SAW multimedia filters

Series/Type: X3751L

The following products presented in this data sheet are being withdrawn.

Ordering Code	Substitute Product	Date of Withdrawal	Deadline Last Orders	Last Shipments
B39360X3751L100		2011-01-14	2011-09-30	2012-09-30

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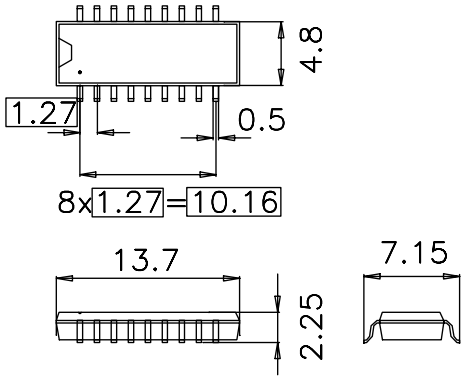
Application

- Standard: DVB-T for digital TV and Multistandard for analogue TV
- TV IF filter with one switchable bandpass channel and one audio channel
- Switchable 6 MHz and 8 MHz bandpass filter
- TV IF audio filter with pass band for sound carriers between 31.40 MHz to 33.20 MHz and 39.90 MHz to 40.40 MHz

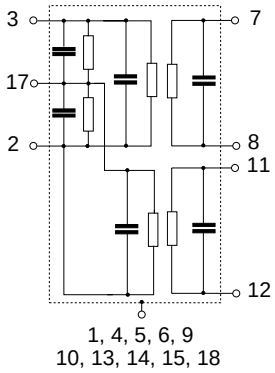
Features

- Duroplast package **DIP18D**
- Approximate weight 0.5 g
- **S**urface **M**ount **T**echnology (**SMT**)
- Standard IC small outline (SO) package
- RoHS compatible
- Tinned CuFe alloy terminals



Pin configuration

2	Input - bandpass; audio
3	Input - bandpass; audio
17	Input - switching input
7, 8	Output - bandpass
11, 12	Output - audio
1,4,5,6,9,10 13, 14, 15, 18	Chip carrier - ground
16	Not connected



Characteristics of 6 MHz bandpass channel (switching input pin 17 connected to 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. @ 25 ˚C	max.	
Center frequency (center between 10 dB points)	f_C	—	36.05	—	MHz
Insertion attenuation Reference level for the following data 36.05 (36.00) MHz	α	18.5	20.0	21.5	dB
Pass bandwidth					
$\alpha_{rel} \leq$ 3.0 dB	B_{3dB}	—	5.7	—	MHz
$\alpha_{rel} \leq$ 30.0 dB	B_{30dB}	—	7.3	—	MHz
Relative attenuation	α_{rel}				
33.75 (33.70) MHz		—	–0.2	—	dB
38.35 (38.30) MHz		—	0.1	—	dB
33.24 (33.19) MHz		—	3.0	—	dB
38.93 (38.88) MHz		—	3.0	—	dB
32.93 (32.88) MHz		—	9.0	—	dB
Lower sidelobe 26.05 ... 31.90 (26.00 ... 31.85) MHz		29.0	35.0	—	dB
Upper sidelobe 40.20 ... 46.05 (40.15 ... 46.00) MHz		30.0	36.0	—	dB
Reflected wave signal suppression 1.2 µs ... 6.0 µs after main pulse (test pulse 250 ns, carrier frequency 36.05 MHz)		40.0	50.0	—	dB
Feedthrough signal suppression 1.1 µs ... 1.0µs before main pulse (test pulse 250 ns, carrier frequency 36.05 MHz)		—	50.0	—	dB
Group delay ripple (p-p) 33.24 ... 38.93 (33.19 ... 38.88) MHz	Δτ	—	50	—	ns
Impedance at 36.05 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1.6 || 20.7	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	4.0 || 3.2	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Characteristics of 8 MHz bandpass channel (switching input pin 17 connected to pin 2)

