Power Line Filters

Compact design requires minimal real estate and delivers excellent filtering characteristics for both differential and common mode. RoHS compliant, easily installed for a broad array of applications.

Appliance Filters .................................................................PF50-PF53
Single Stage .................................................................PF54-PF69
With Wire Leads ..........................................................PF56-PF57
With Wire Leads for Medical Applications ........PF58-PF59
Higher Current ..........................................................PF66-PF69
DC – Higher Current ................................................PF70-PF71
Dual Stage ................................................................PF72-PF79
Power Line Filters
Appliance Filters

11-MPC Series

Features
- Miniature general purpose PCB mounted filter
- Requires minimal PCB real estate space
- Low cost
- Operating temperature: -25°C to +70°C
- Two forms of cases are available: metal case and plastic case

Applications
- Personal computers and peripherals
- Digital equipment
- Measuring instruments and medical equipment
- TV & VCR monitors and display units
- Home appliances

Circuit Diagram

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-MPC-001-5-A</td>
<td>120/250VAC</td>
<td>1A</td>
<td>0.50mA</td>
<td>2</td>
<td>A</td>
<td>30°C</td>
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<tr>
<td>11-MPC-003-5-E</td>
<td></td>
<td>3A</td>
<td>0.50mA</td>
<td>3</td>
<td>E</td>
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<tr>
<td>11-MPC-006-5-B</td>
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<td>6A</td>
<td>0.50mA</td>
<td>2</td>
<td>A1</td>
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<tr>
<td>11-MPC-006-5-C</td>
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<td>16A</td>
<td>0.2mA</td>
<td>4</td>
<td>B</td>
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</table>

Note: Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max. at rated current
Weight: 17.5g
PCB Power Filters
Miniature Printed Circuit Board

11-MPC Series

**Figure A**

**Figure A1**

**Figure B**

**Figure C**

**Figure D**

**Figure E**

**Common Mode**

![Common Mode Diagram](image1)

**Normal Mode**

![Normal Mode Diagram](image2)

---

Dimensions in inches (mm)

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PF51
Power Line Filters

Appliance Filters

62-AL/62-AC Series

Features
- Low-cost plastic case
- Compact design requires minimal real estate space
- Suitable for products that must conform to FCC regulations
- Wide variety of circuit and filtering options
- Good filtering characteristics for both normal mode and common mode
- Epoxy molded for reliability
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF53)

Applications
- Personal computers and peripherals
- Digital equipment
- Industrial equipment
- Vending machines
- Home appliances
- Office equipment

Specifications

<table>
<thead>
<tr>
<th>Model*</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance</th>
<th>Inductance (L1)</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-AFL-010-3-11</td>
<td>250VAC</td>
<td>1.0A</td>
<td>0.35mA</td>
<td>2200pF</td>
<td>11.0mH</td>
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<tr>
<td>62-AFL-010-5-11</td>
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<td>1.0A</td>
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<td>0.35mA</td>
<td>2200pF</td>
<td>6.0mH</td>
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<td>0.35mA</td>
<td>2200pF</td>
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<tr>
<td>62-AFL-016-5-11</td>
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<td>1.6A</td>
<td>0.50mA</td>
<td>3300pF</td>
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<tr>
<td>62-AFL-030-3-11</td>
<td></td>
<td>1.6A</td>
<td>0.35mA</td>
<td>2200pF</td>
<td>40°C</td>
<td>2.4mH</td>
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<td>0.50mA</td>
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<tr>
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<td>0.50mA</td>
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<tr>
<td>62-AFL-060-3-11</td>
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<td>0.35mA</td>
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<td>1.0mH</td>
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<td>2.4mH</td>
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<td>40°C</td>
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<td>62-AFL-045-3-11</td>
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<td>0.50mA</td>
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<td>0.50mA</td>
<td>3300pF</td>
<td></td>
<td></td>
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</tbody>
</table>

Note: All types are designed to meet the requirement of UL 1283, CSA 22.2. VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.

