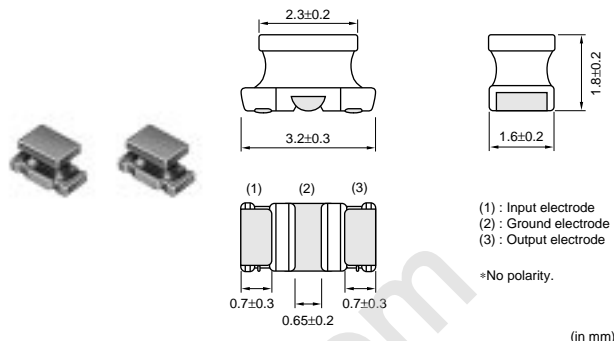


# On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



## Chip EMIFIL® LC Combined Winding Type NFW31S Series

The signal line chip EMI filter NFW31S series consist of high performance EMI suppression filter. They are designed for noise suppression in high speed signal digital circuits in which the signal harmonics are prone to becoming noise sources. These filters achieve a 100dB/dec. (typ.) damping characteristic with Murata's innovative circuit design. This makes these chips effective in applications where the signal and noise frequencies are close to each other.



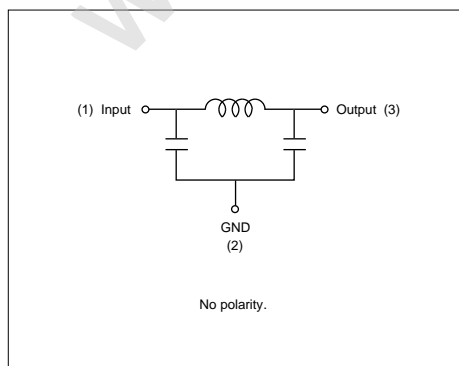
### ■ Features

1. The filters suppress signal noise with little or no attenuation of the signal itself.
2. Murata's original internal structure design enables excellent noise suppression up to high frequencies (40dB at 1GHz typ.).
3. The NFW31S series is available in six different values of cutoff frequency ranging from 10MHz up to 500MHz.

| Part Number    | Nominal Cut-off Freq. (MHz) | Attenuation at 10MHz (dB) | Attenuation at 20MHz (dB) | Attenuation at 50MHz (dB) | Attenuation at 100MHz (dB) | Attenuation at 150MHz (dB) | Attenuation at 200MHz (dB) | Attenuation at 300MHz (dB) | Attenuation at 400MHz (dB) | Attenuation at 500MHz (dB) | Attenuation at 1000MHz (dB) |
|----------------|-----------------------------|---------------------------|---------------------------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|
| NFW31SP106X1E4 | 10                          | 6 max.                    | 5 min.                    | 25 min.                   | 25 min.                    | -                          | 25 min.                    | -                          | -                          | 30 min.                    | 30 min.                     |
| NFW31SP206X1E4 | 20                          | -                         | 6 max.                    | 5 min.                    | 25 min.                    | -                          | 25 min.                    | -                          | -                          | 30 min.                    | 30 min.                     |
| NFW31SP506X1E4 | 50                          | -                         | -                         | 6 max.                    | 10 min.                    | -                          | 30 min.                    | -                          | -                          | 30 min.                    | 30 min.                     |
| NFW31SP107X1E4 | 100                         | -                         | -                         | -                         | 6 max.                     | -                          | 5 min.                     | -                          | -                          | 20 min.                    | 30 min.                     |
| NFW31SP157X1E4 | 150                         | -                         | -                         | -                         | -                          | 6 max.                     | -                          | 10 min.                    | 20 min.                    | 30 min.                    | 30 min.                     |
| NFW31SP207X1E4 | 200                         | -                         | -                         | -                         | -                          | -                          | 6 max.                     | -                          | -                          | 10 min.                    | 30 min.                     |
| NFW31SP307X1E4 | 300                         | -                         | -                         | -                         | -                          | -                          | -                          | 6 max.                     | -                          | 5 min.                     | 15 min.                     |
| NFW31SP407X1E4 | 400                         | -                         | -                         | -                         | -                          | -                          | -                          | -                          | 6 max.                     | -                          | 10 min.                     |
| NFW31SP507X1E4 | 500                         | -                         | -                         | -                         | -                          | -                          | -                          | -                          | -                          | 6 max.                     | 10 min.                     |

Rated Current : 200mA    Rated Voltage : 25Vdc    Operating Temperature Range : -40°C to 85°C

### ■ Equivalent Circuit



### ■ Insertion Loss Characteristics (Typical)