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. @ 25 ˚C	max.	
Center frequency (center between 10 dB points)	f_C	—	36.05	—	MHz
Insertion attenuation Reference level for 36.05 (36.00) MHz the following data	α	21.5	23.0	24.5	dB
Pass bandwidth					
$\alpha_{rel} \leq$ 3.0 dB	B_{3dB}	—	7.8	—	MHz
$\alpha_{rel} \leq$ 30.0 dB	B_{30dB}	—	9.4	—	MHz
Relative attenuation	α_{rel}				
32.75 (32.70) MHz		—	0.0	—	dB
39.35 (39.30) MHz		—	0.2	—	dB
32.15 (32.10) MHz		—	3.0	—	dB
39.95 (39.90) MHz		—	3.0	—	dB
Lower sidelobe 26.05 ... 31.00 (26.00 ... 30.95) MHz		31.0	37.0	—	dB
Upper sidelobe 41.10 ... 46.05 (41.05 ... 46.00) MHz		32.0	38.0	—	dB
Reflected wave signal suppression 1.2 µs ... 6.0 µs after main pulse (test pulse 250 ns, carrier frequency 36.05 MHz)		38.0	48.0	—	dB
Feedthrough signal suppression 1.1 µs ... 1.0µs before main pulse (test pulse 250 ns, carrier frequency 36.05 MHz)		—	50.0	—	dB
Group delay ripple (p-p)	Δτ				
32.15 ... 39.95 (32.10 ... 39.90) MHz		—	50	—	ns
Impedance at 36.05 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	2.7 ‖ 11.9	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	4.4 ‖ 3.2	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Characteristics of audio channel (switching input pin 17 connected to pin 3)

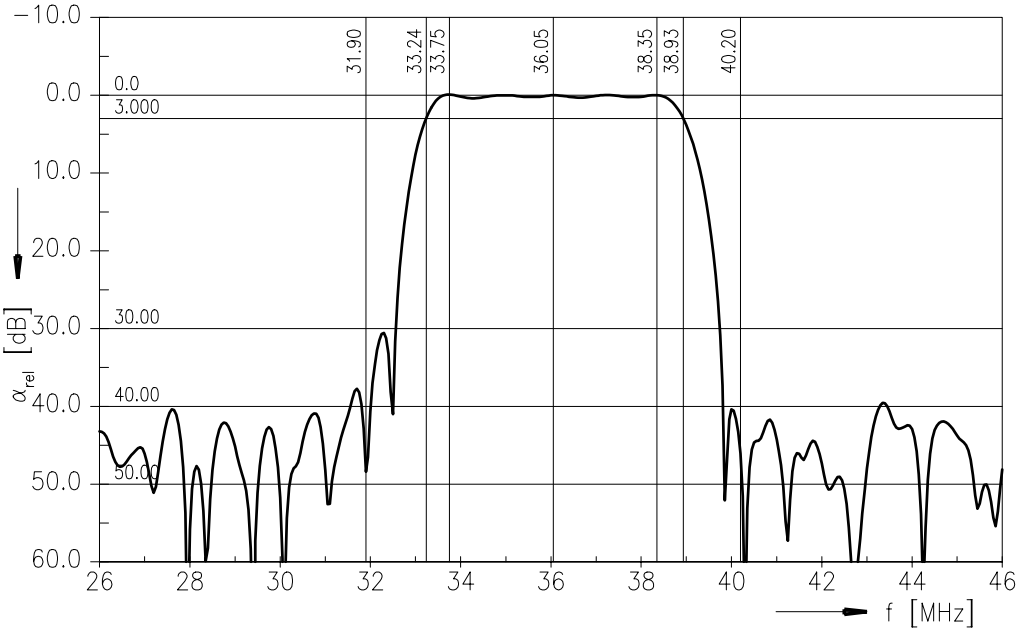
Reference temperature: T_A = 25 (45)˚C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ || 3 pF

