# 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**


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# Power Line Filters
# Appliance Filters

## 11-MPC Series

### Features

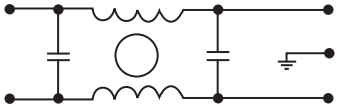
- Miniature general purpose PCB mounted filter
- Requires minimal PCB real estate space
- Low cost
- Operating temperature: -25°C to +70°C
- Two forms of cases are available: metal case and plastic case

### Applications

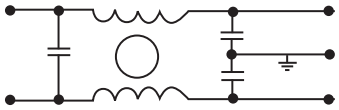
- Personal computers and peripherals
- Digital equipment
- Measuring instruments and medical equipment
- TV & VCR monitors and display units
- Home appliances

### Circuit Diagram

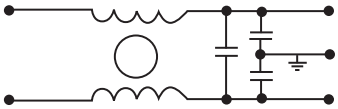
Circuit 1



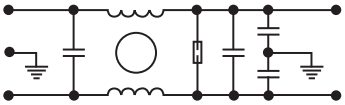
Circuit 2



Circuit 3



Circuit 4



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 11-MPC-001-2-B | 120/250VAC | 1A | 5uA | 1 | A1 | 30°C |
| 11-MPC-001-5-A | | | 0.50mA | 2 | A | |
| 11-MPC-001-5-B | | | | | A1 | |
| 11-MPC-002-5-B | | 2A | | | | |
| 11-MPC-002-5-D | | | | 3 | D | |
| 11-MPC-003-5-E | | 3A | | | E | |
| 11-MPC-006-5-B | | 6A | | 2 | A1 | |
| 11-MPC-006-5-C | | | | | C | |
| 11-MPC-016-5-B | | 16A | 0.2mA | 4 | B | |

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

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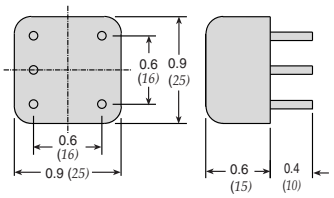
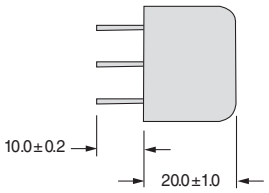
# PCB Power Filters
# Miniature Printed Circuit Board