* Available with bleeder resistor
Replace F with R for part number

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Power Line Filters
Appliance Filters

62-AL/62-AC Series

Common Mode

Normal Mode

Temperature Characteristics

Insertion Loss (dB)
Frequency (MHz)
0
10
20
30
40
50
60
70
80
90
100
120

Ambient Temperature (°C)

Current (%)
Power Line Filters
Single Stage

62-PPF/PQF/PRF Series

Features
- Low-cost plastic case
- Compact design requires minimal real estate space
- Suitable for products that must conform to FCC and FTZ regulations
- Wide variety of circuit and filtering options
- Good filtering characteristics for both normal mode and common mode
- Epoxy molded for reliability
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF55)

Applications
- Personal computers and peripherals
- Digital equipment
- Industrial equipment
- Vending machines
- Office equipment

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance</th>
<th>Inductance (L1)</th>
<th>Temperature Rise (Max.)</th>
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<td>62-PQF-020-5-11</td>
<td>250VAC</td>
<td>2A</td>
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<td>3300pF</td>
<td>15mH</td>
<td>30°C</td>
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<td>0.1uF</td>
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<td>62-PQF-030-5-11</td>
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<td>3A</td>
<td></td>
<td>0.1uF</td>
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<td>62-PQF-030-5-12</td>
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<td>0.22uF</td>
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<td></td>
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<td>2A</td>
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<td>0.1uF</td>
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<td></td>
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<td>2A</td>
<td></td>
<td>0.22uF</td>
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<td></td>
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<tr>
<td>62-PPF-030-5-11</td>
<td></td>
<td>3A</td>
<td></td>
<td>0.1uF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-PPF-030-5-12</td>
<td></td>
<td>3A</td>
<td></td>
<td>0.22uF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max. (except 62-PRF-010-5-11) at rated current
62-PRF-010-5-11: 1.5V max. at rated current
Weight: 62-PPF & PQF Series: 2.11 ounces (60 grams)
62-PRF Series: 1.76 ounces (50 grams)
Power Line Filters
Single Stage

62-PPF/PQF/PRF Series

Temperature Characteristics

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Insertion Loss (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>60</td>
<td>80</td>
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<tr>
<td>50</td>
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<td>40</td>
<td>80</td>
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<td>30</td>
<td>80</td>
</tr>
<tr>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>10</td>
<td>80</td>
</tr>
<tr>
<td>0</td>
<td>80</td>
</tr>
</tbody>
</table>

Normal Mode

![Diagram of Normal Mode](image)

Common Mode

![Diagram of Common Mode](image)

62-P(P/Q/R)F Series

![Diagram of 62-P(P/Q/R)F Series](image)

Also available with .250 Fast-ons

Dimensions in inches (mm)

Also available with .250 Fast-ons

50.8 x 139.7 (2 x 5.5)

354 (9)

590 (15)

2,006 (51)

1,265 (32)

1.573 (40)

1.947 (49.5)

1.265 (32)

0.354 (9)

2.006 (51)

1.265 (32)

0.354 (9)
Power Line Filters
Single Stage Wire Leads

62-PML Series

Features
- Compact design requires minimal real estate space
- Suitable for products that must conform to FCC and FTZ regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Structure provides effective shielding for noise generated externally and internally
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF57)

Applications
- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Medical equipment
- Factory automation equipment

Circuit Diagram

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance</th>
<th>Inductance (L_1)</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-PML-015-3-11</td>
<td>250VAC</td>
<td>1.5A</td>
<td>0.35mA</td>
<td>2200pF</td>
<td>10.0mH</td>
<td>30°C</td>
</tr>
<tr>
<td>62-PML-015-5-11</td>
<td></td>
<td>3A</td>
<td>0.35mA</td>
<td>2200pF</td>
<td>4.3mH</td>
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</tr>
<tr>
<td>62-PML-030-3-11</td>
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<td>3A</td>
<td>0.50mA</td>
<td>3300pF</td>
<td>2.4mH</td>
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<tr>
<td>62-PML-030-5-11</td>
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<td>5A</td>
<td>0.50mA</td>
<td>3300pF</td>
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<tr>
<td>62-PML-050-3-11</td>
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<td>5A</td>
<td>0.35mA</td>
<td>2200pF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-PML-050-5-11</td>
<td></td>
<td>5A</td>
<td>0.50mA</td>
<td>3300pF</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max. at rated current
Weight: 62-PML-015 Series: 3.06 ounces (87 grams)
62-PML-030 Series: 3.17 ounces (90 grams)
62-PML-050 Series: 3.28 ounces (93 grams)
Discharge time: 0.4 sec. max.
Power Line Filters
Single Stage Wire Leads

