



# *SAW Components*

*Data Sheet B5029*

Data Sheet

An abstract, grayscale background graphic featuring a globe with a grid pattern, overlaid with a large, stylized, and slightly blurred "EPCOS" logo. The logo is rendered in a light gray, almost white, color, giving it a three-dimensional appearance as if it's floating or attached to the globe. The overall effect is a modern, technological aesthetic.



## SAW Components

B5029

## Low-Loss Filter

153,6 MHz

### Data Sheet

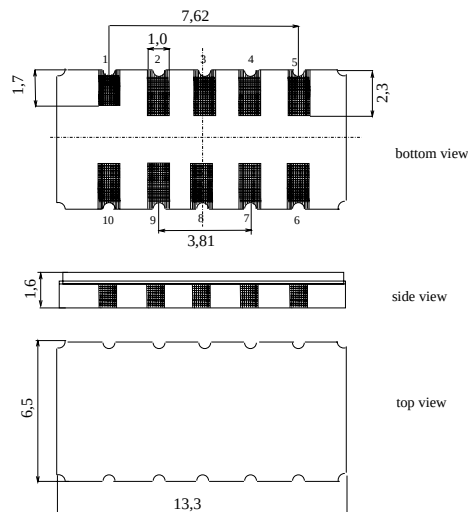
#### Features

- Low-loss IF filter for W-CDMA base station, transmit path
- 32 MHz usable bandwidth
- Balanced or unbalanced operation possible
- Hermetically sealed ceramic SMD package

#### Terminals

- Gold plated

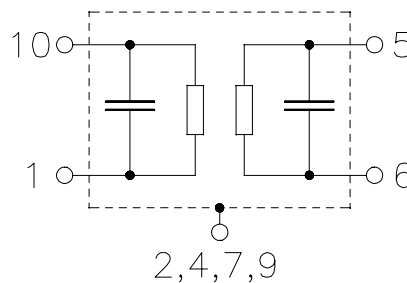
#### Ceramic package DCC12A



Dimensions in mm, approx. weight 0,4 g

#### Pin configuration

|            |                |
|------------|----------------|
| 10         | Input          |
| 1          | Input ground   |
| 5          | Output         |
| 6          | Output ground  |
| 2, 4, 7, 9 | Case Ground    |
| 3, 8       | To be grounded |



| Type  | Ordering code     | Marking and Package according to | Packing according to |
|-------|-------------------|----------------------------------|----------------------|
| B5029 | B39151-B5029-H510 | C61157-A7-A94                    | F61074-V8163-Z000    |

Electrostatic Sensitive Device (ESD)

#### Maximum ratings

|                            |           |           |     |
|----------------------------|-----------|-----------|-----|
| Operable temperature range | $T$       | -30 / +85 | °C  |
| Storage temperature range  | $T_{stg}$ | -30 / +85 | °C  |
| DC voltage                 | $V_{DC}$  | 0         | V   |
| Source power               | $P_s$     | 0         | dBm |



