Low Cost PCB Filter

- Rated currents from 0.5 to 6.5 A
- Compact PCB-mountable design
- Very low profile
- Optional medical versions (B type)

**Performance indicators**

<table>
<thead>
<tr>
<th>Attenuation performance</th>
<th>standard</th>
<th>high</th>
<th>very high</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rated current [A]</th>
<th>0</th>
<th>3</th>
<th>6</th>
<th>9</th>
<th>12</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>max</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
<td>6.5</td>
</tr>
</tbody>
</table>

**Technical specifications**

- **Maximum continuous operating voltage**: 250 VAC, 50/60 Hz
- **Operating frequency**: DC to 400 Hz
- **Rated currents**: 0.5 to 6.5 A @ 40°C max
- **High potential test voltage**:
  - P –> PE 2000 VAC for 2 sec (standard types)
  - P –> PE 760 VAC for 2 sec
  - P –> PE 2500 VAC for 2 sec (B types)
  - -25°C to +100°C (25/100/21)
- **Temperature range (operation and storage)**: -25°C to +100°C (25/100/21)
- **Design corresponding to**: UL 1283, CSA 22.2 No. 8 1986, IEC/EN 60939
- **Flammability corresponding to**: UL 94 V-0 or better
- **MTBF @ 40°C/230 V (MIL-HB-217F)**: 1,900,000 hours

**Approvals**

- UL
- CSA
- IEC/EN
- ROHS

The FN 402 PCB filter is a single-phase filter designed for easy and fast PCB-mounting. Choosing the FN 402 product line brings you the rapid availability of a standard filter associated with the necessary safety acceptance. Standard PCB single-phase filters are a practical solution helping you to pass EMI system approval in a short time. A selection on amperage ratings and medical types are designed to offer you the desired standard product.

**Features and benefits**

- Good conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- PCB through hole mounting
- Low cost low profile
- Custom specific versions on request

**Typical applications**

- Electrical and electronic equipment
- Small to medium-sized machines and household equipment
- Single-phase power supplies, switch-mode power supplies
- Test and measurement equipment
- Medical equipment

**Typical electrical schematic**

```
P -> Cx -> 2xL -> R -> 2xCy -> N'  
|                  | PE         | Line   | N'   |
```

- P
- Cx
- 2xL
- R
- 2xCy
- PE
- Line
- N'
## Filter selection table

<table>
<thead>
<tr>
<th>Filter</th>
<th>Rated current @ 40°C (25°C)</th>
<th>Leakage current* @ 230 VAC/50 Hz</th>
<th>Inductance L [mH]</th>
<th>Capacitance Cx [nF]</th>
<th>Capacitance Cy [nF]</th>
<th>Resistance R [kΩ]</th>
<th>Input/Output connections</th>
<th>Weight [g]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FN 402-0.5-02</td>
<td>0.5 (0.6)</td>
<td>373</td>
<td>40</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402-1-02</td>
<td>1 (1.2)</td>
<td>373</td>
<td>10</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402-1.6-02</td>
<td>1.6 (1.9)</td>
<td>373</td>
<td>6</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402-2.5-02</td>
<td>2.5 (3)</td>
<td>373</td>
<td>2</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402-4-02</td>
<td>4 (4.7)</td>
<td>373</td>
<td>1</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402-6.5-02</td>
<td>6.5 (7.5)</td>
<td>373</td>
<td>1</td>
<td>100</td>
<td>2.2</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
</tr>
<tr>
<td>FN 402 B-0.5-02</td>
<td>0.5 (0.6)</td>
<td>2</td>
<td>40</td>
<td>100</td>
<td>1000</td>
<td>-02</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>FN 402 B-1-02</td>
<td>1 (1.2)</td>
<td>2</td>
<td>10</td>
<td>100</td>
<td>1000</td>
<td>-02</td>
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<td>2.5 (3)</td>
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<td></td>
</tr>
</tbody>
</table>

* Maximum leakage under normal operating conditions. Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

### Product selector

#### FN 402x-yy...

- 02: PCB through hole mounting
- 0.5 to 6.5: Rated current
- Blank: Standard version
- B: Medical version (without Y2-capacitor)

For example: FN 402-0.5-02, FN 402 B-6.5-02
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

0.5 to 1.6 A types

2.5 to 6.5 A types

Mechanical data

FN 402

FN 402 B

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