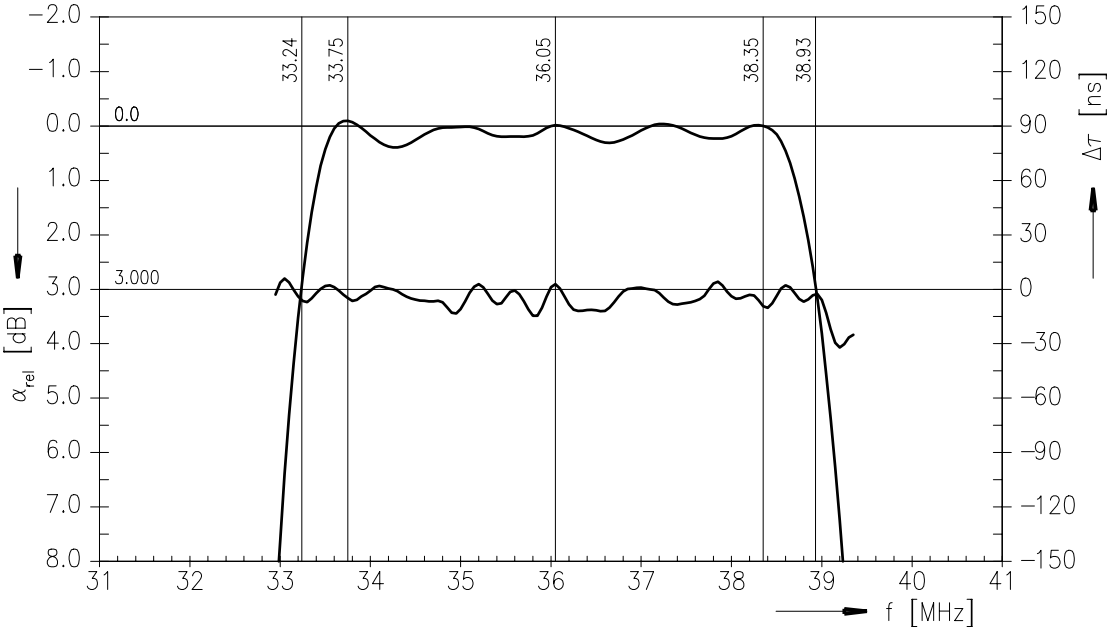
		min.	typ. @ 25 ˚C	max.	
Insertion attenuation	α				
Reference level for 32.35 (32.30) MHz the following data		19.5	21.0	22.5	dB
Relative attenuation	α_{rel}				
Sound Carrier 40.20 (40.15) MHz		–0.1	0.9	1.9	dB
In-band					
34.05 ... 34.95 (34.00 ... 34.90) MHz		21.0	27.0	—	dB
34.95 ... 38.20 (34.90 ... 38.15) MHz		26.0	32.0	—	dB
38.20 ... 39.10 (38.15 ... 39.05) MHz		27.0	33.0	—	dB
Lower sidelobe					
26.05 ... 29.75 (26.00 ... 29.70) MHz		30.0	36.0	—	dB
29.75 ... 30.65 (29.70 ... 30.60) MHz		33.0	39.0	—	dB
Upper sidelobe					
41.30 ... 42.20 (41.25 ... 42.15) MHz		23.0	28.0	—	dB
42.20 ... 46.05 (42.15 ... 46.00) MHz		28.0	34.0	—	dB
Impedance at 32.35 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1.3 ‖ 21.6	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	7.1 ‖ 3.2	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Maximum ratings

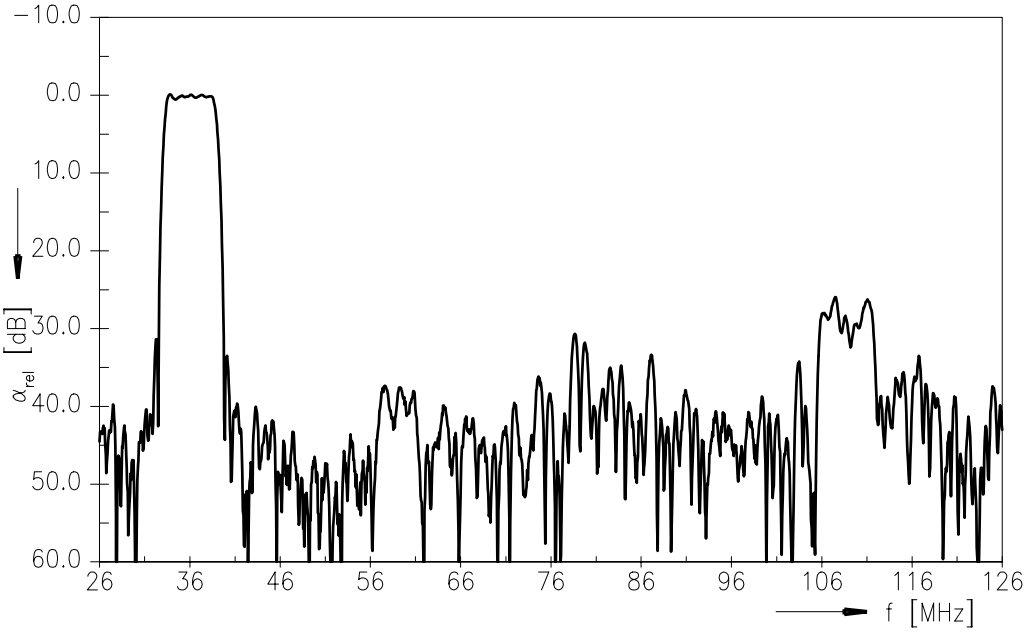
Operable temperature range	T	–25 / +65	˚C	
Storage temperature range	T_{stg}	–40 / +85	˚C	
DC voltage	V_{DC}	5	V	between any terminals
AC voltage	V_{pp}	10	V	between any terminals

