

# 75 VDC Input PCB Filter

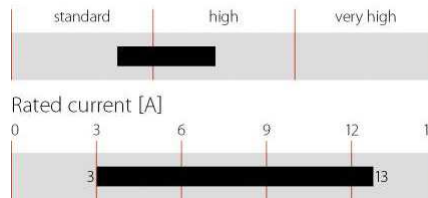


- Rated currents from 3 to 13 A, 75 VDC
- Very compact PCB-mounting design
- Exceptional attenuation performance
- High frequency noise compression



### Performance indicators

Attenuation performance



## Technical specifications

<b>Maximum continuous operating voltage</b>	75 V
<b>Rated currents</b>	3 to 13 A
<b>High potential test voltage</b>	VI1/VI2 → GND 1500 VDC for 2 sec VI1 → VI2 100 VDC for 2 sec
<b>Temperature range (operation and storage)</b>	-40 °C to +100 °C (40/100/21)
<b>Design corresponding to</b>	UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
<b>Flammability corresponding to</b>	UL 94 V-0
<b>MTBF @ 40°C/230 V (Mil-HB-217F)</b>	4,450,000 hours

### Approvals



FN 409 PCB filters are designed to suppress common and differential-mode noise on DC voltage lines. The suppression performance is special designed to fulfill the requirements for high frequency switching DC/DC converter modules. FN 409 filters can also be used to filter the output current of switch-mode power supplies in applications with intelligent power distribution.

### Features and benefits

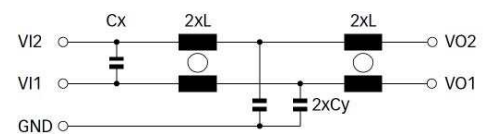
- High common and differential-mode noise suppression
- Rated currents up to 13 A at 75 VDC
- Small form factor
- Good thermal conductance

### Typical applications

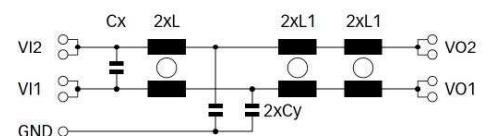
- Input or output filter for high frequency DC/DC converters
- DC output filter for switch-mode power supplies
- Computer and office automation equipment
- Telecom equipment
- Input/output filter within DC power distribution networks

### Typical electrical schematic

3 and 6.5A types



13A types



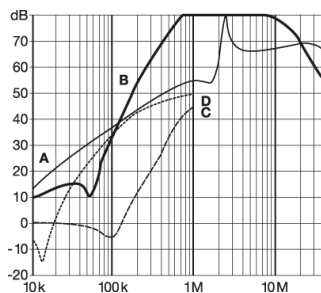
### Filter selection table

Filter	Rated current @ 50 °C (40 °C)	Inductance		Capacitance		DC Resistance R @ 25 °C per path	Input/Output connections	Weight
		L	L1	Cx	Cy			
	[A]	[mH]	[mH]	[nF]	[nF]	[mΩ]		[g]
<b>FN 409-3-02</b>	3 (3.2)	2.9		4700	4.7	86	-02	30
<b>FN 409-6.5-02</b>	6.5 (7)	0.5		4700	4.7	18	-02	30
<b>FN 409-13-02</b>	13 (14)	0.08	0.18	4700	4.7	7.8	-02	47

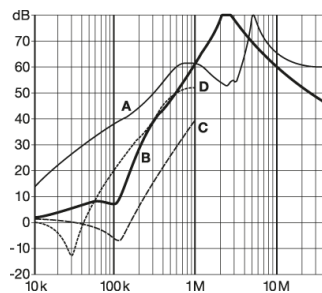
### Typical filter attenuation

Per CISPR 17; A = 50 Ω/50 Ω sym; B = 50 Ω/50 Ω asym; C = 0.1 Ω/100 Ω sym; D = 100 Ω/0.1 Ω sym

