



# SAW multimedia filters

## Series/Type: **M3953M**

The following products presented in this data sheet are being withdrawn.

| Ordering Code   | Substitute Product | Date of Withdrawal | Deadline Last Orders | Last Shipments |
|-----------------|--------------------|--------------------|----------------------|----------------|
| B39458M3953M100 |                    | 2011-01-14         | 2011-09-30           | 2012-09-30     |

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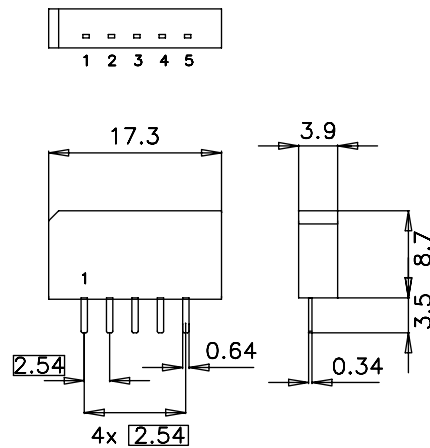
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**Data Sheet**
**Application**

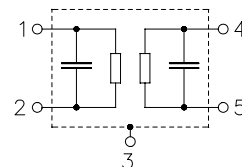
- Standard: M/N
- TV IF filter with Nyquist slope and sound suppression
- High color carrier level
- Constant group delay


**Features**

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


**Pin configuration**

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



**SAW Components**
**M 3953 M**
**SAW IF filter**
**45.75 MHz**
**Data Sheet**
**Characteristics**

Reference temperature:  $T_A = 25 (45) \text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega$   
 Terminating load impedance:  $Z_L = 2 \text{ k}\Omega \parallel 3 \text{ pF}$

|  |                                       | min. | typ.<br>@ 25 °C      | max. |                           |
|--|---------------------------------------|------|----------------------|------|---------------------------|
| <b>Insertion attenuation</b>   | $\alpha$                              |      |                      |      |                           |
| Reference level for the following data   | 44.06 (44.00) MHz                     | 11.2 | 12.7                 | 14.2 | dB                        |
| <b>Relative attenuation</b>  | $\alpha_{rel}$                        |      |                      |      |                           |
| Picture carrier  | 45.81 (45.75) MHz                     | 5.2  | 6.2                  | 7.2  | dB                        |
| Color carrier  | 42.23 (42.17) MHz                     | -0.5 | 0.2                  | 0.9  | dB                        |
|  | 41.98 (41.92) MHz                     | 0.2  | 0.9                  | 1.6  | dB                        |
| Sound carrier  | 41.31 (41.25) MHz                     | 25.0 | 37.0                 | —    | dB                        |
| Adj. picture carrier   | 39.81 (39.75) MHz                     | 48.0 | 63.0                 | —    | dB                        |
| Adj. sound carrier   | 47.31 (47.25) MHz                     | 46.0 | 57.0                 | —    | dB                        |
| Lower sidelobe   | 35.06 ... 39.81 (35.00 ... 39.75) MHz | 40.0 | 45.0                 | —    | dB                        |
| Upper sidelobe   | 47.31 ... 55.06 (47.25 ... 55.00) MHz | 37.0 | 43.0                 | —    | dB                        |
| <b>Reflected wave signal suppression</b>   |                                       |      |                      |      |                           |
| 1.3 $\mu\text{s}$ ... 6.0 $\mu\text{s}$ after main pulse<br>(test pulse 250 ns,<br>carrier frequency 44.06 MHz)  |                                       | 42.0 | 52.0                 | —    | dB                        |
| <b>Feedthrough signal suppression</b>  |                                       |      |                      |      |                           |
| 1.3 $\mu\text{s}$ ... 1.2 $\mu\text{s}$ before main pulse<br>(test pulse 250 ns,<br>carrier frequency 44.06 MHz) |                                       | 50.0 | 56.0                 | —    | dB                        |
| <b>Group delay ripple (p-p)</b>  | $\Delta\tau$                          | —    | 40                   | —    | ns                        |
| <b>Impedance at 44.06 MHz</b>  |                                       |      |                      |      |                           |
| Input: $Z_{IN} = R_{IN} \parallel C_{IN}$  |                                       | —    | 1.1 $\parallel$ 15.6 | —    | k $\Omega$ $\parallel$ pF |
| Output: $Z_{OUT} = R_{OUT} \parallel C_{OUT}$  |                                       | —    | 1.0 $\parallel$ 4.0  | —    | k $\Omega$ $\parallel$ pF |
| <b>Temperature coefficient of frequency</b>  | $TC_f$                                | —    | -72                  | —    | ppm/K                     |