Frequency response of 6 MHz bandpass channel

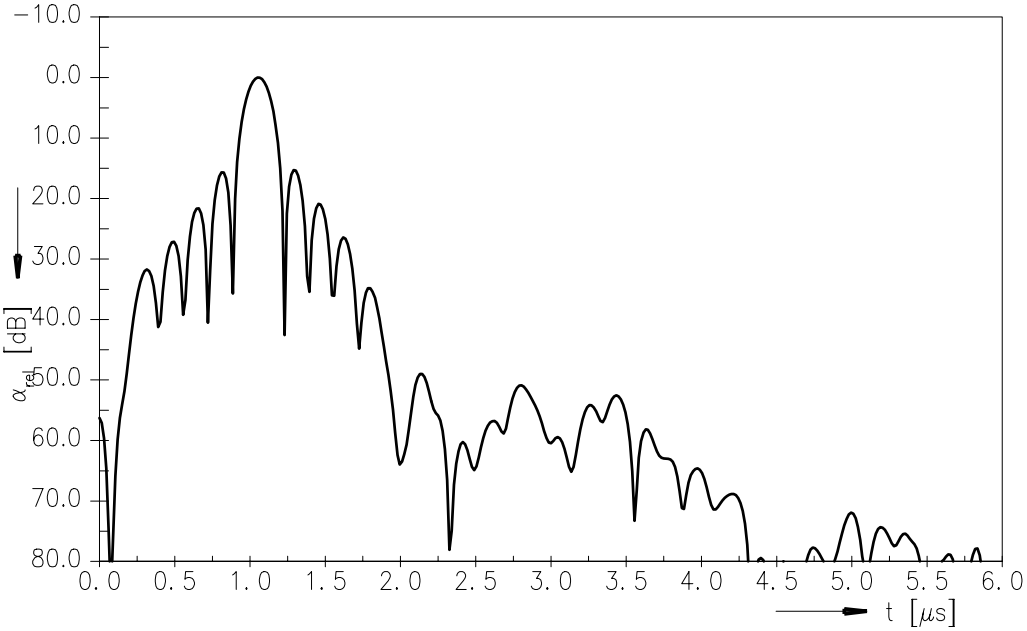




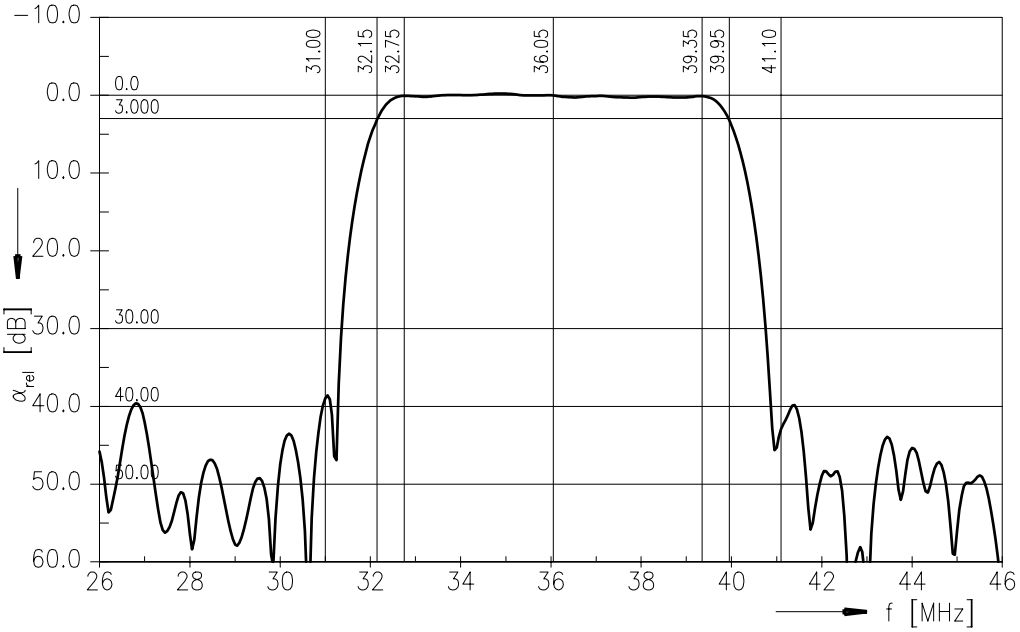
Frequency response of 6 MHz bandpass channel