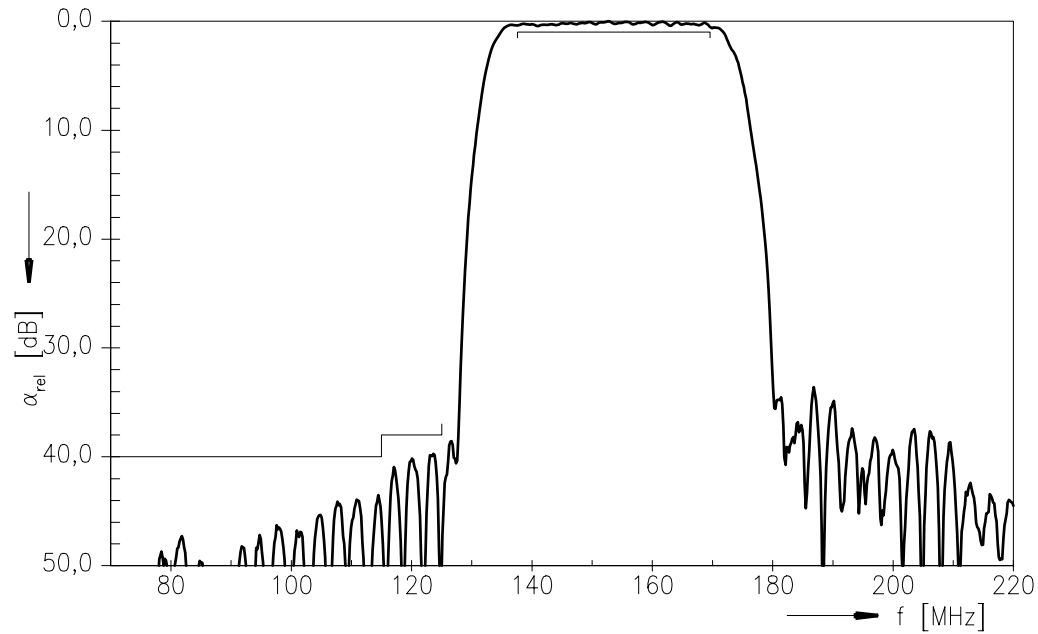
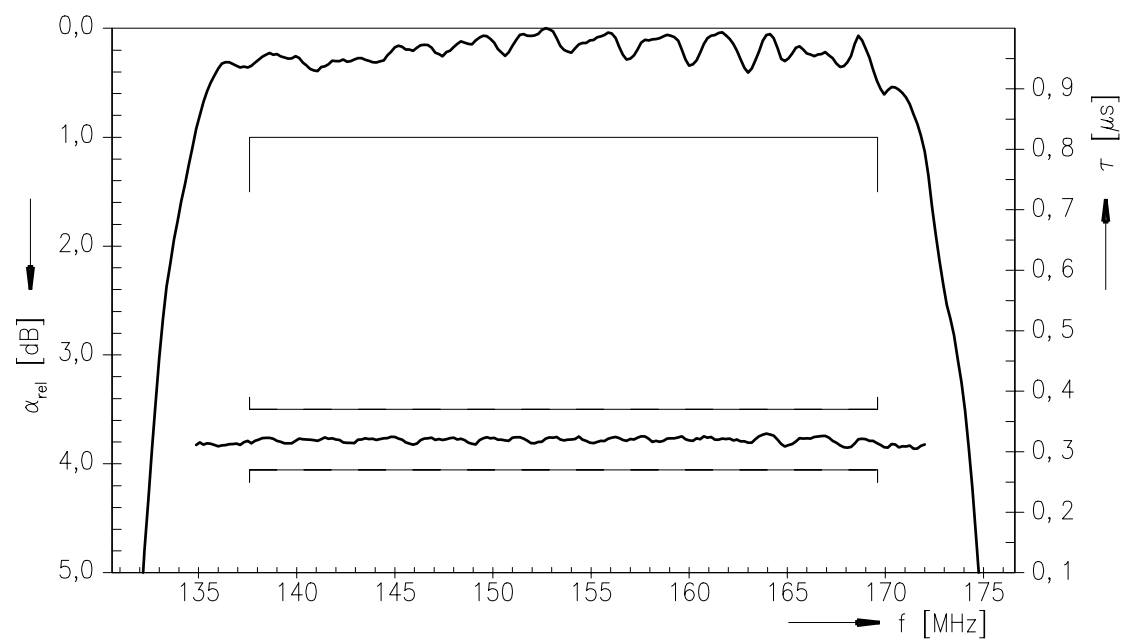
|                        |                  |
|------------------------|------------------|
| <b>SAW Components</b>  | <b>B5029</b>     |
| <b>Low-Loss Filter</b> | <b>153,6 MHz</b> |