## 11-MPC Series

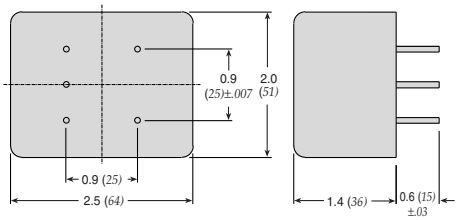
### Figure A



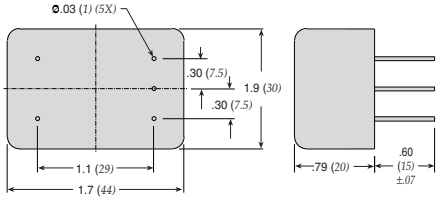

### Figure A1



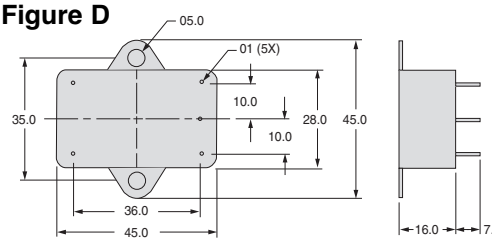

### Figure B



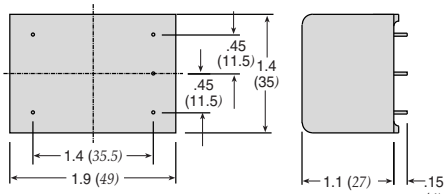

### Figure C




### Figure D

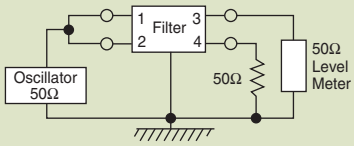



### Figure E

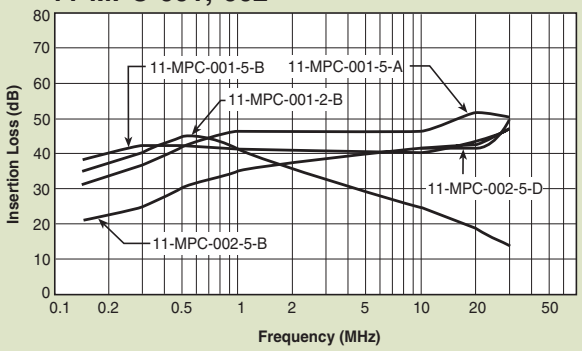



Dimensions in inches *(mm)*

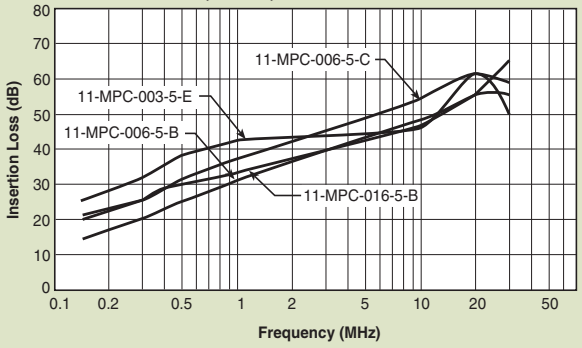
## Common Mode



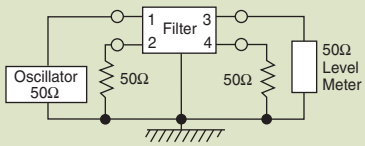

### 11-MPC-001;-002



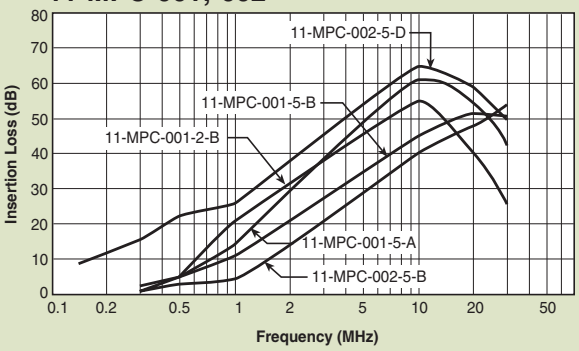

### 11-MPC-003;-006;-016



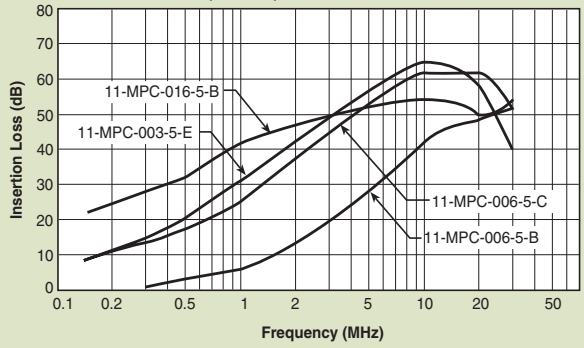

## Normal Mode




### 11-MPC-001;-002




### 11-MPC-003;-006;-016



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# Power Line Filters
# Appliance Filters

## 62-AL/62-AC Series

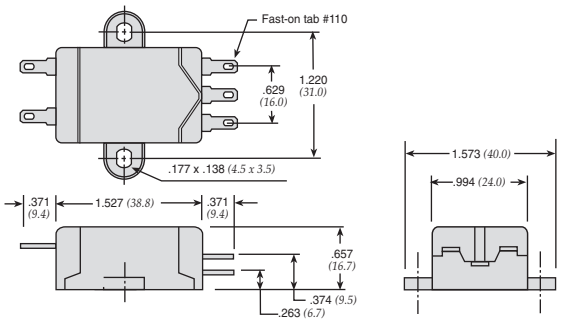
Tested and found to be IAW VDE 0565 Part 3