62-PML Series

Temperature Characteristics

Common Mode

Normal Mode

* Custom lengths available upon request. Dimensions in inches (mm)
12-PML & 12-PMF Series

Features
- Compact design requires minimal real estate space
- Suitable for products that must conform to FCC and FTZ regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Structure provides effective shielding for noise generated externally and internally
- Operating temperature: -25°C to +70°C
- Low leakage current

Applications
- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Medical equipment
- Factory automation equipment

Circuit Diagram

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-PML-001-2-A</td>
<td>120/250VAC</td>
<td>1A</td>
<td>5uA</td>
<td>1</td>
<td>A</td>
<td>30°C</td>
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<td>120/250VAC</td>
<td>2A</td>
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<td>1</td>
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<td></td>
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<tr>
<td>12-PML-006-2-A</td>
<td>120/250VAC</td>
<td>6A</td>
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<td>1</td>
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<tr>
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<td>10A</td>
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<td>1</td>
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<tr>
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<td>1A</td>
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<td>2</td>
<td>B</td>
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<td>6A</td>
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<td>1A</td>
<td></td>
<td>1</td>
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Note: All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-3
- Test voltage: 1500VAC one minute, line to ground
- Insulation resistance: 300 Mohm min. at 500VDC
- Voltage drop: 1V max. at rated current
- Discharge time: 0.4 sec. max.
Power Line Filters
Single Stage Wire Leads
for Medical Purpose Applications

12-PML & 12-PMF Series

**Figure A**

- Common Mode
- Normal Mode

**Figure B**

**Figure C**

Insertion Loss (dB)

**Figure D**

Dimensions in inches (mm)
Power Line Filters
Single Stage

62-LMF & LMB Series

Features
- Space saving, compact designs
- Suitable for products that must conform to FCC and FTZ regulations
- Excellent filtering characteristics for both normal mode and common mode
- Structure provides effective shielding for noise generated externally and internally
- Metal case provides effective shielding
- Rugged construction
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF61)

Applications
- Digital equipment
- Office automation equipment, such as copy and fax machines
- Computers and peripherals
- Instrumentation and controls

Circuit Diagram

Specifications

<table>
<thead>
<tr>
<th>Model*</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current (Max.)</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance (CY)</th>
<th>Inductance (L1)</th>
<th>Temperature Rise (Max.)</th>
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<tr>
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<td>250VAC</td>
<td>3A</td>
<td>0.50mA</td>
<td>3300pF</td>
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<td>14mH</td>
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<td>62-LMF-030-5-11</td>
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<td>5A</td>
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<td></td>
<td>0.1uF</td>
<td>7.0mH</td>
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<td>8A</td>
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<td>.22uF</td>
<td>4.2mH</td>
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<td></td>
<td>.33uF</td>
<td>2.2mH</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>62-LMF-100-5-11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max. at rated current
Discharge time: 0.4 sec. max.
Weight: 5.3 ounces (150 grams)

*62-LMF - designates Fast-on terminals
62-LMB - designates Bolt-in terminals
62-LML - wire lead in(outputs also available

---

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API TECHNOLOGIES’ SPECTRUM CONTROL GmbH • Hansastrasse 6 • 91128 Schwabach, Germany • Phone: (49)-9122-795-0 • Fax: (49)-9122-795-58
Power Line Filters
Single Stage

62-LMF & LMB Series

**62-LMF**

- **Insertion Loss (dB)**
  - 0 dB
  - 1 dB
  - 2 dB
  - 3 dB
  - 4 dB
  - 5 dB
  - 6 dB
  - 7 dB
  - 8 dB
  - 9 dB

- **Frequency (MHz)**
  - 0.1 MHz
  - 0.2 MHz
  - 0.5 MHz
  - 1 MHz
  - 2 MHz
  - 5 MHz
  - 10 MHz
  - 20 MHz
  - 50 MHz

- **Current (%)**
  - 0%
  - 10%
  - 20%
  - 30%
  - 40%
  - 50%
  - 60%
  - 70%
  - 80%
  - 90%