## Data Sheet

### Characteristics

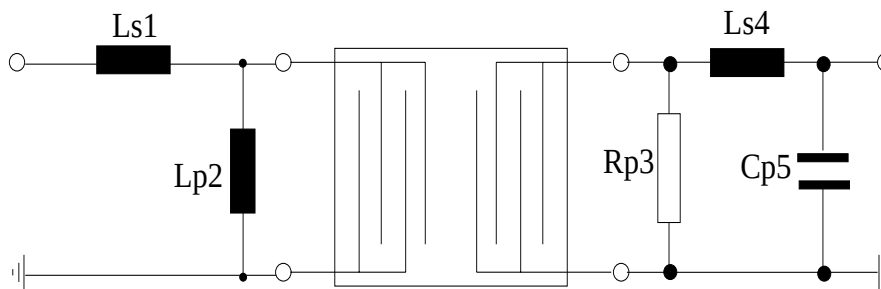
Operating temperature range:  $T = -10 \dots 80 \text{ }^{\circ}\text{C}$   
 Terminating source impedance:  $Z_S = 50 \text{ } \Omega$  unbalanced and matching network  
 Terminating load impedance:  $Z_L = 50 \text{ } \Omega$  unbalanced and matching network

|                                                                      |                           |  | min. | typ.  | max. |               |
|----------------------------------------------------------------------|---------------------------|--|------|-------|------|---------------|
| <b>Nominal frequency</b>                                             | $f_N$                     |  | —    | 153,6 | —    | MHz           |
| <b>Minimum insertion attenuation</b><br>(including matching network) | $\alpha_{\min}$           |  | —    | 12,5  | 15,0 | dB            |
| <b>Passband width</b><br>$\alpha_{\text{rel}} \leq 1 \text{ dB}$     | $B_{1\text{dB}}$          |  | 32   | 37    | —    | MHz           |
| <b>Amplitude ripple (p-p)</b><br>$f_N \pm 16 \text{ MHz}$            | $\Delta\alpha$            |  | —    | 0,6   | 1,0  | dB            |
| <b>Group delay ripple (p-p)</b><br>$f_N \pm 16 \text{ MHz}$          | $\Delta\tau$              |  | —    | 25    | 100  | ns            |
| <b>Absolute Group delay</b><br>$f_N \pm 16 \text{ MHz}$              | $\tau$                    |  | —    | 0,32  | 0,6  | $\mu\text{s}$ |
| <b>Phase ripple (rms)</b><br>$f_N \pm 16 \text{ MHz}$                | $\Delta\phi_{\text{rms}}$ |  | —    | 1,1   | 1,5  | $^{\circ}$    |
| <b>Phase ripple (p-p)</b><br>$f_N \pm 16 \text{ MHz}$                | $\Delta\phi_{\text{p-p}}$ |  | —    | 7     | 10   | $^{\circ}$    |
| <b>Relative attenuation (relative to <math>\alpha_{\min}</math>)</b> | $\alpha_{\text{rel}}$     |  |      |       |      |               |
| 70 MHz ... 115 MHz                                                   |                           |  | 40   | 42    | —    | dB            |
| 115 MHz ... 125 MHz                                                  |                           |  | 38   | 40    | —    | dB            |
| 275 MHz ... 350 MHz                                                  |                           |  | 35   | 45    | —    | dB            |
| 400 MHz ... 1000 MHz                                                 |                           |  | 40   | 47    | —    | dB            |
| 1000 MHz ... 2000 MHz                                                |                           |  | 30   | 37    | —    | dB            |
| <b>Input and Output return loss</b><br>$f_N \pm 16 \text{ MHz}$      |                           |  | 6    | 6,5   | —    | dB            |
| <b>Temperature coefficient of frequency</b>                          | $TC_f$                    |  | —    | - 87  | —    | ppm/K         |

**SAW Components****B5029****Low-Loss Filter****153,6 MHz****Data Sheet****Normalized frequency response****Normalized frequency response (pass band)**

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**Matching network to 50  $\Omega$**  (element values depend on pcb layout)



$$L_{s1} = 47 \text{ nH}$$

$$L_{p2} = 62 \text{ nH}$$

$$R_{p3} = 560 \text{ } \Omega$$

$$L_{s4} = 62 \text{ nH}$$

$$C_{p5} = 22 \text{ pF}$$

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