### 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)

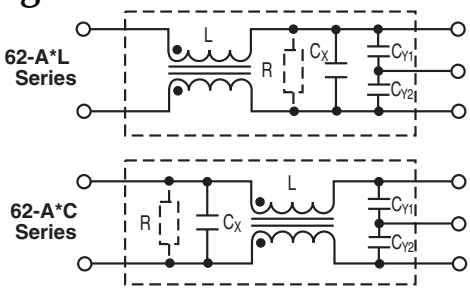
### Applications

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




Dimensions in inches *(mm)*

### Circuit Diagrams




* R= w/ Bleeder Resistor
F = w/o Bleeder Resistor

### Specifications

| Model* | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-AFL-010-3-11 | 250VAC | 1.0A | 0.35mA | 2200pF | 0.1uF | 11.0mH | 40°C |
| 62-AFC-010-3-11 | | | | | | | |
| 62-AFL-010-5-11 | | | 0.50mA | 3300pF | | | |
| 62-AFC-010-5-11 | | | | | | | |
| 62-AFL-016-3-11 | | 1.6A | 0.35mA | 2200pF | | 6.0mH | |
| 62-AFC-016-3-11 | | | | | | | |
| 62-AFL-016-5-11 | | | 0.50mA | 3300pF | | | |
| 62-AFC-016-5-11 | | | | | | | |
| 62-AFL-030-3-11 | | 3.0A | 0.35mA | 2200pF | | 2.4mH | |
| 62-AFC-030-3-11 | | | | | | | |
| 62-AFL-030-5-11 | | | 0.50mA | 3300pF | | | |
| 62-AFC-030-5-11 | | | | | | | |
| 62-AFL-045-3-11 | | 4.5A | 0.35mA | 2200pF | | 1.0mH | |
| 62-AFC-045-3-11 | | | | | | | |
| 62-AFL-045-5-11 | | | 0.50mA | 3300pF | | | |
| 62-AFC-045-5-11 | | | | | | | |
| 62-AFL-060-3-11 | | 6.0A | 0.35mA | 2200pF | | 0.53mH | |
| 62-AFC-060-3-11 | | | | | | | |
| 62-AFL-060-5-11 | | | 0.50mA | 3300pF | | | |
| 62-AFC-060-5-11 | | | | | | | |

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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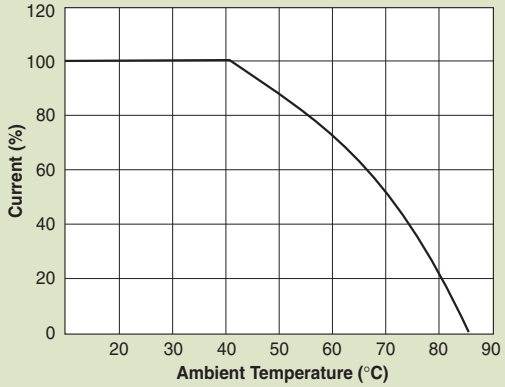
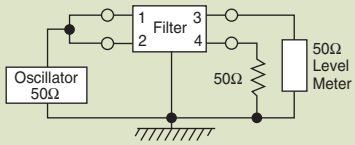
# Power Line Filters
# Appliance Filters