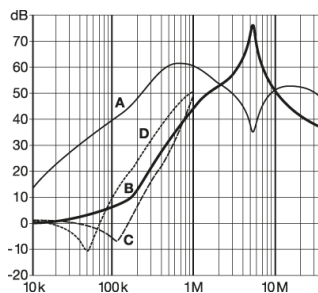
3 A types



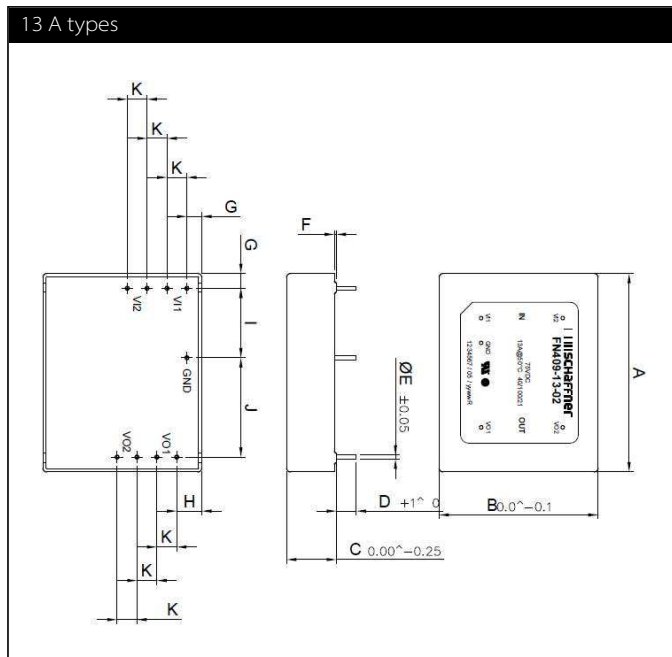
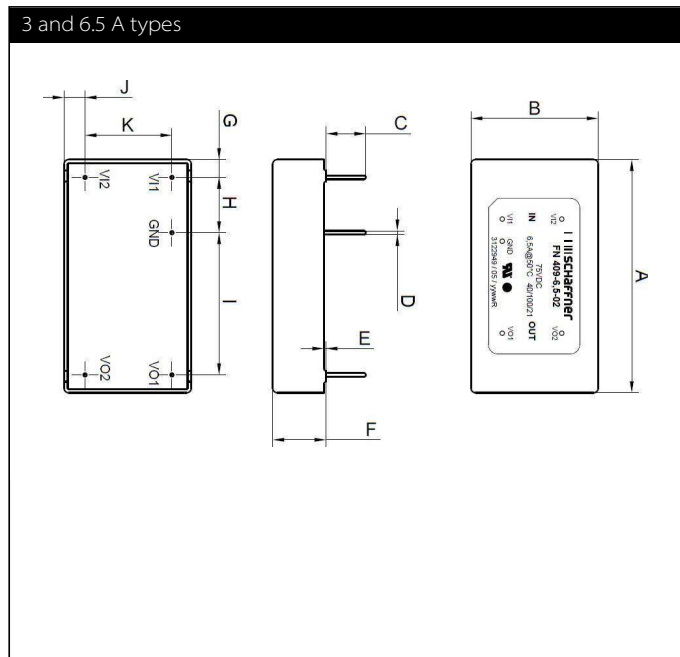
6.5 A types



13 A types



### Mechanical data



All dimensions in mm; 1 inch = 25.4 mm  
Tolerances according: ISO 2768-m / EN 22768-m

## Dimensions

	3 A	6.5 A	13 A
<b>A</b>	51	51	50.8
<b>B</b>	27.9	27.9	40.6
<b>C</b>	8.2	8.2	12.7
<b>D</b>	Ø0.8	Ø0.8	5.1
<b>E</b>	0.5	0.5	Ø1
<b>F</b>	11.7	11.7	0.5
<b>G</b>	3.9	3.9	3.8
<b>H</b>	12.1	12.1	6.4
<b>I</b>	31.1	31.1	17.8
<b>J</b>	4.6	4.6	25.4
<b>K</b>	19.05	19.05	5.08

## Application

The filters are intended to be used in DC applications per EN/IEC 60950, where no transient on the DC bus occurs. To protect the filter against transient voltages a varistor (VDR, fig. 1) or a transient diode (fig. 2) must be placed at the input side of the filter module.

For protection against overcurrent place a fuse on each input lead (VI+, VI-). When AC voltage is superimposed on DC voltage, VP-P or VO-P, whichever is larger, should be maintained within the rated voltage range.

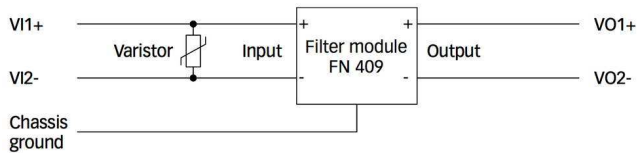


Figure 1: transient protection with a varistor

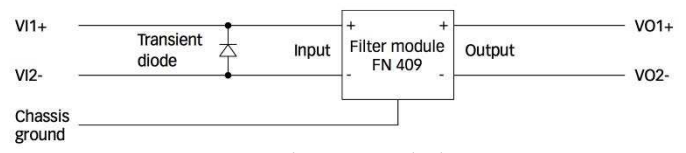
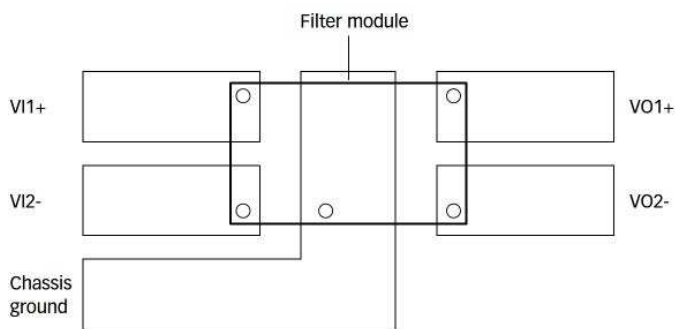


Figure 2: transient protection with a transient diode

## Recommended layout



Note: avoid routing signal tracks or planes under the filter module

Please visit [www.schaffner.com](http://www.schaffner.com) to find more details on filter connectors.



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