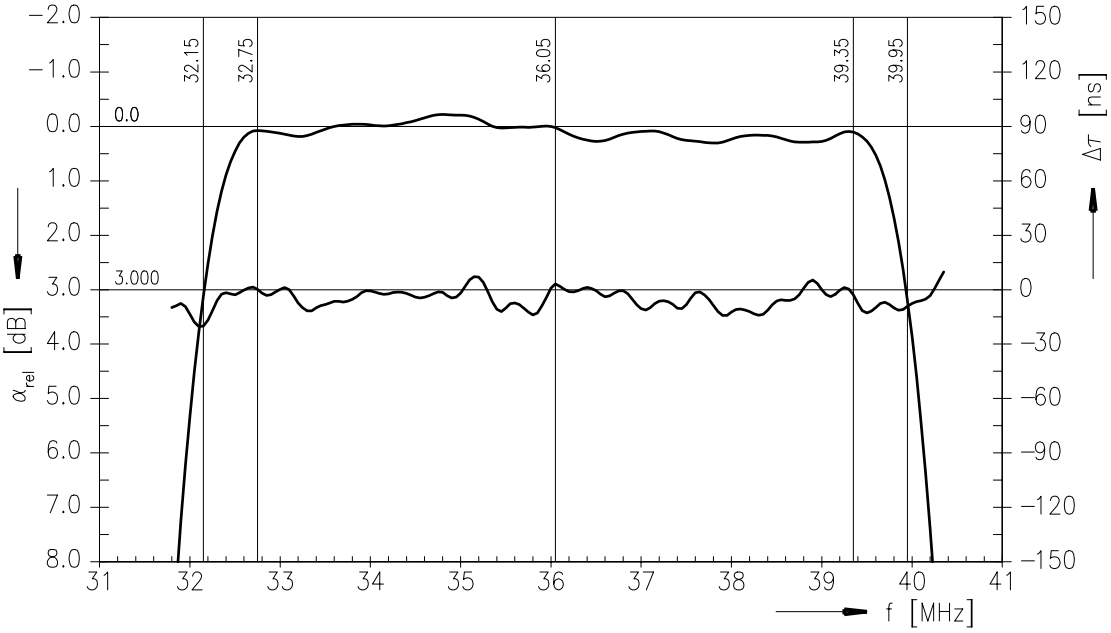


Time domain response of 6 MHz bandpass channel

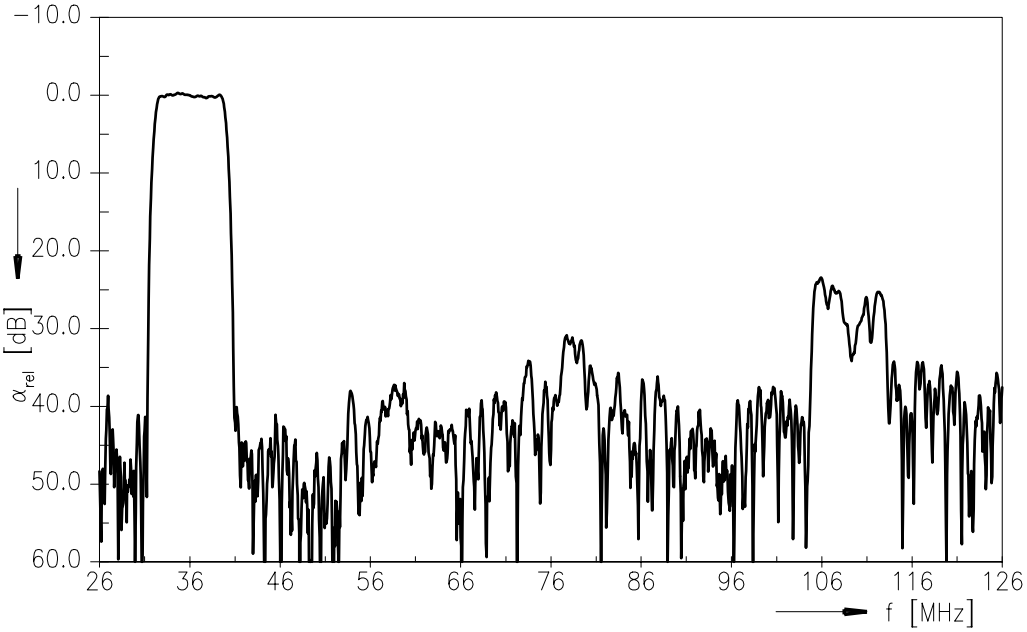


Frequency response of 8 MHz bandpass channel

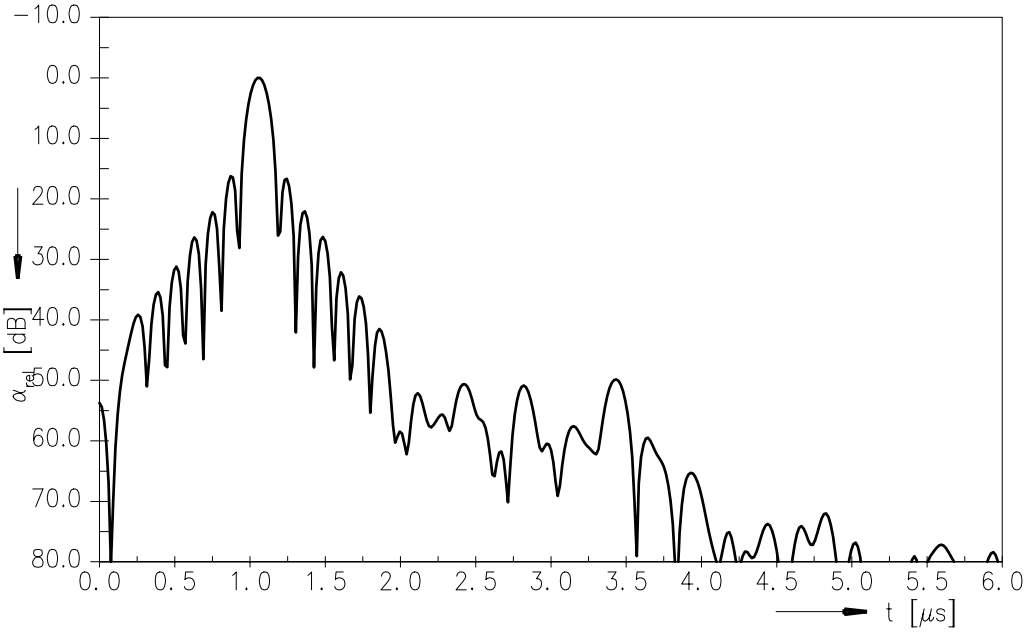




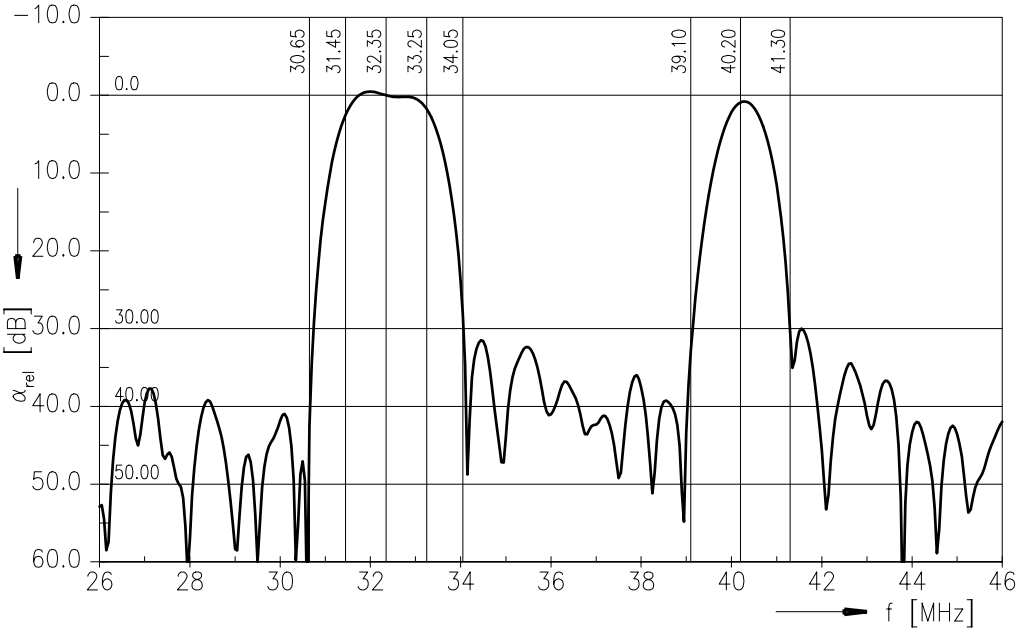
Frequency response of 8 MHz bandpass channel

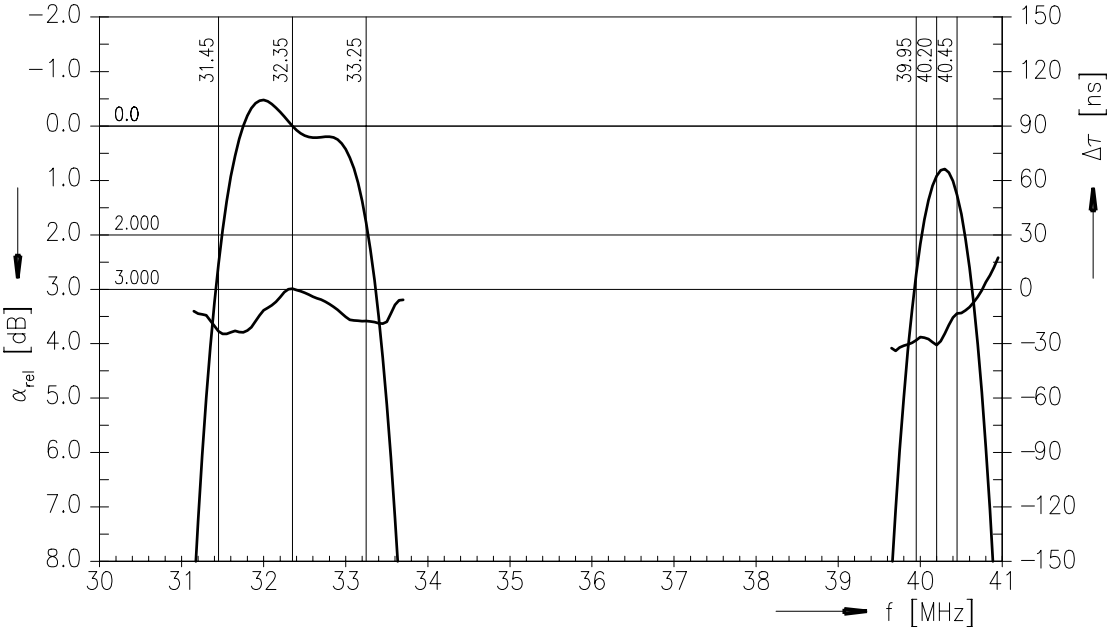


Time domain response of 8MHz bandpass channel



Frequency response audio channel





References

Type	X 3751 L
Ordering code	B39360-X3751-L100
Marking and package	C61157-A2-A4
Packaging	F61074-V8058-Z000
Date codes	L_1126
S-parameters	
Soldering profile	S_6001
RoHS compatible	defined as compatible with the following documents: "DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. 2005/618/EC from April 18th, 2005, amending Directive 2002/95/EC of the European Parliament and of the Council for the purposes of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment."

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Surface Acoustic Wave Components Division
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