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SAW Components

SAW bandpass filter

Bandpass Filters for TV Applications

Series/type:	X 6965 M
Ordering code:	B39440-X6965-M100
Date:	December 12, 2006
Version:	2.0



SAW Components

X 6965 M

SAW bandpass filter

44.00 MHz

Data Sheet

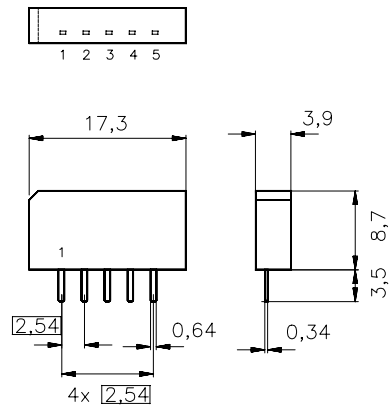
Application

- IF filter for digital cable TV
- Usable bandwidth 6.0 MHz



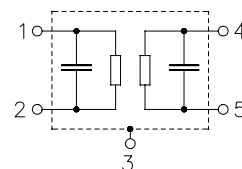
Features

- Plastic package **SIP5K**
- Approximate weight 1.0 g
- RoHS compatible
- Tinned CuFe alloy terminals



Pin configuration

- 1 Input
- 2 Input - ground
- 3 Chip carrier - ground
- 4 Output
- 5 Output



Please read *cautions and warnings and important notes* at the end of this document.


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Characteristics

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. @ 25 °C	max.	
Center frequency	f_c	—	44.06	—	MHz
(center between 3 dB points)					
Insertion attenuation	α				
Reference level for 44.06 (44.00) MHz		12.9	14.4	15.9	dB
the following data					
Pass bandwidth					
$\alpha_{\text{rel}} \leq 3 \text{ dB}$	$B_{3\text{dB}}$	—	6.0	—	MHz
$\alpha_{\text{rel}} \leq 30 \text{ dB}$	$B_{30\text{dB}}$	—	7.6	—	MHz
Amplitude ripple	$\Delta\alpha$				
Aperture: 250 kHz 41.53 ... 46.59 MHz		—	0.4	0.8	dB
Relative attenuation	α_{rel}				
41.53 (41.47) MHz		—	0.4	—	dB
46.59 (46.53) MHz		—	0.4	—	dB
41.06 (41.00) MHz		1.8	3.0	4.2	dB
47.06 (47.00) MHz		1.5	2.7	3.9	dB
47.31 (47.25) MHz		—	6.2	—	dB
39.81 (39.75) MHz		40.0	52.0	—	dB
Lowerside lobe					
35.06 ... 39.46 (35.00 ... 39.40) MHz		44.0	50.0	—	dB
39.46 ... 40.06 (39.40 ... 40.00) MHz		38.0	44.0	—	dB
Upperside lobe					
48.06 ... 50.06 (48.00 ... 50.00) MHz		36.0	43.0	—	dB
50.06 ... 55.06 (50.00 ... 55.00) MHz		42.0	48.0	—	dB
Reflected wave signal suppression					
1.3 μs ... 6.0 μs after main pulse (test pulse 250 ns, carrier frequency 44.06 MHz)		42.0	52.0	—	dB
Feedthrough signal suppression					
1.3 μs ... 6.0 μs after main pulse (test pulse 250 ns, carrier frequency 44.06 MHz)		50.0	56.0	—	dB
Group delay ripple (p-p)	Δt				
Aperture 250 kHz 41.53 ... 46.59 MHz		—	20	40	ns
Impedance at 44.06 MHz					
Input: $Z_{\text{IN}} = R_{\text{IN}} \parallel C_{\text{IN}}$		—	1.3 \parallel 16.1	—	k Ω \parallel pF
Output: $Z_{\text{OUT}} = R_{\text{OUT}} \parallel C_{\text{OUT}}$		—	1.1 \parallel 5.6	—	k Ω \parallel pF
Temperature coefficient of frequency	TC_f	—	-72	—	ppm/K