## 62-AL/62-AC Series

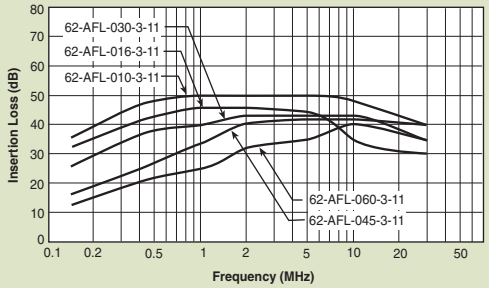
### Temperature Characteristics



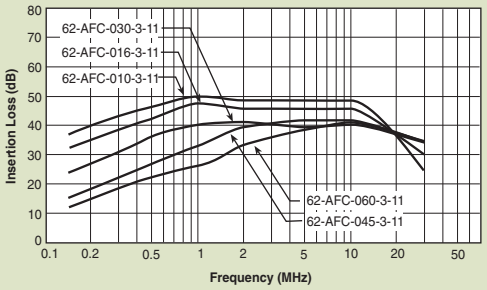

### Common Mode



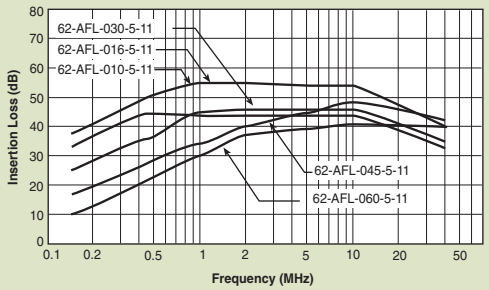

**62-AFL-xxx-3-11**



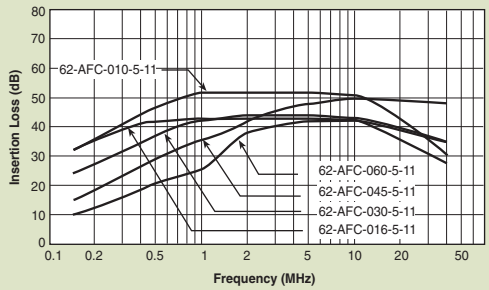

**62-AFC-XXX-3-11**



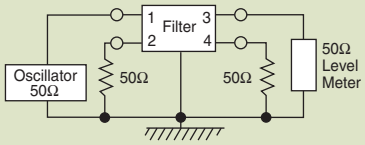

**62-AFL-xxx-5-11**



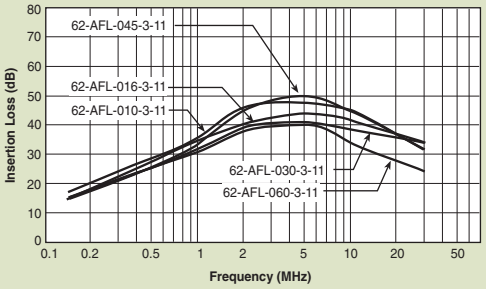

**62-AFC-xxx-5-11**



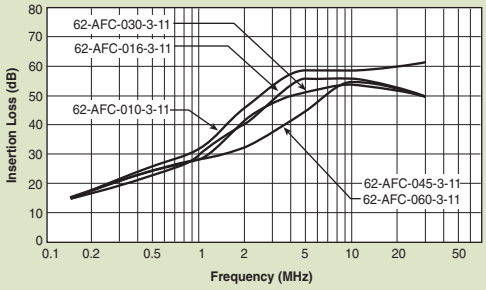

### Normal Mode



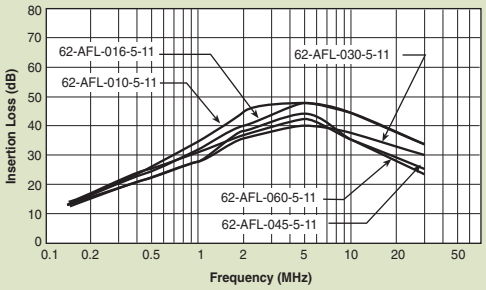

**62-AFL-XXX-3-11**



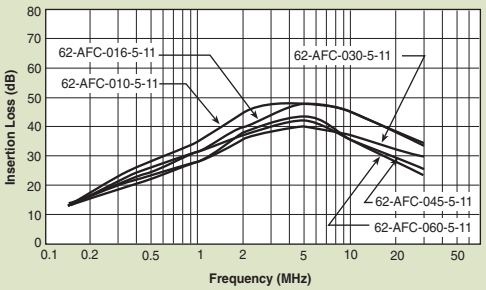

**62-AFC-XXX-3-11**




**62-AFL-xxx-5-11**




**62-AFC-xxx-5-11**



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# Power Line Filters
# Single Stage

