SAW Components

SAW IF filter

IF Filter for Intercarrier Applications

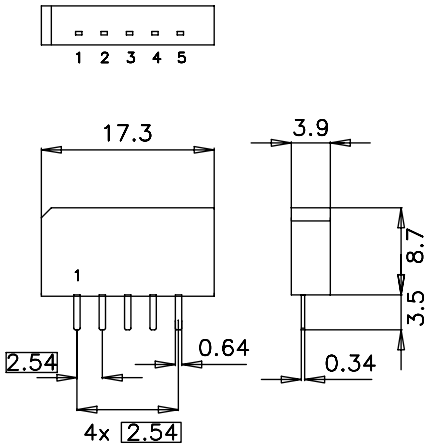
Series/type:	**K 7291 M**
Ordering code:	**B39389-K7291-M100**
Date:	February 19, 2009
Version:	2.0

Application

- Standard: B/G, D/K, M/N
- TV IF filter switchable from B/G, D/K mode to M/N mode
- B/G, D/K mode with Nyquist slope and broad sound shelf for sound carriers at 32.40 MHz and 33.40 MHz
- Reduced group delay predistortion as compared to standard B/G half
- M/N mode with Nyquist slope and sound shelf at 34.40 MHz
- Constant group delay

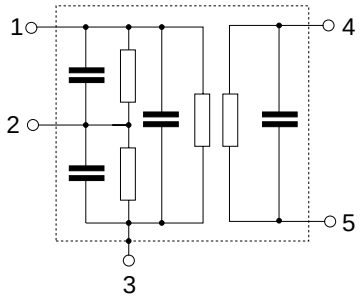
Features

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



Pin configuration

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



Characteristics in B/G, D/K mode (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. @ 25 °C	max.	
Insertion attenuation	α				
Reference level for the following data	37.40 MHz	15.6	17.1	18.6	dB
Relative attenuation	α_{rel}				
Picture carrier	38.90 MHz	4.7	5.7	6.7	dB
Color carrier	34.47 MHz	–0.1	0.9	1.9	dB
Sound carrier	32.40 MHz	17.7	19.2	20.7	dB
	33.40 MHz	15.6	17.1	—	dB
Adj. picture carrier	30.90 MHz	46.0	60.0	—	dB
	31.90 MHz	40.0	56.0	—	dB
Adj. sound carrier	40.40 MHz	40.0	52.0	—	dB
	41.40 MHz	40.0	50.0		dB
Lower sidelobe					
	25.00 ... 30.90 MHz	38.0	44.0	—	dB
Upper sidelobe					
	40.40 ... 45.00 MHz	37.0	43.0	—	dB
Reflected wave signal suppression					
1.2 µs ... 6.0 µs after main pulse (test pulse 250 ns, carrier frequency 36.50 MHz)		42.0	49.0	—	dB
Feedthrough signal suppression					
1.2 µs ... 1.1 µs before main pulse (test pulse 250 ns, carrier frequency 37.40 MHz)		—	56.0	—	dB
Group delay predistortion (reference frequency 38.90 MHz)	$\Delta\tau$				
	36.80 MHz	—	–40	—	ns
	34.47 MHz	—	50	—	ns
Impedance at 37.40 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1.6 || 13.6	—	kΩ || pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	3.2 || 3.2	—	kΩ || pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Characteristics in M/N mode (switching pin 2 connected to pin 1)