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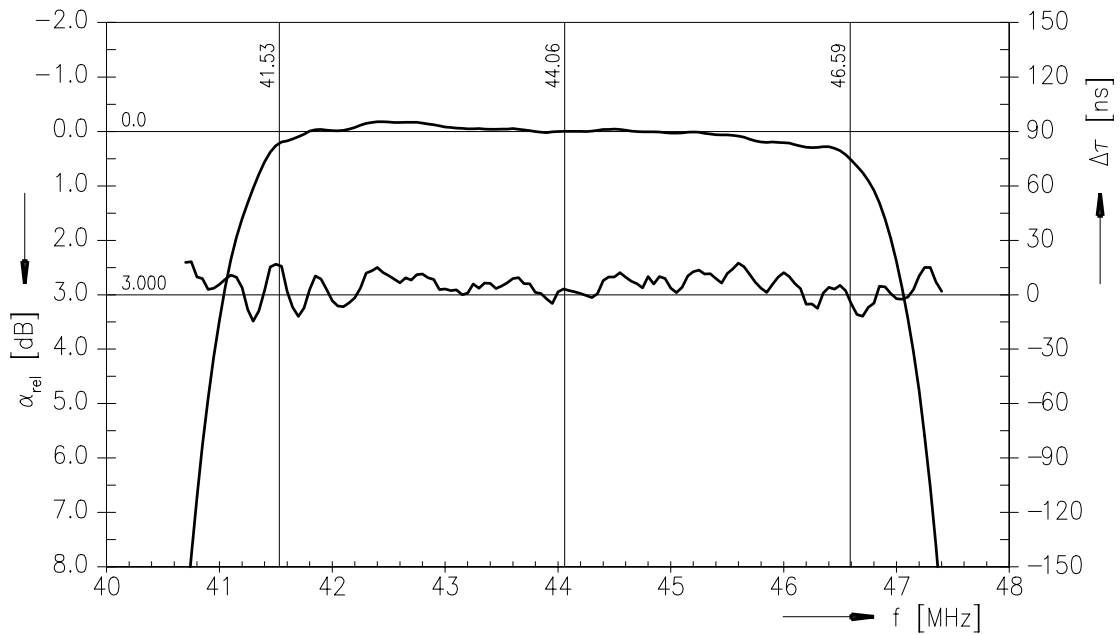
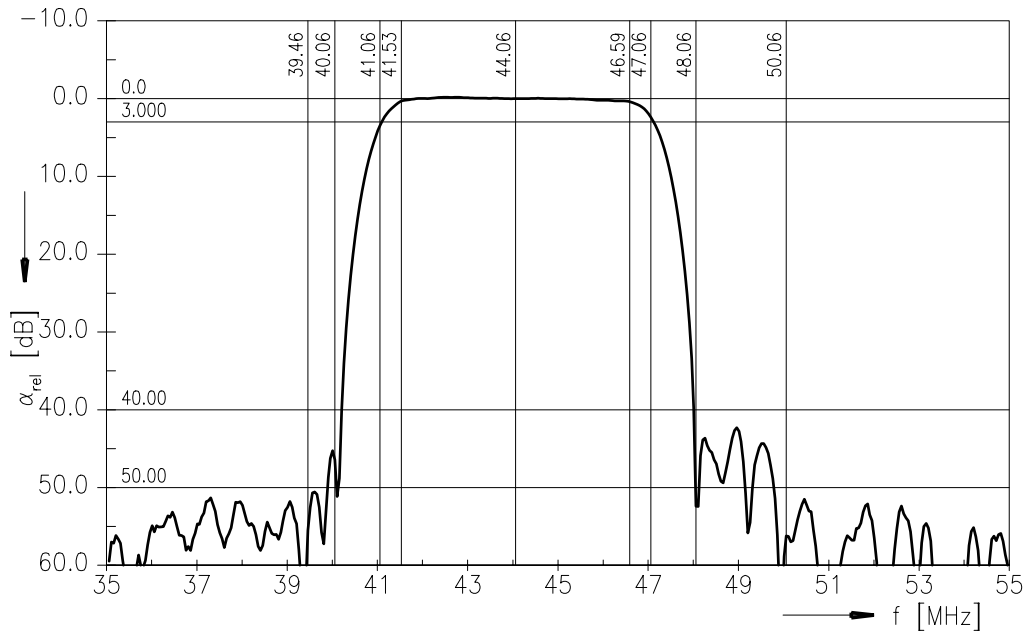
Maximum ratings

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



Data Sheet

Frequency response



Please read *cautions and warnings* and *important notes* at the end of this document.