- **Temperature Characteristics**

- **Dimensions in inches (mm)**

**62-LMB**

- **Insertion Loss (dB)**
  - 0 dB
  - 1 dB
  - 2 dB
  - 3 dB
  - 4 dB
  - 5 dB
  - 6 dB
  - 7 dB
  - 8 dB
  - 9 dB

- **Frequency (MHz)**
  - 0.1 MHz
  - 0.2 MHz
  - 0.5 MHz
  - 1 MHz
  - 2 MHz
  - 5 MHz
  - 10 MHz
  - 20 MHz
  - 50 MHz

- **Current (%)**
  - 0%
  - 10%
  - 20%
  - 30%
  - 40%
  - 50%
  - 60%
  - 70%
  - 80%
  - 90%

- **Temperature Characteristics**

- **Dimensions in inches (mm)**

**Common Mode**

**Normal Mode**
Power Line Filters
Single Stage

62-PMF & PMB Series

Features
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- Structure provides effective shielding for noise generated externally and internally
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF63)

Applications
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Medical equipment
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment
- Office automation equipment, such as copy and fax machines

Specifications

<table>
<thead>
<tr>
<th>Model*</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance</th>
<th>Inductance (L1)</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-PMF-050-5-11</td>
<td>250VAC</td>
<td>5A</td>
<td>0.50mA</td>
<td>3300pF</td>
<td>0.1uF</td>
<td>25°C</td>
</tr>
<tr>
<td>62-PMF-050-5-11</td>
<td>250VAC</td>
<td>8A</td>
<td>0.1uF</td>
<td>14mH</td>
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<td></td>
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<tr>
<td>62-PMF-080-5-11</td>
<td>250VAC</td>
<td>10A</td>
<td>0.22uF</td>
<td>7.0mH</td>
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<td>62-PMF-080-5-11</td>
<td>250VAC</td>
<td>15A</td>
<td>0.33uF</td>
<td>4.2mH</td>
<td></td>
<td></td>
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<tr>
<td>62-PMF-100-5-12</td>
<td>250VAC</td>
<td>15A</td>
<td>0.33uF</td>
<td>2.2mH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-PMF-100-5-12</td>
<td>250VAC</td>
<td>20A</td>
<td>1.8mH</td>
<td>45°C**</td>
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<td></td>
</tr>
<tr>
<td>62-PMF-150-5-13</td>
<td>250VAC</td>
<td>20A</td>
<td>1.8mH</td>
<td>45°C**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-PMF-150-5-13</td>
<td>250VAC</td>
<td>20A</td>
<td>1.8mH</td>
<td>45°C**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>62-PMF-200-5-13</td>
<td>250VAC</td>
<td>20A</td>
<td>1.8mH</td>
<td>45°C**</td>
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<td></td>
</tr>
</tbody>
</table>

Note: Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Weight: 8.82 ounces (250 grams)

* PMF - designates Fast-on terminals
PMB - designates Bolt-in terminals
** The temperature rise of 20 amp units can be decreased to 30°C by mounting on 200 x 200 x 1.0(mm) steel chassis
Power Line Filters
Single Stage

62-PMF & PMB Series

Temperature Characteristics

Common Mode

Normal Mode

Dimensions in inches (mm)
Power Line Filters
Single Stage

12-PMF Series

Features

- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- Structure provides effective shielding for noise generated externally and internally
- Operating temperature: -25°C to +85°C

Applications

- Digital equipment
- Computers and peripherals
- Measuring instruments
- Medical equipment
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment
- Office automation equipment, such as copy and fax machines

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-PMF-001-5-A</td>
<td>120/250VAC</td>
<td>1A</td>
<td>0.5mA</td>
<td>1</td>
<td>A</td>
<td>30°C</td>
</tr>
<tr>
<td>12-PMF-003-5-A</td>
<td>3A</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-003-5-B</td>
<td>6A</td>
<td>2</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-006-5-A</td>
<td>10A</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-006-5-C</td>
<td>15A</td>
<td>1</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-006-5-D</td>
<td>20A</td>
<td>6</td>
<td>D</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12-PMF-010-5-A</td>
<td>20A</td>
<td>2</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-010-5-C</td>
<td>20A</td>
<td>3</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-015-5-C</td>
<td>20A</td>
<td>5</td>
<td>E</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-015-5-E</td>
<td>20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-020-5-C</td>
<td>20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-020-5-D</td>
<td>20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-020-5-E</td>
<td>20A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Power Line Filters
Single Stage

