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# *SAW Components*

*Data Sheet L 9654 M*

Data Sheet

A large, stylized, 3D-rendered graphic of the EPCOS logo. The word "EPCOS" is written in a bold, sans-serif font, with the letters appearing to be part of a curved, metallic surface. The background is dark and textured, suggesting a circuit board or a similar technical component.



**SAW Components**

**L 9654 M**

**IF Filter for Audio Applications**

**33,90 MHz and 38,90 MHz**

**Data Sheet**

**Standard**

Plastic package **SIP5K**

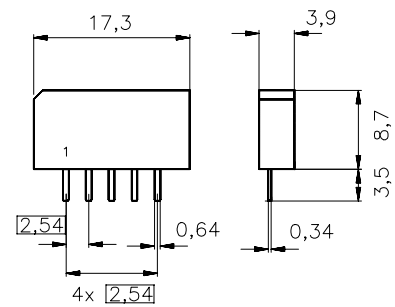
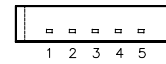
- L/L'

**Features**

- TV IF audio filter with two channels
- Channel 1 with pass band for sound carriers at 40,40 MHz (L') and 39,75 MHz (L'-NICAM)
- Channel 2 with pass band for sound carriers at 32,40 MHz (L) and 33,05 MHz (L-NICAM)

**Terminals**

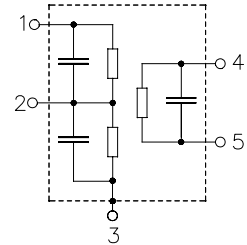
- Tinned CuFe alloy



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
L 9654 M	B39389-L9654-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	$V_{DC}$	12	V	between any terminals
AC voltage	$V_{pp}$	10	V	between any terminals



Data Sheet

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:  $Z_L = 2\text{ k}\Omega \parallel 3\text{ pF}$

		min.	typ.	max.	
<b>Insertion attenuation</b>					
	$\alpha$				
Reference level for the following data	40,40 MHz	17,4	18,9	20,4	dB
<b>Relative attenuation</b>					
	$\alpha_{rel}$				
	39,75 MHz	-1,7	-0,7	0,3	dB
	38,40 MHz	36,0	56,0	—	dB
Picture carrier	33,90 MHz	38,0	54,0	—	dB
Adjacent picture carrier	41,90 MHz	32,0	37,0	—	dB
Adjacent sound carrier	32,40 MHz	36,0	51,0	—	dB
Lower sidelobe	25,00 ... 32,40 MHz	32,0	38,0	—	dB
Upper sidelobe	41,90 ... 45,00 MHz	30,0	35,0	—	dB
<b>Group delay ripple (p-p)</b>					
	$\Delta\tau$	—	50	—	ns
<b>Impedance at 40,40 MHz</b>					
Input:	$Z_{IN} = R_{IN} \parallel C_{IN}$	—	1,1 $\parallel$ 10,7	—	k $\Omega$ $\parallel$ pF
Output:	$Z_{OUT} = R_{OUT} \parallel C_{OUT}$	—	0,5 $\parallel$ 10,3	—	k $\Omega$ $\parallel$ pF
<b>Temperature coefficient of frequency</b>					
	$TC_f$	—	-72	—	ppm/K