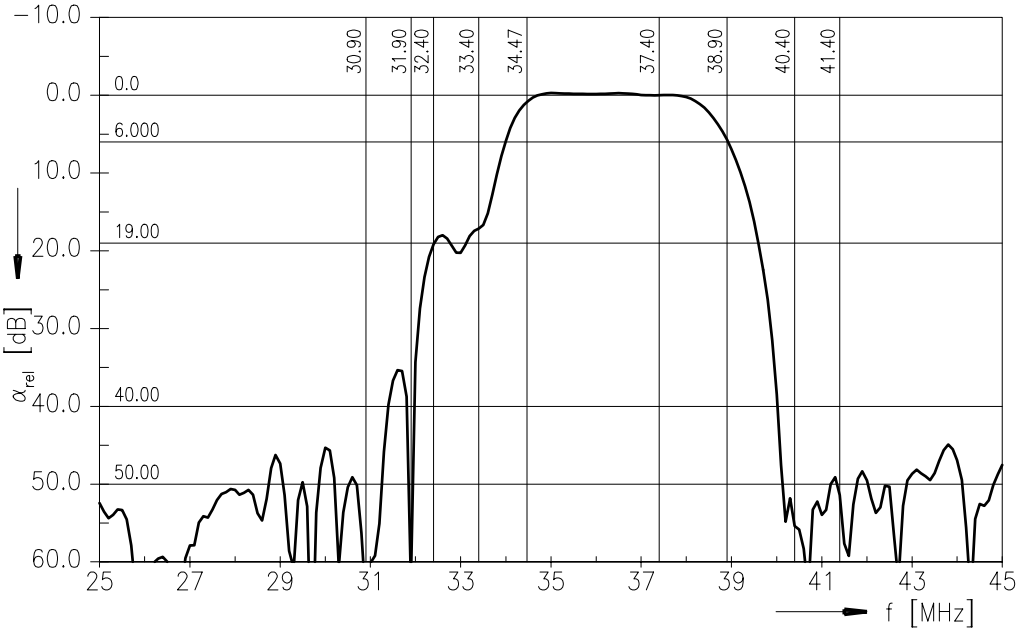
Reference temperature: T_A = 25 °C
Terminating source impedance: Z_S = 50 Ω
Terminating load impedance: Z_L = 2 kΩ || 3 pF

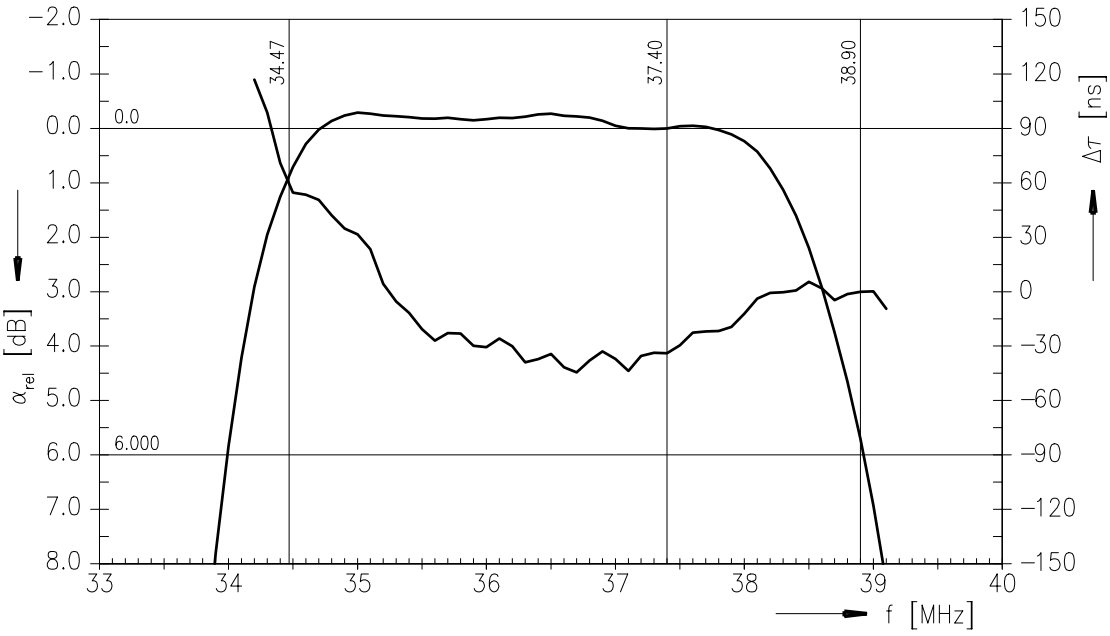
		min.	typ. @ 25 °C	max.	
Insertion attenuation	α				
Reference level for the following data	37.40 MHz	14.4	15.9	17.4	dB
Relative attenuation	α_{rel}				
Picture carrier	38.90 MHz	4.8	5.8	6.8	dB
Color carrier	35.32 MHz	0.8	1.8	2.8	dB
Sound carrier	34.40 MHz	17.0	18.5	20.0	dB
Adj. picture carrier	32.90 MHz	40.0	49.0	—	dB
Adj. sound carrier	40.40 MHz	40.0	51.0	—	dB
Lower sidelobe					
	25.00 ... 32.90 MHz	38.0	44.0	—	dB
Upper sidelobe					
	40.40 ... 45.00 MHz	33.0	39.0	—	dB
Reflected wave signal suppression					
1.3 µs ... 6.0 µs after main pulse (test pulse 250 ns, carrier frequency 37.40 MHz)		42.0	50.0	—	dB
Feedthrough signal suppression					
1.2 µs ... 1.1 µs before main pulse (test pulse 250 ns, carrier frequency 37.40 MHz)		—	50.0	—	dB
Group delay ripple (p-p)	$\Delta\tau$	—	50	—	ns
Impedance at 37.40 MHz					
Input: $Z_{IN} = R_{IN} \parallel C_{IN}$		—	1.3 ‖ 19.6	—	kΩ ‖ pF
Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$		—	3.2 ‖ 3.2	—	kΩ ‖ pF
Temperature coefficient of frequency	TC_f	—	–72	—	ppm/K