12-PMF Series

Common Mode

Normal Mode

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Power Line Filters
Single Stage - Higher Current

62-PMB Series

Features
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- Structure provides effective shielding for noise generated externally and internally
- Safety agency approvals pending
- Designed to be in accordance with VDE 0565 Part 3
- Operating temperature: -25°C to +85°C (including temperature rise)

Applications
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Medical equipment
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment
- Office automation equipment, such as copy and fax machines

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Capacitance</th>
<th>Inductance (L₁)</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-PMB-300-5-14</td>
<td>250VAC</td>
<td>30A</td>
<td>0.50mA</td>
<td>3300pF</td>
<td>1.6mH</td>
<td>45°C</td>
</tr>
<tr>
<td>62-PMB-400-5-14</td>
<td>250VAC</td>
<td>40A</td>
<td>0.50mA</td>
<td>3300pF</td>
<td>0.8mH</td>
<td></td>
</tr>
</tbody>
</table>

Note: Test voltage: 1500VAC one minute, line to earth
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Weight: 8.82 ounces (250 grams)
Power Line Filters
Single Stage - Higher Current

62-PMB Series

62-PMB-300-5-14 and 62-PMB-400-5-14

Normal Mode

Common Mode

Dimensions in inches (mm)
Power Line Filters
Single Stage - Higher Current

12-PMB Series

Features
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- Structure provides effective shielding for noise generated externally and internally
- Designed to be in accordance with VDE 0565 Part 3
- Operating temperature: -25°C to +85°C

Applications
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Medical equipment
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment
- Office automation equipment, such as copy and fax machines

Circuit Diagram

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-PMB-025-5-A</td>
<td>120/250VAC</td>
<td>25A</td>
<td>0.5mA</td>
<td>1</td>
<td>A</td>
<td>30°C</td>
</tr>
<tr>
<td>12-PMB-030-5-A</td>
<td></td>
<td>30A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-PMB-035-5-B</td>
<td></td>
<td>35A</td>
<td></td>
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<tr>
<td>12-PMB-050-5-B</td>
<td></td>
<td>50A</td>
<td></td>
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</tr>
<tr>
<td>12-PMB-100-8-C</td>
<td></td>
<td>100A</td>
<td>1.0mA</td>
<td></td>
<td>C</td>
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</tr>
<tr>
<td>12-PMB-120-8-C</td>
<td></td>
<td>120A</td>
<td></td>
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</tr>
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</table>

Note: Test voltage: 1500VAC one minute, line to earth
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Weight: 8.82 ounces (250 grams)
Power Line Filters
Single Stage - Higher Current

12-PMB Series

Figure A

Figure B

Figure C

Common Mode

Normal Mode

Dimensions in inches (mm)
Power Line Filters
DC - Higher Current

12-PMF & 12 PMB DC Series

Features
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- Structure provides effective shielding for noise generated externally and internally
- Designed to be in accordance with VDE 0565 Part 3
- Operating temperature: -40°C to +85°C

Applications
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-PMF-006-DC-C</td>
<td>48/250 VDC</td>
<td>2</td>
<td>D</td>
<td>30°C</td>
</tr>
<tr>
<td>12-PMF-010-DC-C</td>
<td>60</td>
<td></td>
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</tr>
<tr>
<td>12-PMF-015-DC-C</td>
<td>80</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12-PMF-020-DC-C</td>
<td>100</td>
<td></td>
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<tr>
<td>12-PMF-025-DC-D</td>
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<tr>
<td>12-PMF-025-DC-F</td>
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<tr>
<td>12-PMB-025-DC-F</td>
<td>160</td>
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<tr>
<td>12-PMB-030-DC-C</td>
<td>180</td>
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<tr>
<td>12-PMB-035-DC-C</td>
<td>200</td>
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<tr>
<td>12-PMB-040-DC-F</td>
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<td>12-PMB-050-DC-B</td>
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<tr>
<td>12-PMB-060-DC-B</td>
<td>260</td>
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<tr>
<td>12-PMB-080-DC-G</td>
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<td>12-PMB-120-DC-C</td>
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<td>12-PMB-140-DC-C</td>
<td>360</td>
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<td>12-PMB-180-DC-E</td>
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<td>12-PMB-200-DC-E</td>
<td>400</td>
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<tr>
<td>12-PMB-260-DC-E</td>
<td>420</td>
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</table>

