



## **SAW Components**

### **SAW filter**

MediaFLO

|                       |                        |
|-----------------------|------------------------|
| <b>Series/type:</b>   | <b>B7739</b>           |
| <b>Ordering code:</b> | <b>B39711B7739K710</b> |
| <b>Date:</b>          | <b>May 16, 2006</b>    |
| <b>Version:</b>       | <b>2.0</b>             |



## SAW Components

B7739

## SAW filter

707.0 MHz

## Data sheet



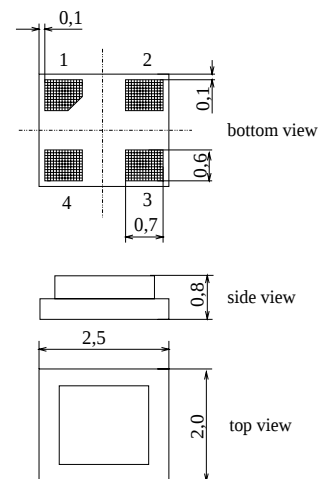
### Application

- Low-loss RF filter for MediaFLO TV application in mobile telephone systems
- High selectivity
- Usable passband: 5 MHz
- No matching required for operation at 50Ω



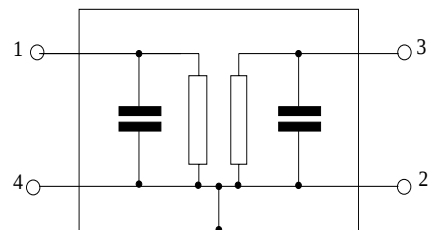
### Features

- Package size 2.5 x 2.0 x 0.8 mm<sup>3</sup>
- Package code DCS4H
- RoHS compatible
- Approximate weight 0.015 g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**



### Pin configuration

- 1 Input
- 3 Output
- 2,4 To be grounded





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#### Characteristics

|                                      |                       |
|--------------------------------------|-----------------------|
| Temperature range for specification: | T = -30 °C to +85 °C  |
| Terminating source impedance:        | Z <sub>S</sub> = 50 Ω |
| Terminating load impedance:          | Z <sub>L</sub> = 50 Ω |

|                                      |                  | min.              | typ.<br>@ 25 °C | max. |                                 |
|--------------------------------------|------------------|-------------------|-----------------|------|---------------------------------|
| <b>Center frequency</b>              | f <sub>C</sub>   | —                 | 707.0           | —    | MHz                             |
| <b>Maximum insertion attenuation</b> | α <sub>max</sub> |                   |                 |      |                                 |
| 704.5 ... 709.5 MHz                  |                  | —                 | 2.6             | 3.0  | dB <sub>INT</sub> <sup>1)</sup> |
| <b>Amplitude ripple (p-p)</b>        | Δα               |                   |                 |      |                                 |
| 704.5 ... 709.5 MHz                  |                  | —                 | 0.4             | 2.0  | dB                              |
| <b>Return Loss (Input/Output)</b>    |                  |                   |                 |      |                                 |
| 704.5 ... 709.5 MHz                  |                  | 10.0              | 16.0            | —    |                                 |
| <b>Group delay ripple (p-p)</b>      |                  |                   |                 |      |                                 |
| 704.5 ... 709.5 MHz                  |                  | —                 | 20              | 80   | ns                              |
| <b>Attenuation</b>                   | α                |                   |                 |      |                                 |
| 0.1 ... 678.0 MHz                    |                  | 40.0              | 46.0            | —    | dB                              |
| 678.0 ... 692.0 MHz                  |                  | 35.0              | 40.0            | —    | dB                              |
| 692.0 ... 698.0 MHz                  |                  | 30.0              | 40.0            | —    | dB <sub>INT</sub>               |
| 698.0 ... 704.0 MHz                  |                  | 4.5 <sup>2)</sup> | 9.5             | —    | dB <sub>INT</sub>               |
| 710.0 ... 716.0 MHz                  |                  | 4.5 <sup>3)</sup> | 9.0             | —    | dB <sub>INT</sub>               |
| 716.0 ... 722.0 MHz                  |                  | 30.0              | 36.0            | —    | dB <sub>INT</sub>               |
| 722.0 ... 738.0 MHz                  |                  | 29.0              | 34.0            | —    | dB                              |
| 738.0 ... 812.0 MHz                  |                  | 40.0              | 45.0            | —    | dB                              |
| 812.0 ... 948.0 MHz                  |                  | 45.0              | 50.0            | —    | dB                              |
| 948.0 ... 2500.0 MHz                 |                  | 32.0              | 37.0            | —    | dB                              |