Data Sheet

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

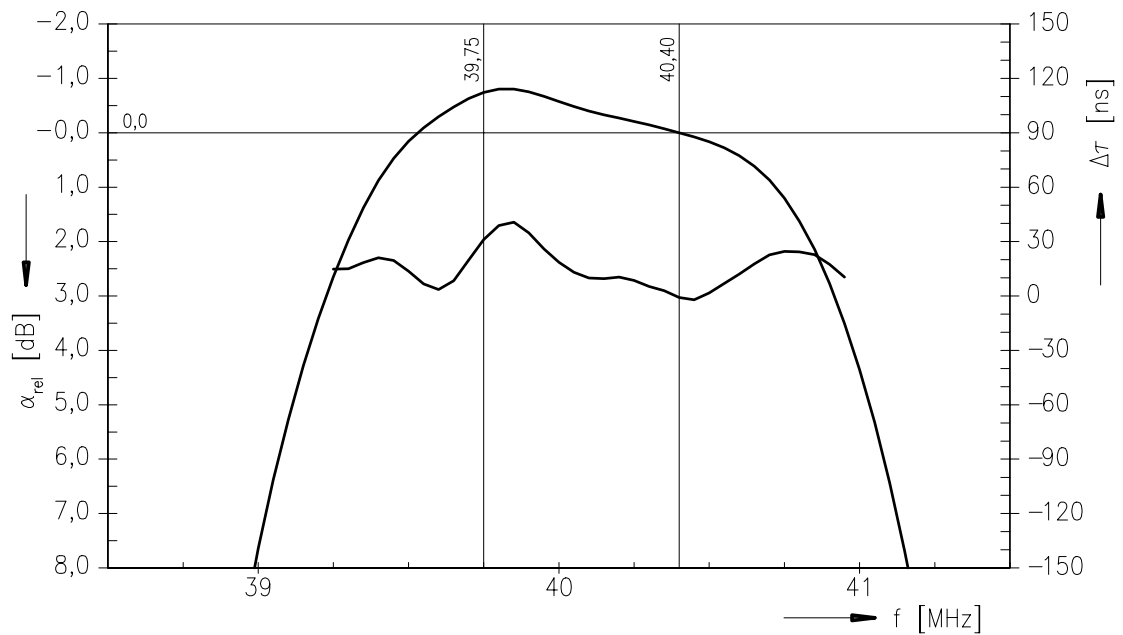
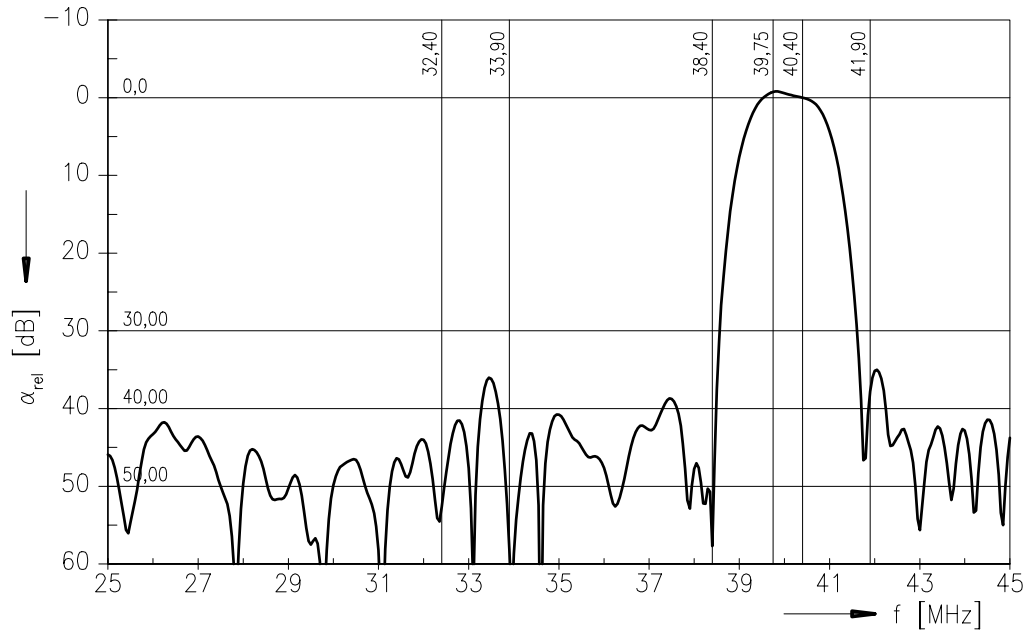
Reference temperature:  $T_A = 25\text{ °C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 2\text{ k}\Omega \parallel 3\text{ pF}$

		min.	typ.	max.	
<b>Insertion attenuation</b>					
	$\alpha$				
Reference level for the following data	32,40 MHz	16,5	18,0	19,5	dB
<b>Relative attenuation</b>					
	$\alpha_{rel}$				
	33,05 MHz	-0,7	0,3	1,3	dB
	34,40 MHz	30,0	50,0	—	dB
Picture carrier	38,90 MHz	40,0	55,0	—	dB
Adjacent picture carrier	30,90 MHz	44,0	54,0	—	dB
Adjacent sound carrier	40,40 MHz	35,0	46,0	—	dB
Lower sidelobe	25,00 ... 30,90 MHz	32,0	38,0	—	dB
Upper sidelobe	38,90 ... 45,00 MHz	32,0	38,0	—	dB
<b>Group delay ripple (p-p)</b>					
	$\Delta\tau$	—	50	—	ns
<b>Impedance at 32,40 MHz</b>					
Input:	$Z_{IN} = R_{IN} \parallel C_{IN}$	—	1,4 $\parallel$ 15,4	—	k $\Omega$ $\parallel$ pF
Output:	$Z_{OUT} = R_{OUT} \parallel C_{OUT}$	—	0,6 $\parallel$ 14,1	—	k $\Omega$ $\parallel$ pF
<b>Temperature coefficient of frequency</b>					
	$TC_f$	—	-72	—	ppm/K



