# SAW multimedia filters

## Series/Type: K9656D

The following products presented in this data sheet are being withdrawn.

| Ordering Code | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|---|---|---|---|---|
| B39389K9656N201 | | 2011-01-14 | 2011-09-30 | 2012-09-30 |

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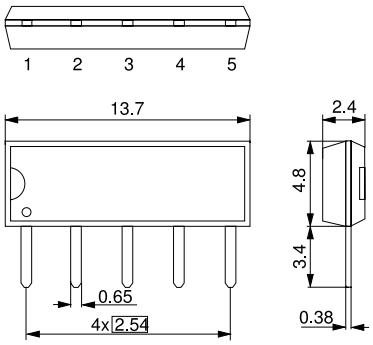
## Application

- Standard: B/G, D/K, I, L/L'
- TV IF audio filter with two channels
- Channel 1 (L') with one pass band for sound carrier at 40.40 MHz (L') and 39.75 MHz (L'-NICAM)
- Channel 2 (B/G, D/K, I, L) with one pass band for sound carriers between 32.35 MHz and 33.40 MHz

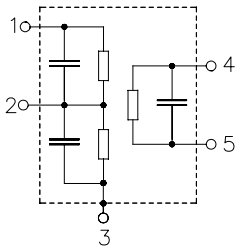
## Features

- Duroplast package **SIP5D**
- Approximate weight 0.5 g
- Standard IC package
- RoHS compatible
- Tinned CuFe alloy terminals




## Pin configuration

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



**Characteristics of channel 1(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** | $\alpha$ | | | | |
| Reference level for the following data | 40.40 MHz | 14.3 | 16.3 | 18.3 | dB |
| **Relative attenuation** | $\alpha_{rel}$ | | | | |
| | 39.75 MHz | –1.5 | –0.5 | 0.5 | dB |
| | 38.40 MHz | 25.0 | 36.0 | — | dB |
| Picture carrier | 33.90 MHz | 36.0 | 48.0 | — | dB |
| Adj. picture carrier | 41.90 MHz | 26.0 | 35.0 | — | dB |
| Adj. sound carrier | 32.40 MHz | 32.0 | 42.0 | — | dB |
| Lower sidelobe | | | | | |
| 25.00 ... 33.90 MHz | | 33.0 | 39.0 | — | dB |
| Upper sidelobe | | | | | |
| 41.90 ... 45.00 MHz | | 27.0 | 35.0 | — | dB |
| **Group delay ripple (p-p)** | $\Delta\tau$ | — | 40 | — | ns |
| **Impedance** at 40.40 MHz | | | | | |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ | | — | 0.8 ‖ 10.1 | — | kΩ \|\| pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | — | 2.7 ‖ 5.3 | — | kΩ \|\| pF |
| **Temperature coefficient of frequency** | $TC_f$ | — | –72 | — | ppm/K |

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

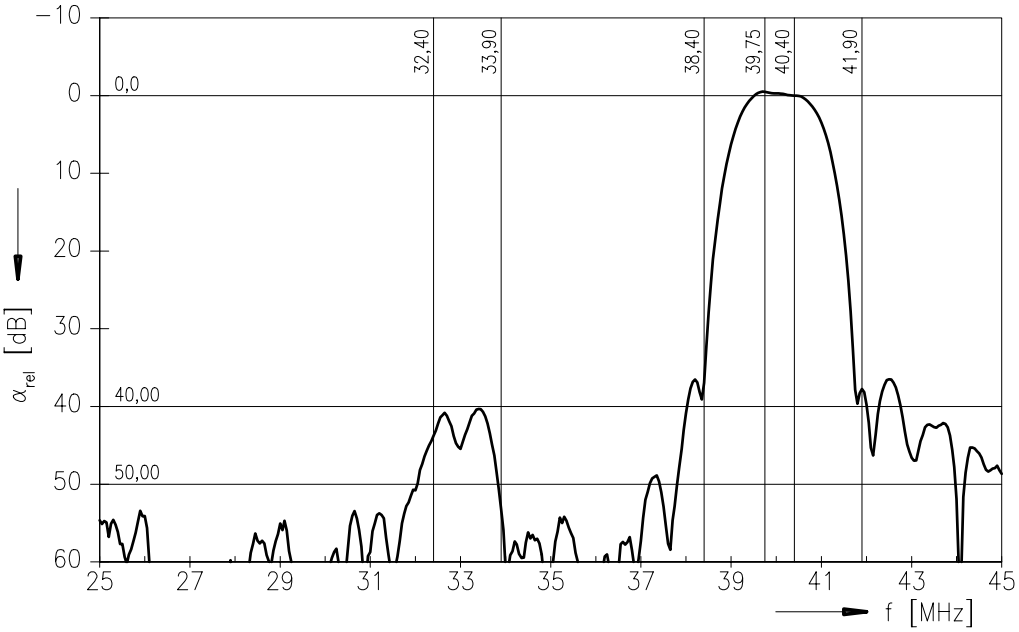
Reference temperature: $T_A$ = 25 ˚C
Terminating source impedance: $Z_S$ = 50 Ω
Terminating load impedance: $Z_L$ = 2 kΩ || 3 pF