<sup>1)</sup> dB<sub>INT</sub> is integrated rejection (see formula below)

$$dB_{INT} = \frac{\sum_{n=2}^N \frac{Loss(F_{n-1}) + Loss(F_n)}{2} \times (F_n - F_{n-1})}{F_N - F_1}$$

Where Loss(F<sub>n</sub>) = 10<sup>(S<sub>21</sub>indB)/20</sup>

N = Number of frequency, insertion pairs

<sup>2)</sup> 7.0dB<sub>INT</sub> at 25°C

<sup>3)</sup> 7.0dB<sub>INT</sub> at 25°C

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



|                |     |           |
|----------------|-----|-----------|
| SAW Components |     | B7739     |
| SAW filter     |     | 707.0 MHz |
| Data sheet     | SMD |           |

#### Maximum ratings

|                            |                  |                   |     |                          |
|----------------------------|------------------|-------------------|-----|--------------------------|
| Operable temperature range | T                | −40/+85           | °C  | machine model, 10 pulses |
| Storage temperature range  | T <sub>stg</sub> | −40/+85           | °C  |                          |
| DC voltage                 | V <sub>DC</sub>  | 3                 | V   |                          |
| ESD voltage                | V <sub>ESD</sub> | 100 <sup>1)</sup> | V   |                          |
| Input power at             |                  |                   |     |                          |
| 400.0 ... 500.0MHz         | P <sub>IN</sub>  | 15                | dBm | CW                       |
| 800.0 ... 2500.0MHz        |                  |                   |     |                          |

<sup>1)</sup> acc. to JESD22-A115A (machine model), 10 negative & 10 positive pulses.