Data Sheet

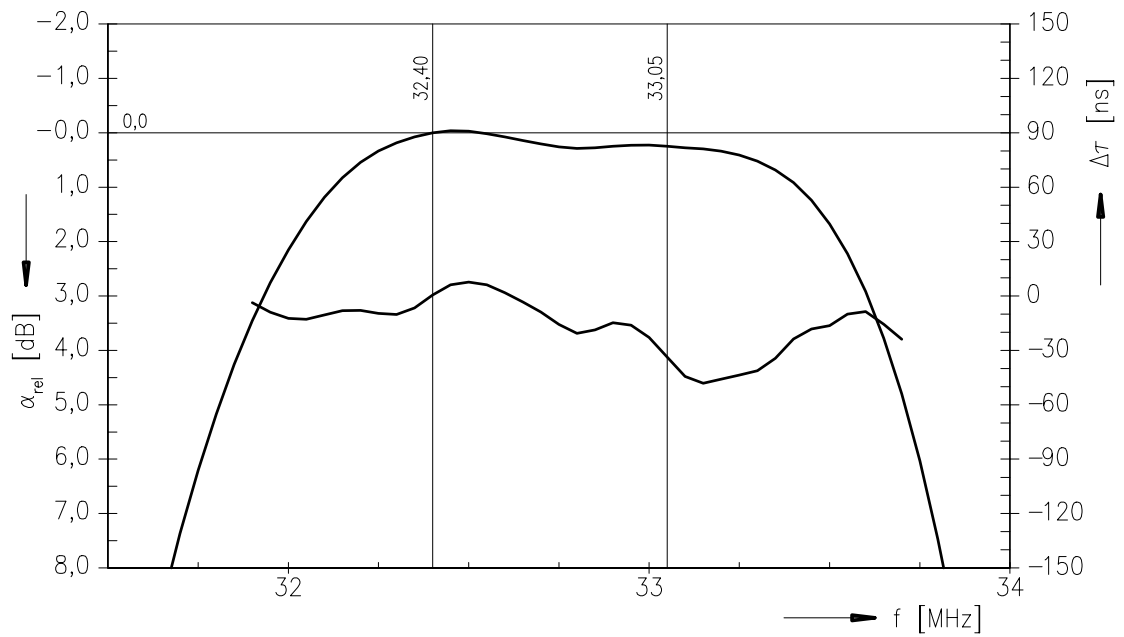
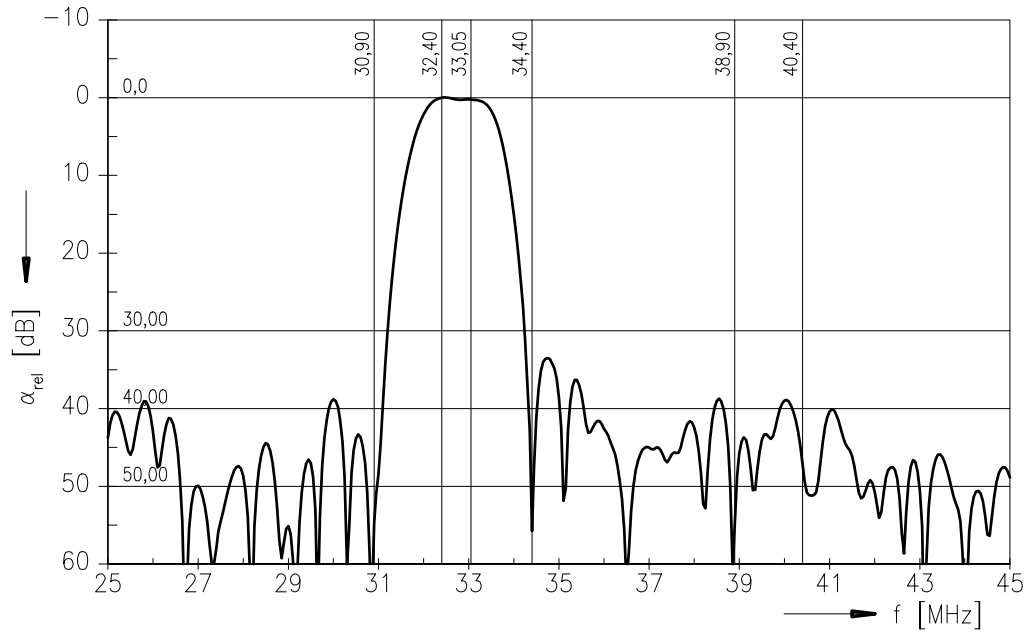
Frequency response of channel 1





Data Sheet

Frequency response of channel 2





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