Note: Test voltage: 1500VAC one minute, line to earth
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Weight: 8.82 ounces (250 grams)
Power Line Filters
DC - Higher Current

12-PMF & 12-PMB DC Series

Common Mode

Normal Mode

Dimensions in inches (mm)

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PF71
Power Line Filters
Dual Stage

62-MMF Series

Features
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Epoxy molded for reliability
- Structure provides effective shielding for noise generated both externally and internally
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF73)

Applications
- Digital equipment
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

Circuit Diagram
62-MMF-XXX-7-11

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>CV1</th>
<th>CV2</th>
<th>CX</th>
<th>Inductance (L1) (2X)</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-MMF-030-7-11</td>
<td>250VAC</td>
<td>3A</td>
<td>.7mA</td>
<td>3300pF</td>
<td>1000pF</td>
<td>0.1uF</td>
<td>3.7mH</td>
<td>30°C</td>
</tr>
<tr>
<td>62-MMF-050-7-11</td>
<td>250VAC</td>
<td>5A</td>
<td>.7mA</td>
<td>3300pF</td>
<td>1000pF</td>
<td>0.1uF</td>
<td>2.9mH</td>
<td>30°C</td>
</tr>
</tbody>
</table>

Note: All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-3
- Test voltage: 1500VAC one minute, line to ground
- Insulation resistance: 300 Mohm min. at 500VDC
- Leakage current: 0.7 mA max.
- Voltage drop: 1V max.
- Discharge time: 0.4 sec. max.
- Weight: 6.0 ounces (170 grams)
Power Line Filters
Dual Stage

62-MMF Series

Temperature Characteristics

Common Mode

Normal Mode

Insertion Loss (dB)

Frequency (MHz)

Dimensions in inches (mm)
12-MMF & 12-MMB Series

Features
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Structure provides effective shielding for noise generated both externally and internally
- Operating temperature: -40°C to +85°C
- High performance
- Low leakage current

Applications
- Digital equipment
- Switching power supplies
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@ 50/60Hz)</th>
<th>Rated Current</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Figure</th>
<th>Temperature Rise (Max.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12-MMF-002-5-F</td>
<td>120/250VAC</td>
<td>2A</td>
<td>0.25mA@120VAC/0.5mA@250VAC</td>
<td>1</td>
<td>A</td>
<td>30°C</td>
</tr>
<tr>
<td>12-MMF-003-5-F</td>
<td></td>
<td>3A</td>
<td></td>
<td>3</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>12-MMF-003-5-A</td>
<td></td>
<td>3A</td>
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Note: All types are designed to meet the requirement of UL 1283, CSA 22.2: VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 900 Mohm min. at 500VDC
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
# 12-MMF & 12-MMB Series

## Power Line Filters

### Dual Stage

#### 12-MMF-002/-003/-006/-008

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Insertion Loss (dB)</th>
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<td>70</td>
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#### 12-MMF-010/-012/-015/-020/-030/-050

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Insertion Loss (dB)</th>
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</thead>
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<td>0.01</td>
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<td>5</td>
<td>70</td>
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<td>10</td>
<td>80</td>
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#### Normal Mode

<table>
<thead>
<tr>
<th>Frequency (MHz)</th>
<th>Insertion Loss (dB)</th>
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</thead>
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<td>0.01</td>
<td>10</td>
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<td>0.05</td>
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<tr>
<td>0.15</td>
<td>30</td>
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<tr>
<td>0.45</td>
<td>40</td>
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<tr>
<td>1</td>
<td>50</td>
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<td>2</td>
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<tr>
<td>5</td>
<td>70</td>
</tr>
<tr>
<td>10</td>
<td>80</td>
</tr>
</tbody>
</table>