Maximum ratings

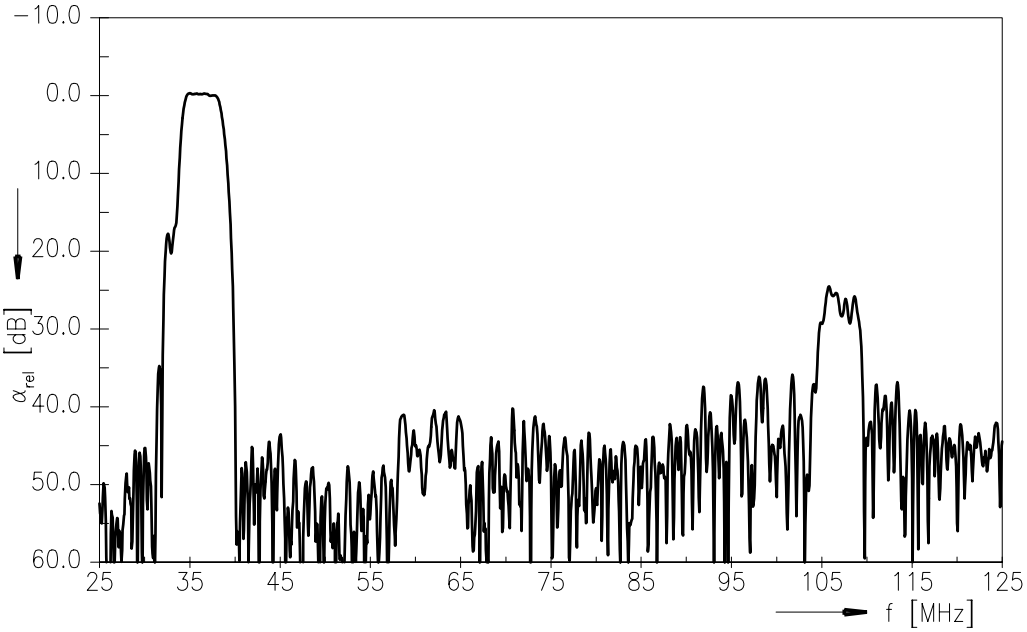
Operable temperature range	T	–25 / +65	˚C	
Storage temperature range	T_{stg}	–40 / +85	˚C	
DC voltage	V_{DC}	5	V	between any terminals
AC voltage	V_{pp}	10	V	between any terminals