**SAW Components**

**M 3953 M**

**SAW IF filter**

**45.75 MHz**

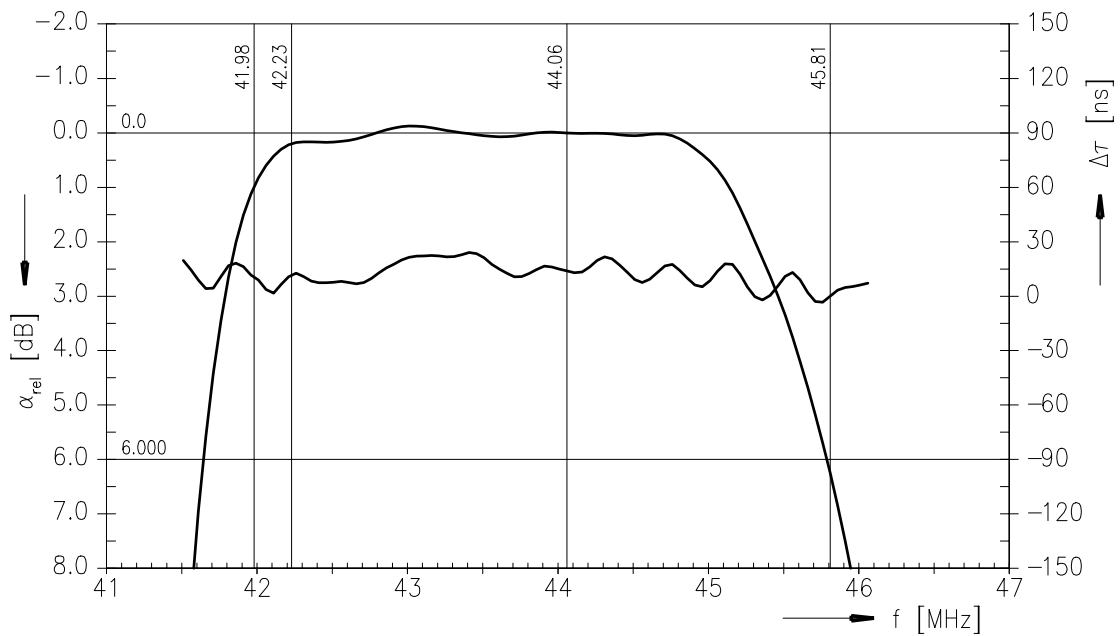
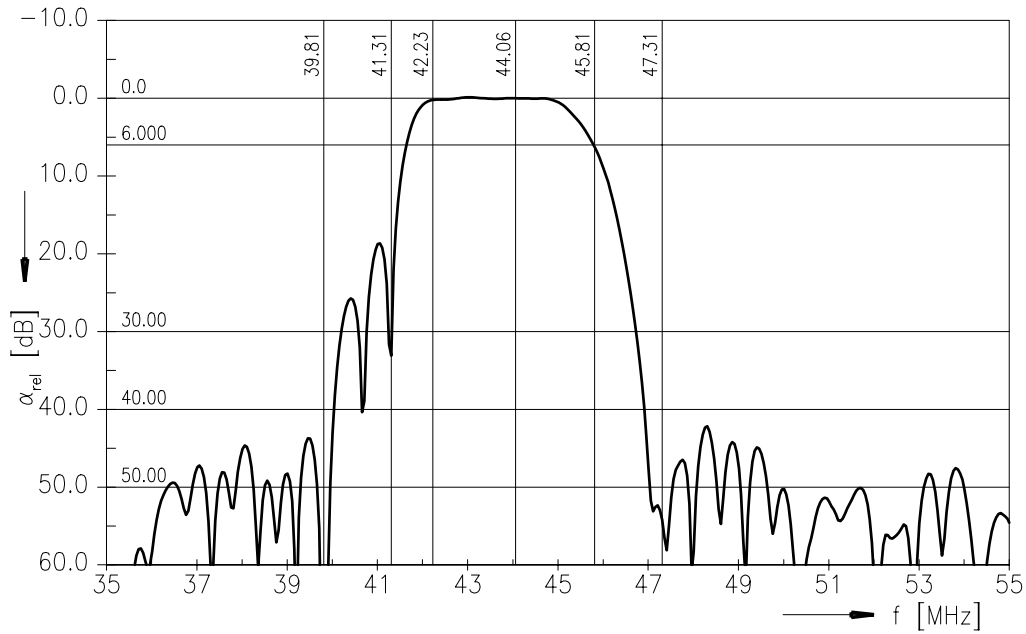
**Data Sheet**