### Common Mode

- Oscillator
- 50Ω Level Meter
- Filter
- 50Ω
- 12-MMF-002/-003/-006/-008

### Normal Mode

- Oscillator
- 50Ω Level Meter
- Filter
- 50Ω
- 12-MMF-002/-003/-006/-008

---

**Figure A**

- 2.5 (46 MAX)
- 7.3 (MM-4600)
- 7.3 (MM-4600)

**Figure A1**

- 4.3 (46 MAX)
- 1 (46 MAX)

**Figure B**

- Ø .15 (3.8)
- Ø .25 (6.4)
- 1.07 (27.1)

**Figure C**

- M4 STUD (2X)
- M4 THREAD (5X)

**Figure D**

- Ø .25 (6.4)
- 1.07 (27.1)
- M4 STUD (5X)

**Figure E**

- M4 THREAD (3X)
- 1.17 (30.2)

**Figure F**

- M4 THREAD (3X)
- 1.17 (30.2)

**Figure G**

- M4 THREAD (2X)
- 3.08 (78.2)

Dimensions in inches (mm)
Power Line Filters
Dual Stage

12-MMF & 12-MMB Series

Features
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Structure provides effective shielding for noise generated both externally and internally
- Operating temperature: -40°C to +85°C
- High performance

Applications
- Digital equipment
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Rated Voltage (@50/60Hz)</th>
<th>Rated Current (Max.)</th>
<th>Leakage Current (Max.)</th>
<th>Circuit Diagram</th>
<th>Temperature Rise (Max.)</th>
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</thead>
<tbody>
<tr>
<td>12-MMF-003-11-F</td>
<td>120/250VAC</td>
<td>3A</td>
<td>1.5mA</td>
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<td>A</td>
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<td>12-MMF-006-11-F</td>
<td>20A</td>
<td>6A</td>
<td></td>
<td>1</td>
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<tr>
<td>12-MMF-010-11-F</td>
<td>30A</td>
<td>10A</td>
<td></td>
<td>1</td>
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</tr>
<tr>
<td>12-MMB-015-11-G</td>
<td>40A</td>
<td>15A</td>
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<td>12-MMB-020-11-D</td>
<td>50A</td>
<td>20A</td>
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<tr>
<td>12-MMB-030-11-D</td>
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<tr>
<td>12-MMB-040-11-E</td>
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<td>80A</td>
<td>50A</td>
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<td>1</td>
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</table>

Note: All types are designed to meet the requirement of UL 1283, CSA 22.2, VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Leakage current: 0.7 mA max.
Voltage drop: 1V max.
Discharge time: 0.4 sec. max.
Weight: 6.0 ounces (170 grams)

Circuit Diagram
Power Line Filters
Dual Stage

12-MMF & 12-MMB Series

**Common Mode**

![Common Mode Diagram](image)

12-MMF/MMB-003-006-010-012-015

- 12-MMF-003-11-F
- 12-MMF-010-11-F
- 12-MMF-012-11-A
- 12-MMF-006-11-F
- 12-MMF-015-11-C

**Normal Mode**

![Normal Mode Diagram](image)

12-MMF/MMB-003-006-010-012-015

- 12-MMF-003-11-F
- 12-MMF-006-11-F
- 12-MMF-010-11-F
- 12-MMF-012-11-A
- 12-MMF-015-11-C

Dimensions in inches (mm)
Power Line Filters
Dual Stage

12-MMF & 12-MMB Series

Features
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Epoxy molded for reliability
- Structure provides effective shielding for noise generated both externally and internally
- Operating temperature: -25°C to +85°C

Applications
- Digital equipment
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

Circuit Diagram

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<tr>
<td>12-MMF-001-5-F</td>
<td>120/250VAC</td>
<td>1A</td>
<td>0.5mA</td>
<td>3</td>
<td>A</td>
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<tr>
<td>12-MMF-003-5-G</td>
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<td>6A</td>
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Power Line Filters
Dual Stage

12-MMF & 12-MMB Series

Common Mode

Normal Mode

12-MMF-001-5-F
12-MMF-003-5-G
12-MMF-003-2-G
12-MMF-006-5-G

12-MMB-010-5-D
12-MMB-015-5-E
12-MMB-020-5-E
12-MMB-030-5-E

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