## 62-PPF/PQF/PRF Series

Tested and found to be
IAW VDE 0565 Part 3

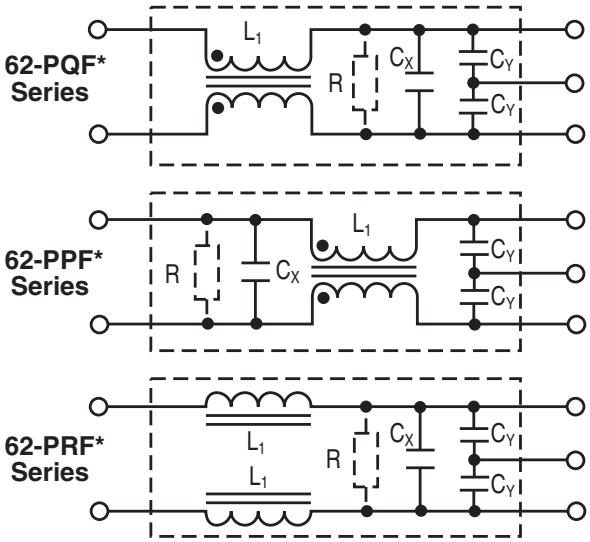
### Features

- 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

### Circuit Diagrams




* Bleeder Resistor is available only for 62-P(Q/R/P)F-XXX-X-12

### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-PQF-020-5-11 | 250VAC | 2A | 0.50mA | 3300pF | 0.1uF | 15mH | 30°C |
| 62-PQF-020-5-12 | | | | | .22uF | | |
| 62-PPF-020-5-11 | | | | | 0.1uF | | |
| 62-PPF-020-5-12 | | | | | .22uF | | |
| 62-PQF-030-5-11 | | 3A | | | 0.1uF | 8mH | |
| 62-PQF-030-5-12 | | | | | .22uF | | |
| 62-PPF-030-5-11 | | | | | 0.1uF | | |
| 62-PPF-030-5-12 | | | | | .22uF | | |
| 62-PQF-060-5-11 | | 6A | | | 0.1uF | 2.1mH | |
| 62-PQF-060-5-12 | | | | | .22uF | | |
| 62-PPF-060-5-11 | | | | | 0.1uF | | |
| 62-PPF-060-5-12 | | | | | .22uF | | |
| 62-PRF-010-5-11 | | 1A | | | 0.1uF | 486uH | |
| 62-PRF-010-5-12 | | | | | .22uF | | |
| 62-PRF-020-5-11 | | 2A | | | 0.1uF | 181uH | |
| 62-PRF-020-5-12 | | | | | .22uF | | |
| 62-PRF-030-5-11 | | 3A | | | 0.1uF | 97uH | |
| 62-PRF-030-5-12 | | | | | .22uF | | |

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)

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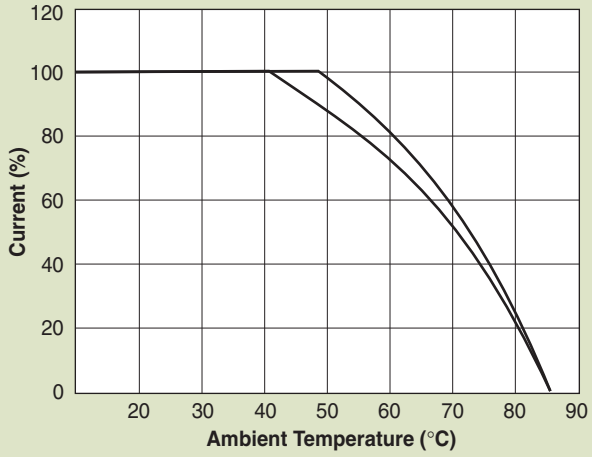
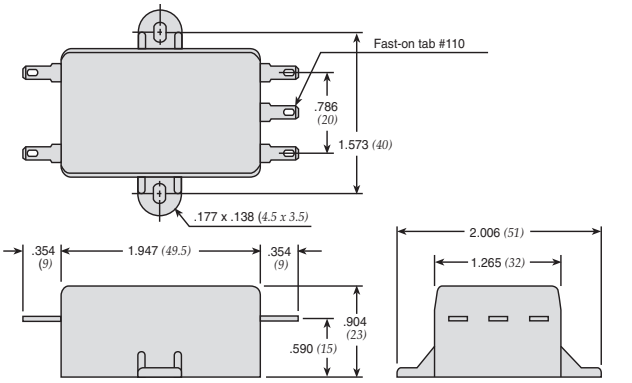
# Power Line Filters
# Single Stage