**Maximum ratings**

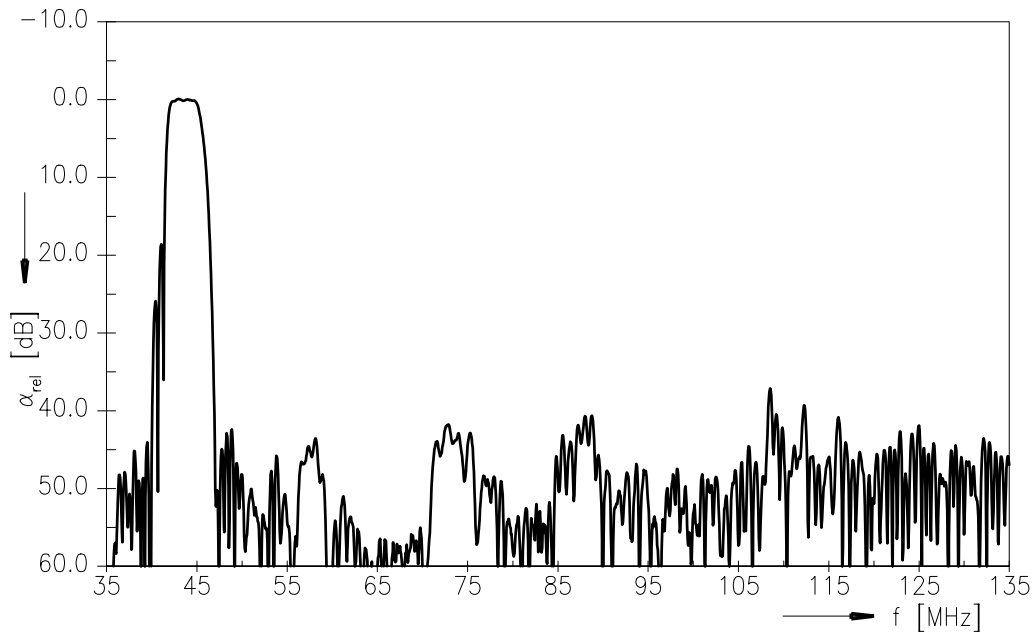
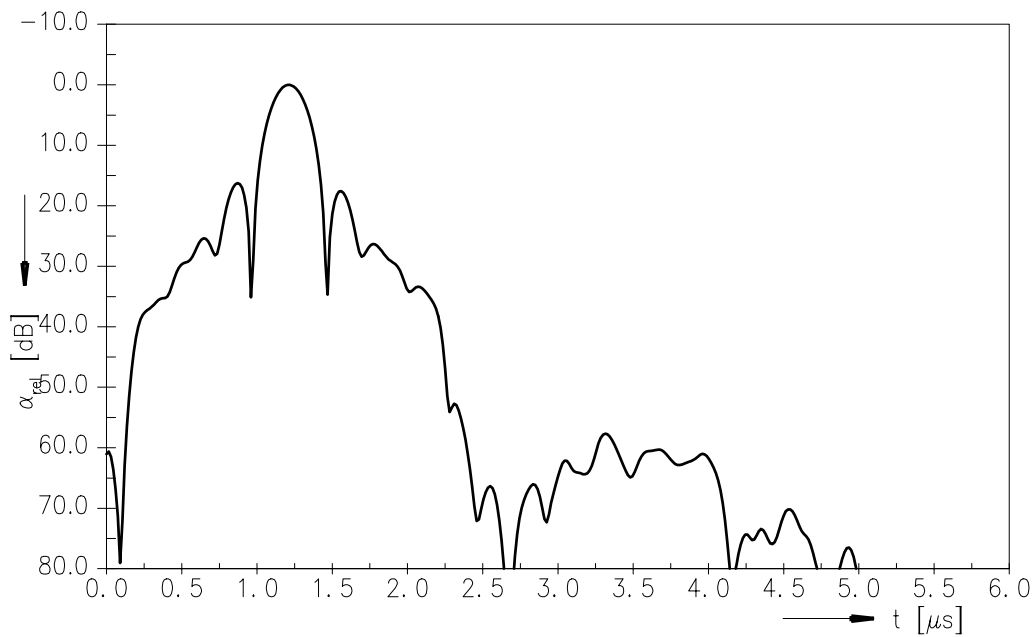
|                            |                  |           |    |                       |
|----------------------------|------------------|-----------|----|-----------------------|
| Operable temperature range | T                | -25 / +65 | °C |                       |
| Storage temperature range  | T <sub>stg</sub> | -40 / +85 | °C |                       |
| DC voltage                 | V <sub>DC</sub>  | 5         | V  |                       |
| AC voltage                 | V <sub>pp</sub>  | 10        | V  | between any terminals |

Data Sheet

Frequency response



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

**Data Sheet**
**Frequency response**

**Time domain response**


|                       |                  |
|-----------------------|------------------|
| <b>SAW Components</b> | <b>M 3953 M</b>  |
| <b>SAW IF filter</b>  | <b>45.75 MHz</b> |

Data Sheet

References

|                            |  |
|----------------------------|--|
| <b>Type</b>                | M 3953 M   |
| <b>Ordering code</b>       | B39458-M3953-M100  |
| <b>Marking and package</b> | C61157-A1-A15  |
| <b>Packaging</b>           | F61074-V8067-Z000  |
| <b>Date codes</b>          | L_1126   |
| <b>S-parameters</b>        |  |
| <b>Soldering profile</b>   | S_6001   |
| <b>RoHS compatible</b>     | 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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