SAW Components

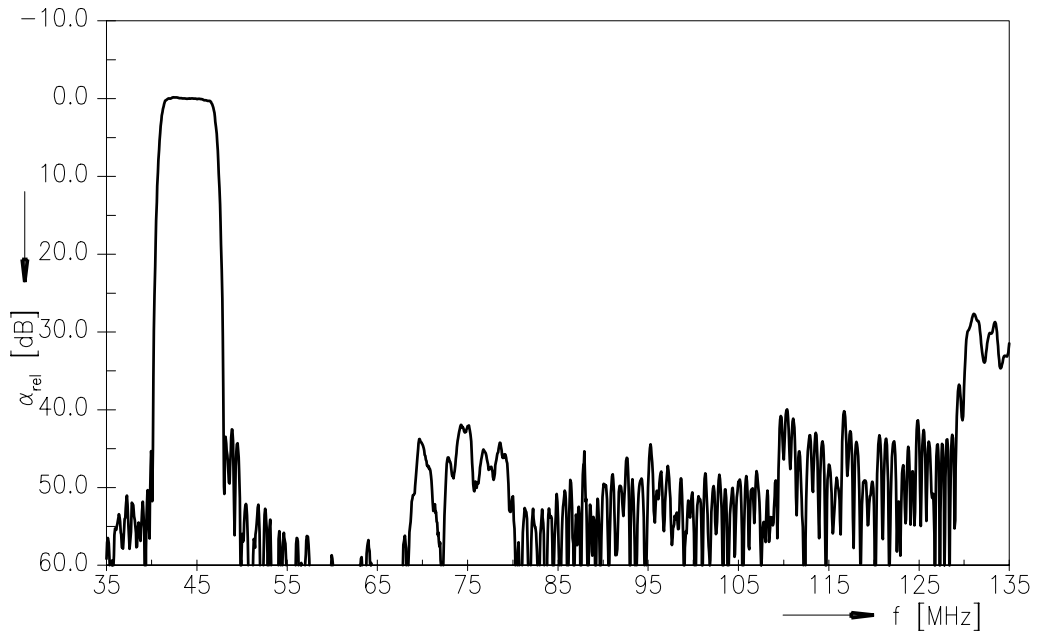
X 6965 M

SAW bandpass filter

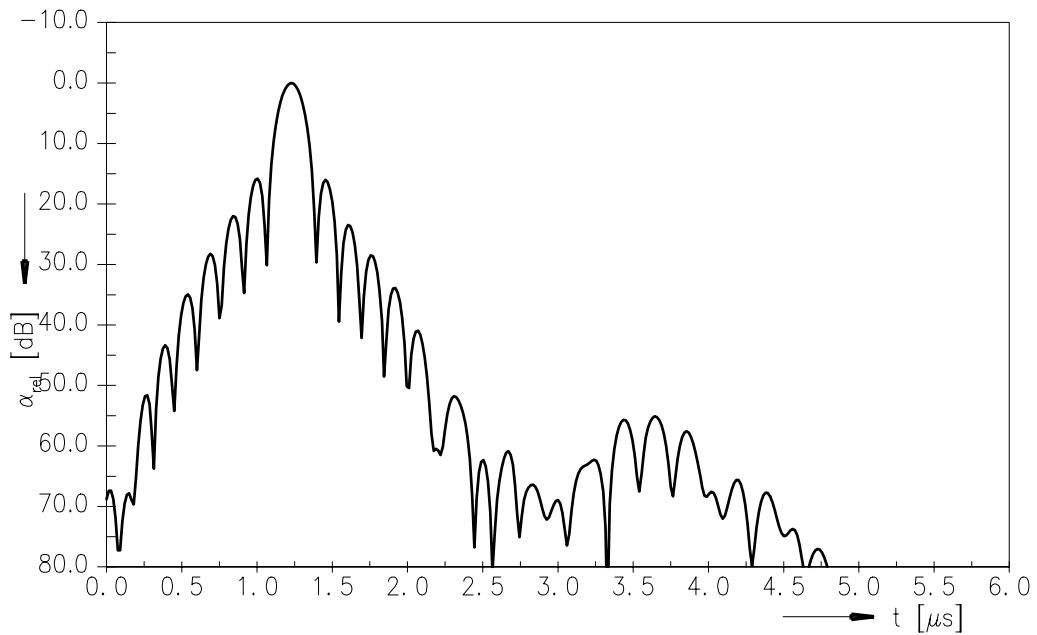
44.00 MHz

Data Sheet

Frequency response



Time domain response



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Data Sheet

References

Type	X 6965 M
Ordering code	B39440-X6965-M100
Marking and package	C61157-A1-A15
Packaging	F61074-V8067-Z000
Date codes	L_1126
S-parameters	X6965M_NB.s4p
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."

For further information please contact your local EPCOS sales office or visit our webpage at www.epcos.com .

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