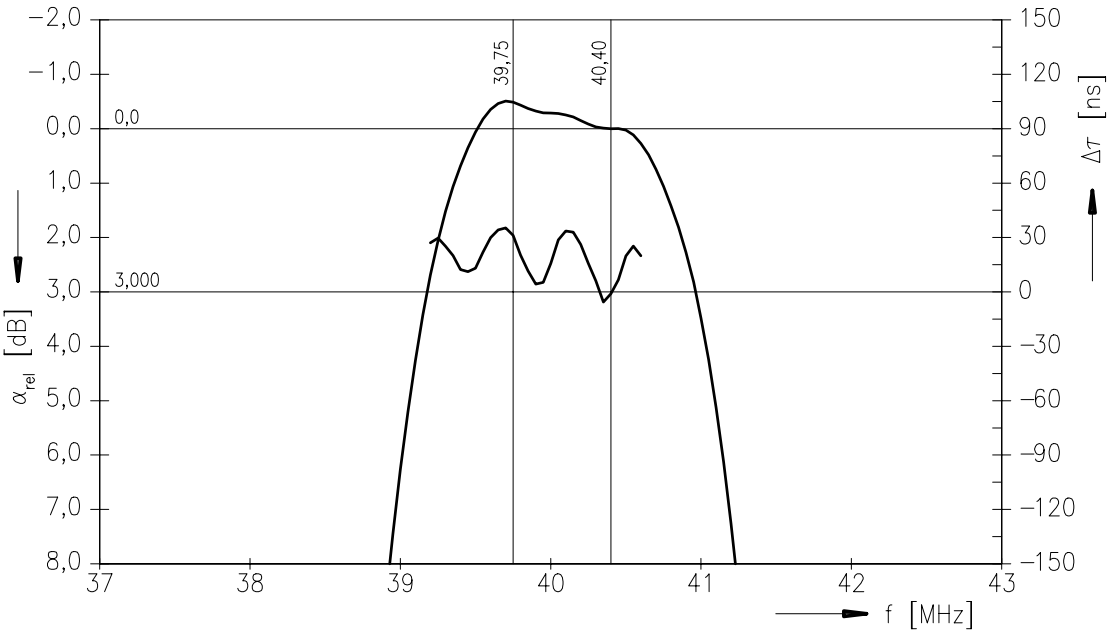
| | | | min. | typ. @ 25 ˚C | max. | |
|---|---|---|---|---|---|---|
| **Insertion attenuation** | | $\alpha$ | | | | |
| Reference level for the following data | 33.40 MHz | | 13.8 | 15.8 | 17.8 | dB |
| **Relative attenuation** | | $\alpha_{rel}$ | | | | |
| Sound carrier B/G-NICAM | 33.05 MHz | | –1.4 | –0.4 | 0.6 | dB |
| Sound carrier I | 32.90 MHz | | –1.3 | –0.3 | 0.7 | dB |
| Sound carrier D/K, L | 32.40 MHz | | 0.5 | 1.5 | 2.5 | dB |
| Picture carrier | 38.90 MHz | | 26.0 | 33.0 | — | dB |
| Color carrier | 34.47 MHz | | 17.0 | 25.0 | — | dB |
| Adj. picture carrier | 30.90 MHz | | 38.0 | 50.0 | — | dB |
| | 31.90 MHz | | — | 10.5 | — | dB |
| Adj. sound carrier | 40.40 MHz | | 28.0 | 36.0 | — | dB |
| | 40.90 MHz | | 31.0 | 38.0 | — | dB |
| | 41.40 MHz | | 31.0 | 38.0 | — | dB |
| Lower sidelobe | | | | | | |
| | 25.00 ... 30.90 MHz | | 37.0 | 43.0 | — | dB |
| Upper sidelobe | | | | | | |
| | 40.40 ... 45.00 MHz | | 29.0 | 35.0 | — | dB |
| **Impedance** at 33.40 MHz | | | | | | |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$ | | | — | 0.9 ‖ 14.6 | — | kΩ \|\| pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$ | | | — | 2.6 ‖ 5.6 | — | kΩ \|\| pF |
| **Temperature coefficient of frequency** | | $TC_f$ | — | –72 | — | ppm/K |