## 62-PPF/PQF/PRF Series

### Temperature Characteristics

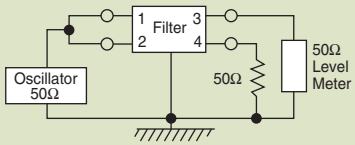


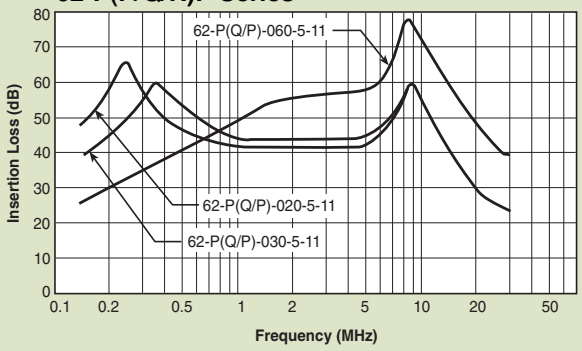

Also available with .250 Fast-ons

Dimensions in inches *(mm)*

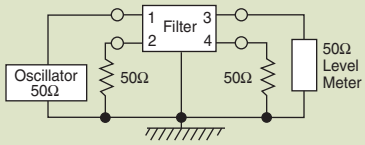
### Common Mode



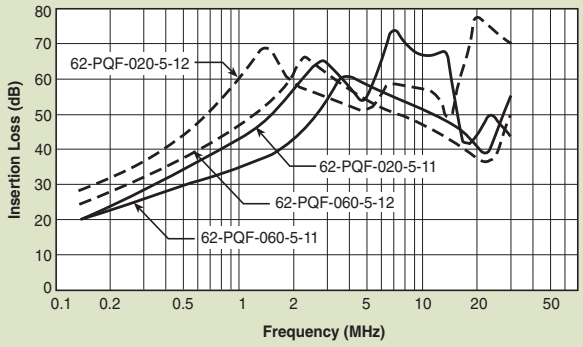

#### 62-P(P/Q/R)F Series



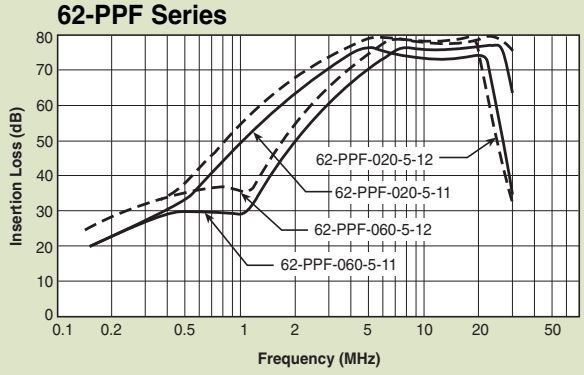

### Normal Mode



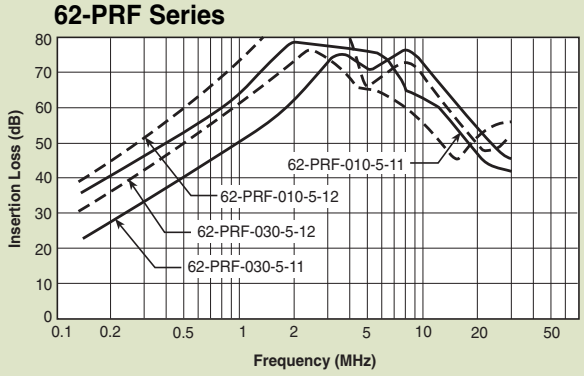

#### 62-PQF Series




#### 62-PPF Series




#### 62-PRF Series



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage Wire Leads

## 62-PML Series

Tested and found to be
IAW VDE 0565 Part 3

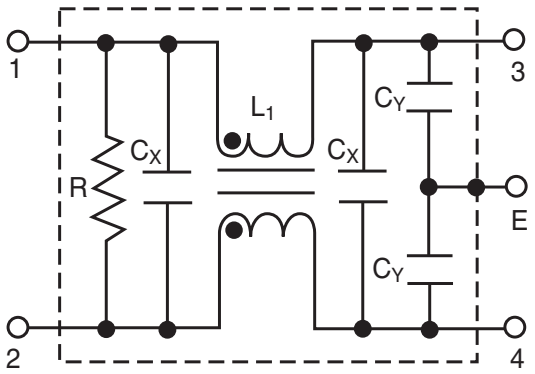
## Features

- 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

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-PML-015-3-11 | 250VAC | 1.5A | 0.35mA | 2200pF | 0.1uF | 10.0mH | 30°C |
| 62-PML-015-5-11 | | | 0.50mA | 3300pF | | | |
| 62-PML-030-3-11 | | 3A | 0.35mA | 2200pF | | 4.3mH | |
| 62-PML-030-5-11 | | | 0.50mA | 3300pF | | | |
| 62-PML-050-3-11 | | 5A | 0.35mA | 2200pF | | 2.4mH | |
| 62-PML-050-5-11 | | | 0.50mA | 3300pF | | | |

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.