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B7739

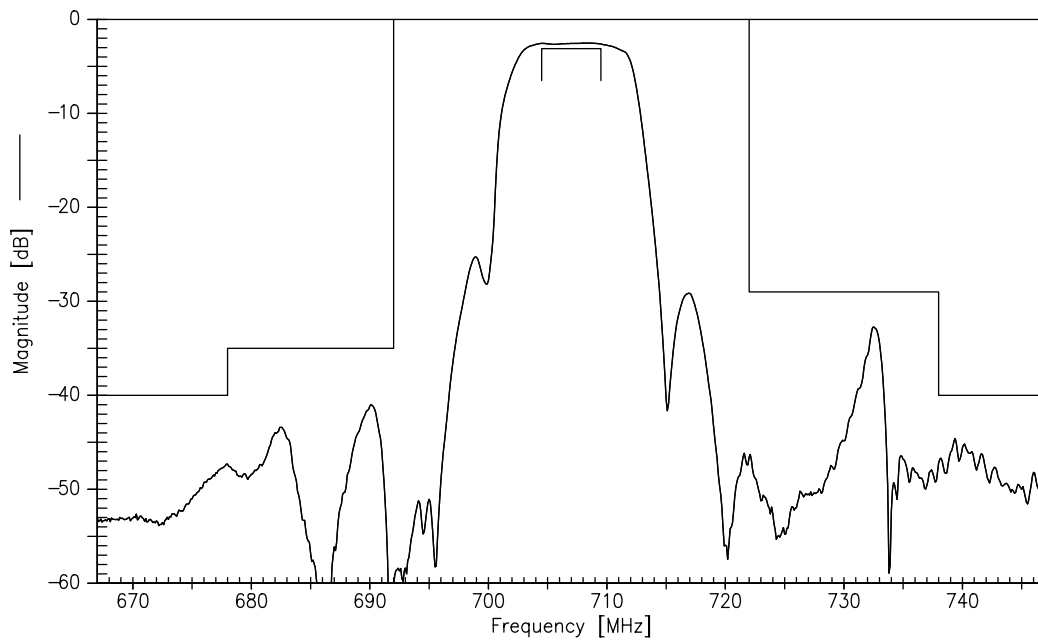
## SAW filter

707.0 MHz

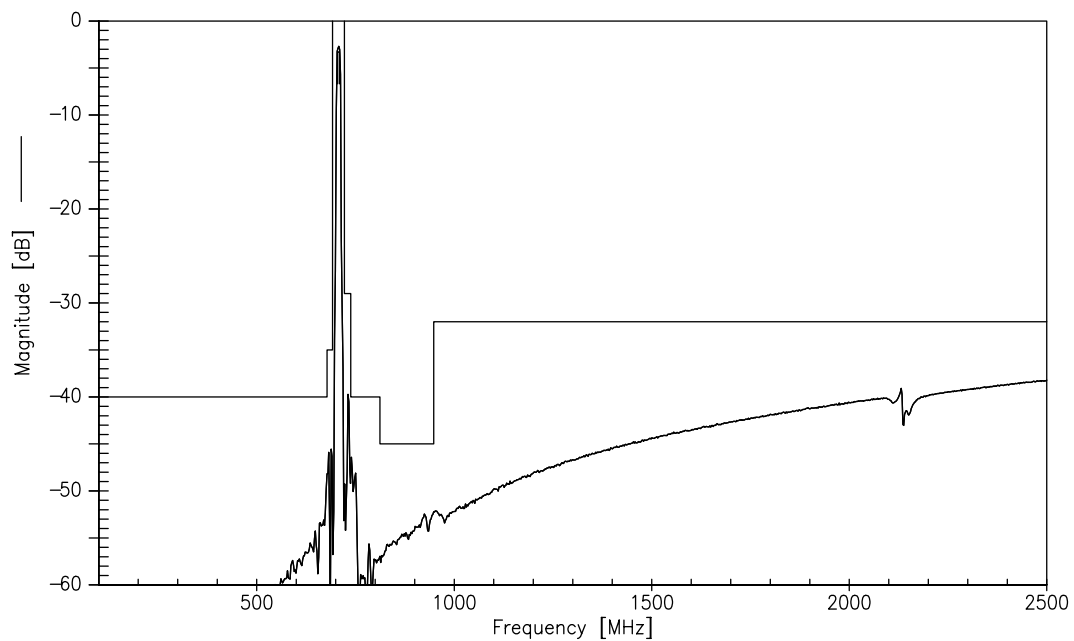
## Data sheet



## Transfer function



## Transfer function (wideband)



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



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B7739

### SAW filter

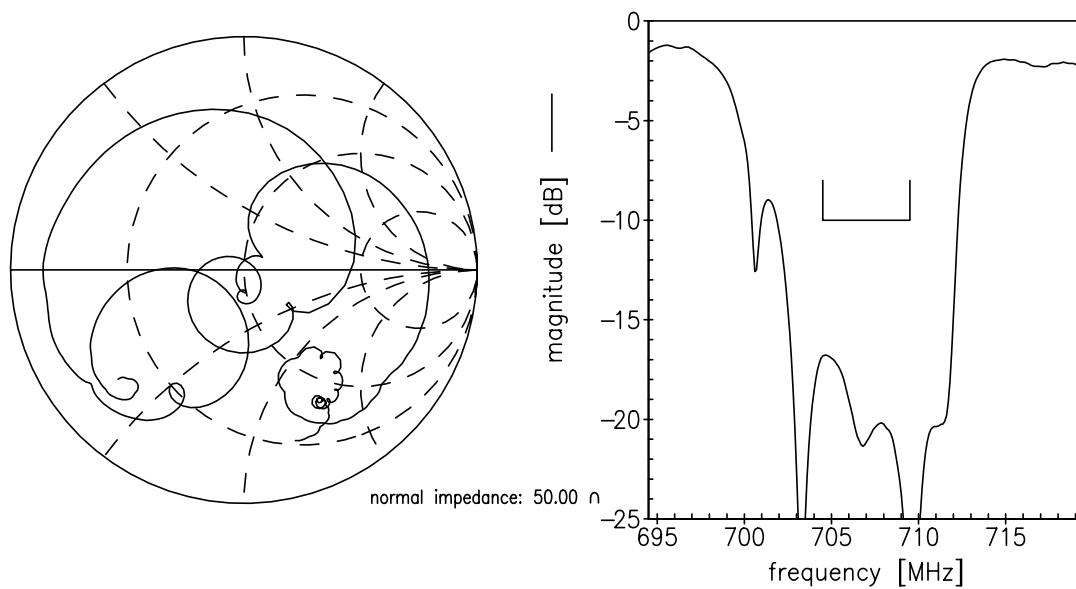
707.0 MHz

Data sheet

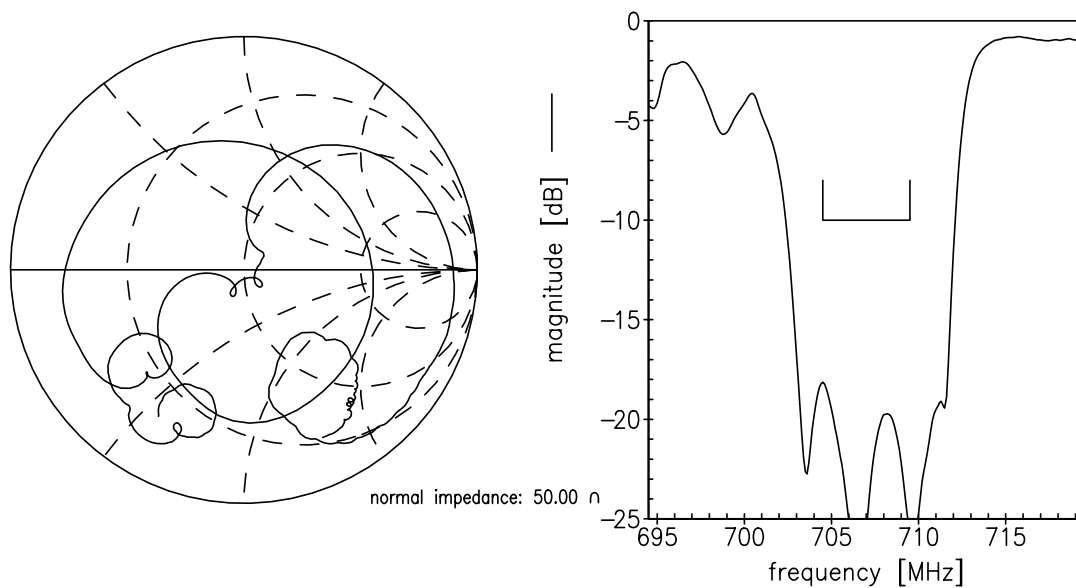


Smith charts

$S_{11}$  function



$S_{22}$  function



**SAW Components****B7739****SAW filter****707.0 MHz**

Data sheet

**References**

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Type</b>                | B7739                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Ordering code</b>       | B39711B7739K710                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Marking and package</b> | C61157-A7-A80                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Packaging</b>           | F61074-V8189-Z000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Date codes</b>          | L_1126                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>S-parameters</b>        | B7739_NB.s2p<br>B7739_WB.s2p                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <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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