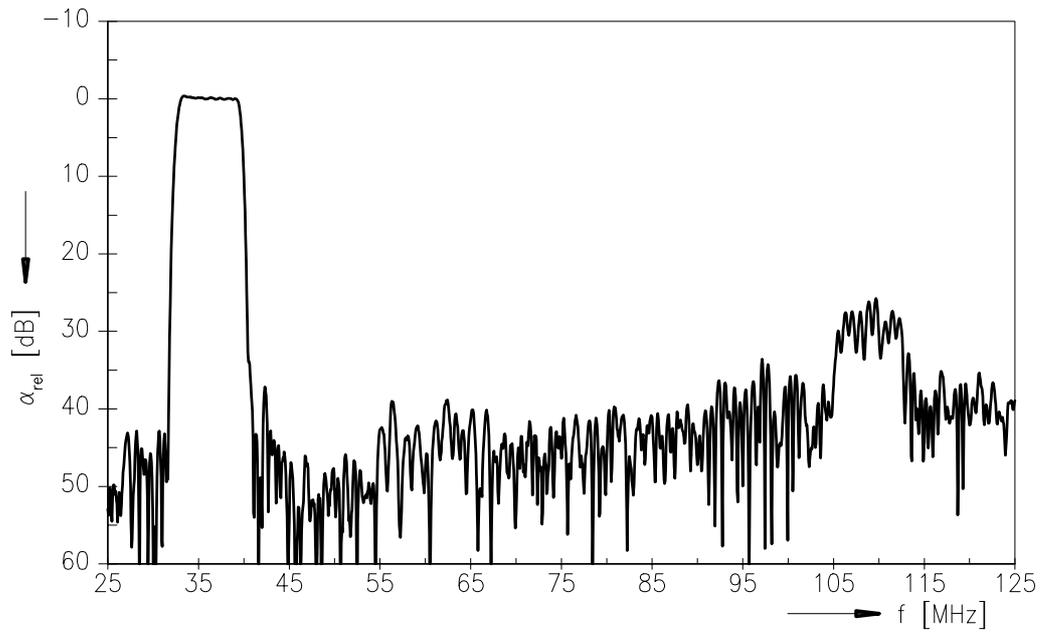
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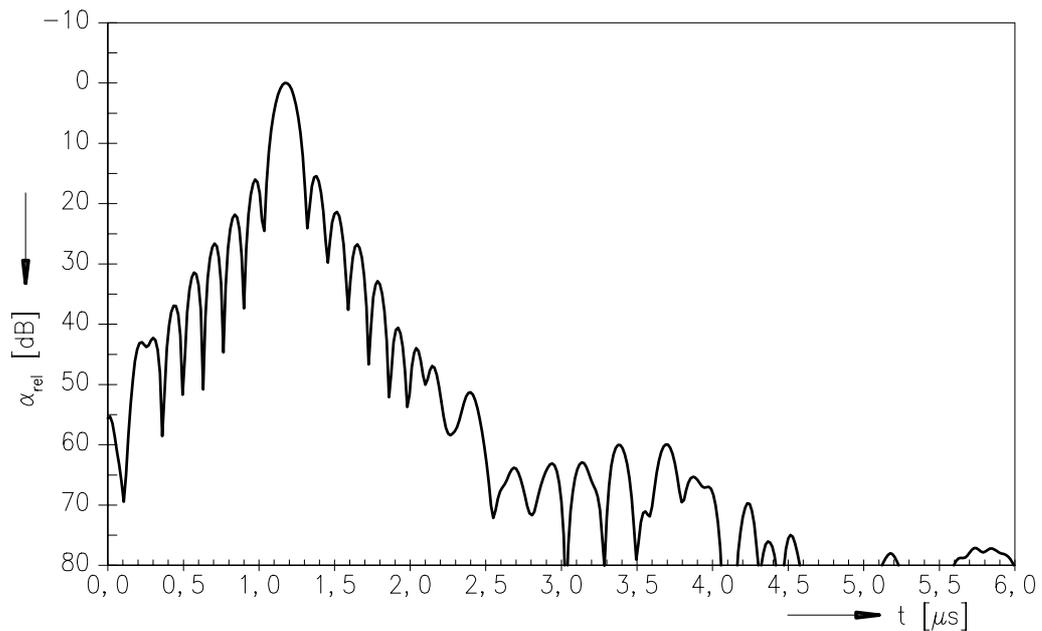
36,17 MHz

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Frequency response of channel 2



Time domain response of channel 2





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**Published by EPCOS AG**

**Surface Acoustic Wave Components Division, SAW CE MM PD**

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

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