Frequency response in B/G, D/K mode

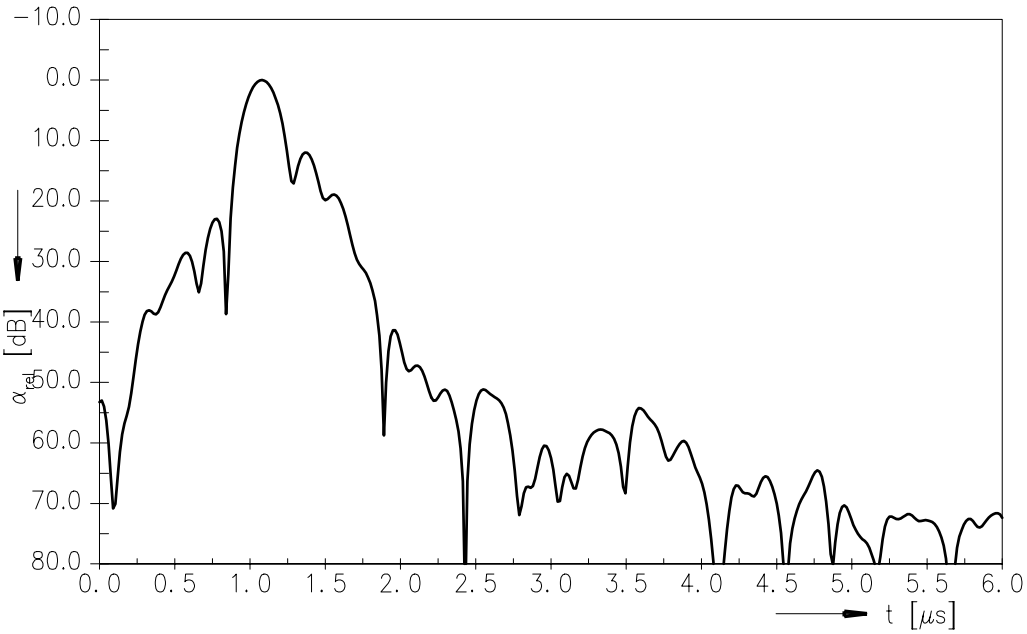




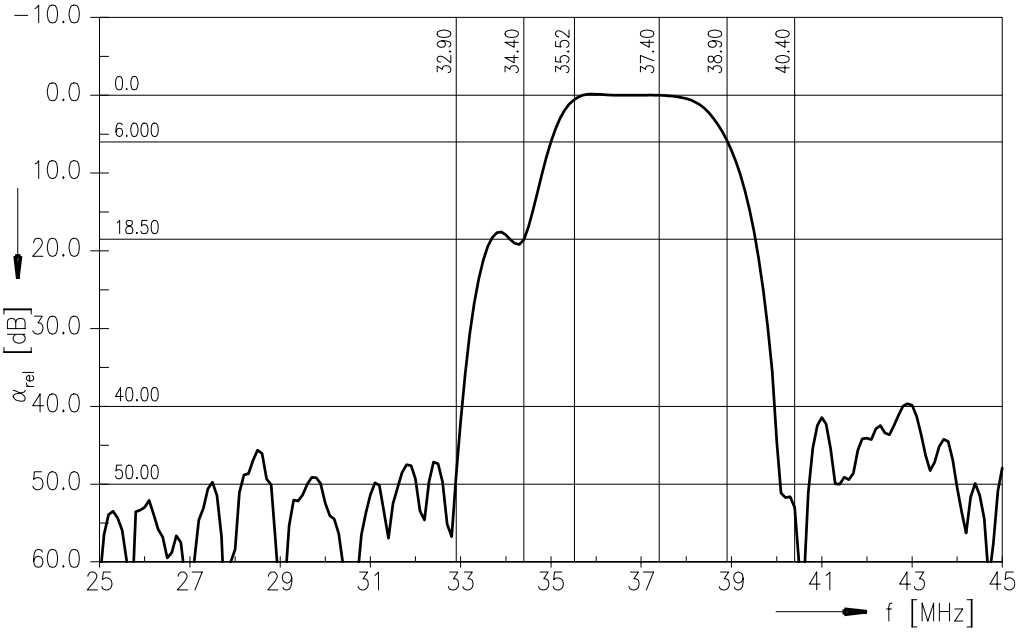
Frequency response B/G, D/K mode

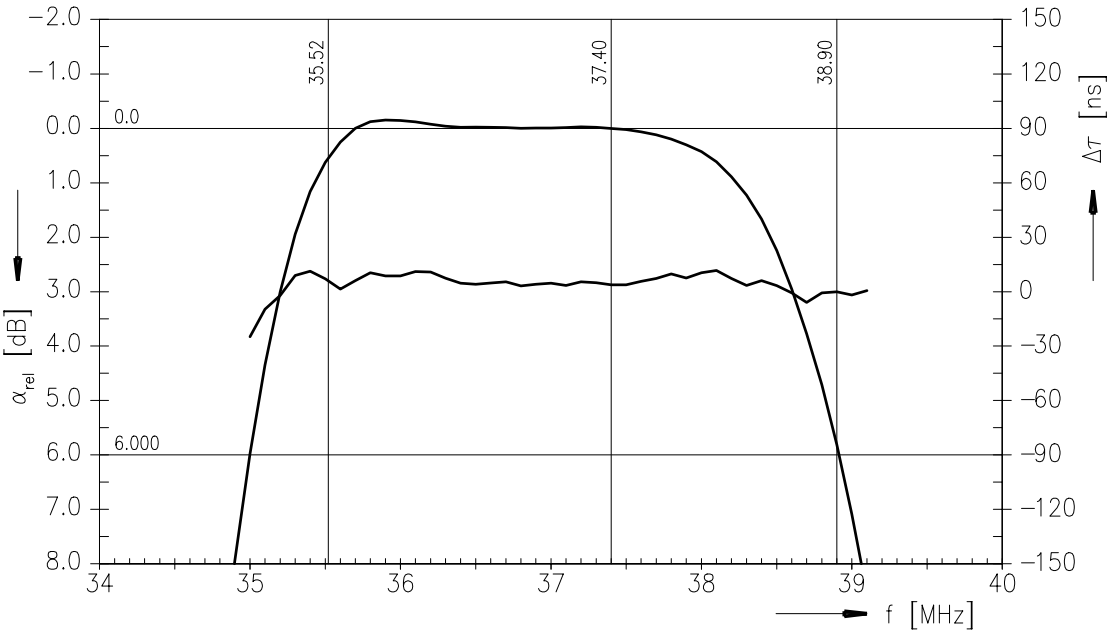