api technologies corp.
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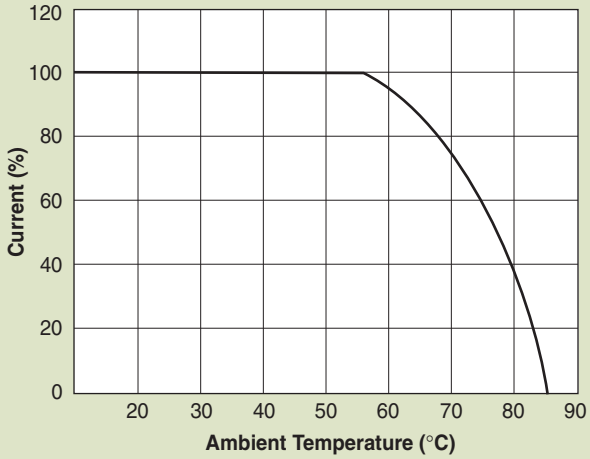
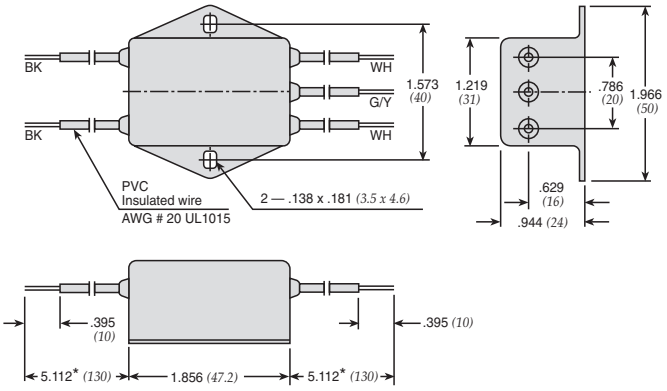
# Power Line Filters
# Single Stage Wire Leads

## 62-PML Series

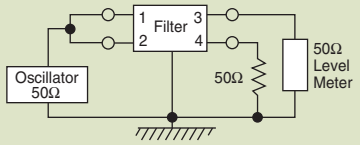
### Temperature Characteristics

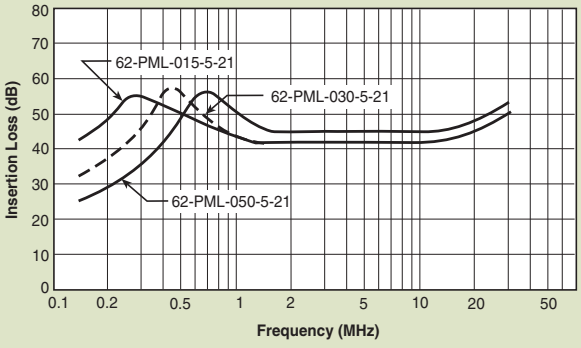


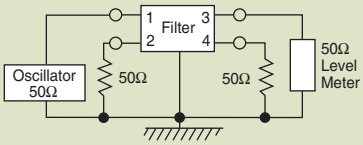

* Custom lengths available upon request. Dimensions in inches *(mm)*

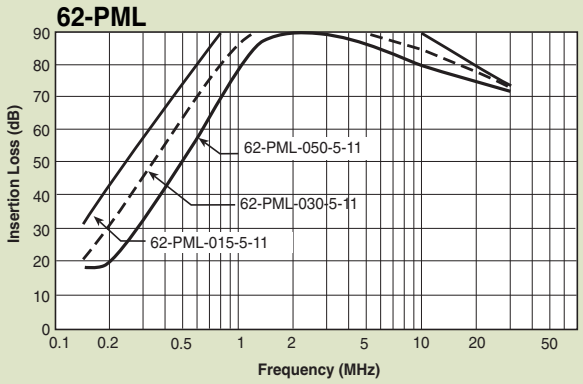
### Common Mode




### Normal Mode



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage Wire Leads
for Medical Purpose Applications

## 12-PML & 12-PMF Series

### Features

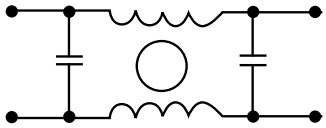
- Compact design requires minimal real estate space
- Suitable for products that must conform to FCC and FTZ regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Structure provides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