**Maximum ratings**

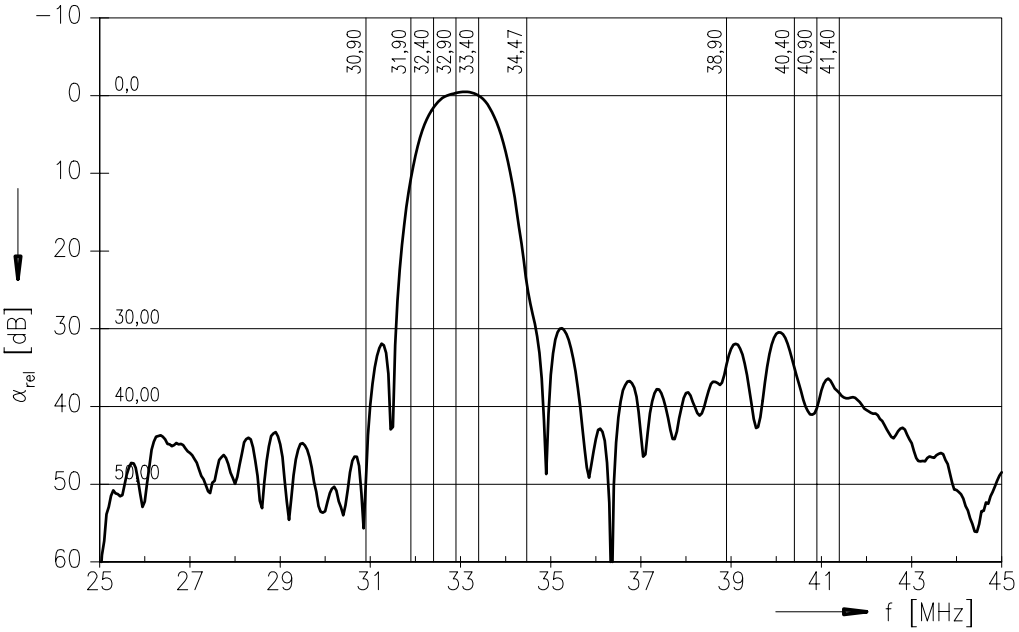
| | | | | |
|---|---|---|---|---|
| Operable temperature range | T | –25 / +65 | °C | |
| Storage temperature range | $T_{stg}$ | –40 / +85 | °C | |
| DC voltage | $V_{DC}$ | 5 | V | between any terminals |
| AC voltage | $V_{pp}$ | 10 | V | between any terminals |

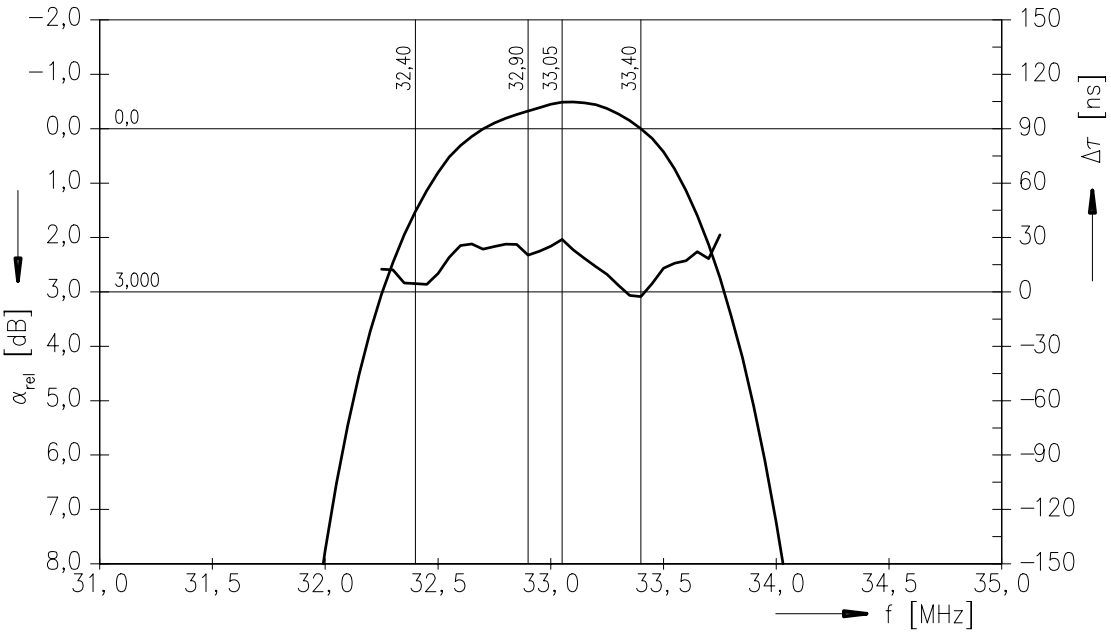
**Frequency response of channel 1**



**Frequency response of channel 2**



**References**

| | |
|---|---|
| **Type** | K 9656 D |
| **Ordering code** | B39389-K9656-N201 |
| **Marking and package** | C61157-A1-A21 |
| **Packaging** | F61074-V8049-Z000 |
| **Date codes** | L_1126 |
| **S-parameters** | |
| **Soldering profile** | S_6001 |
| **RoHS compatible** | defined as compatible with the following documents:<br>"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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