Time domain response B/G, D/K mode

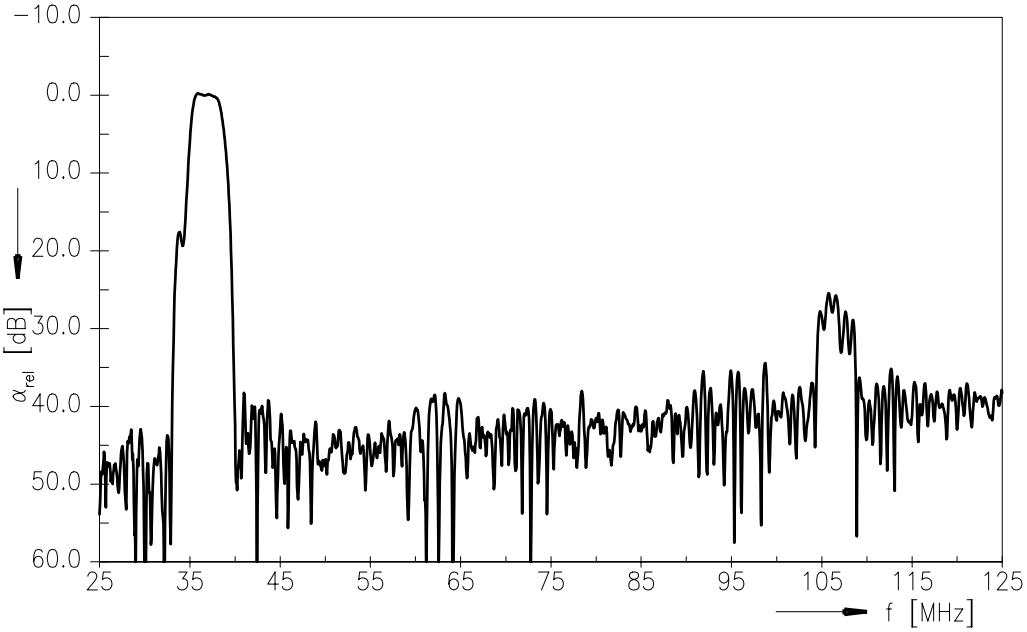


Frequency response in M/N mode

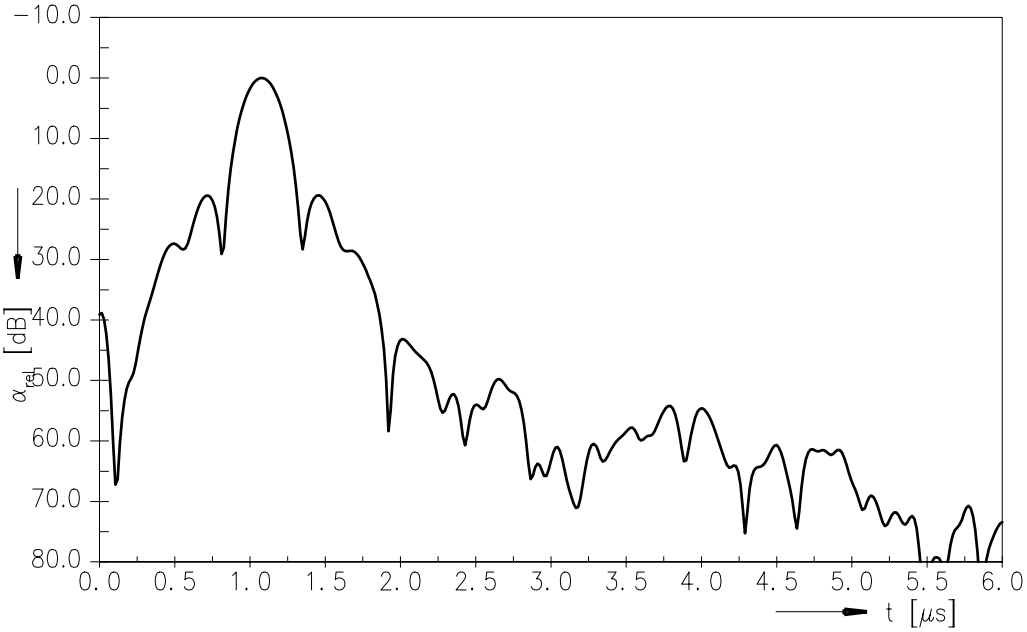




Frequency response M/N mode



Time domain response M/N mode



References

Type	K 7291 M
Ordering code	B39389-K7291-M100
Marking and package	C61157-A1-A15
Packaging	F61074-V8067-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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