### Applications

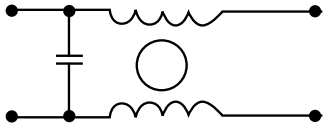
- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Medical equipment
- Factory automation equipment

### Circuit Diagram

Circuit 1



Circuit 2



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 12-PML-001-2-A | 120/250VAC | 1A | 5uA | 1 | A | 30°C |
| 12-PML-002-2-A | | 2A | | | | |
| 12-PML-006-2-A | | 6A | | | | |
| 12-PML-010-2-A | | 10A | | | | |
| 12-PMF-001-2-B | | 1A | | 2 | B | |
| 12-PMF-002-2-B | | 2A | | | | |
| 12-PMF-006-2-B | | 6A | | | | |
| 12-PML-001-2-C | | 1A | | 1 | C | |

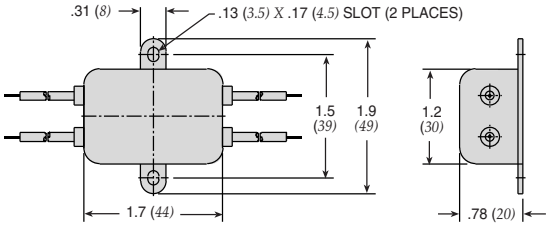
Note: All types are designed to meet the requirement of UL 1283, CSA 22.2. VDE 0565-3
Test voltage: 1500VAC one minute, line to ground
Insulation resistance: 300 Mohm min. at 500VDC
Voltage drop: 1V max. at rated current
Discharge time: 0.4 sec. max.

api technologies corp.
Spectrum Control

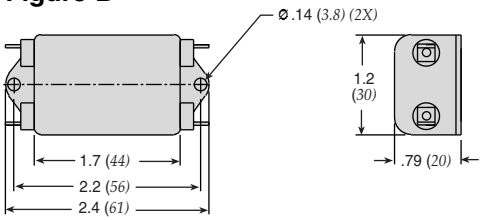
# Power Line Filters
# Single Stage Wire Leads
for Medical Purpose Applications

## 12-PML & 12-PMF Series

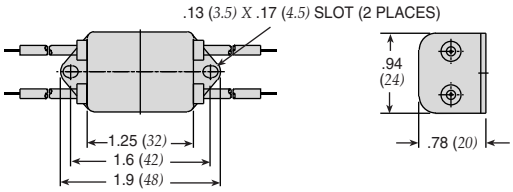
### Figure A




### Figure B

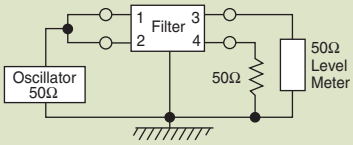



### Figure C

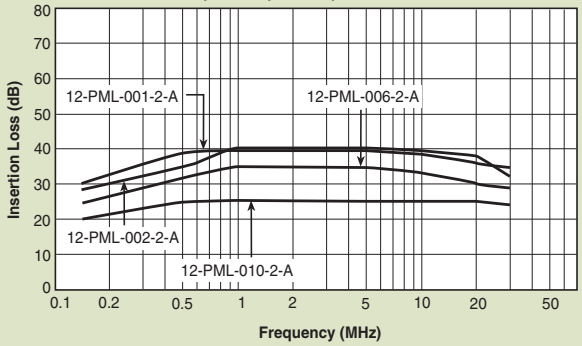



Dimensions in inches *(mm)*

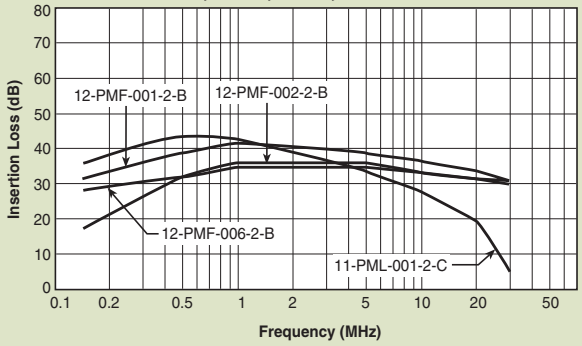
## Common Mode



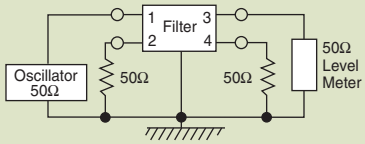

### 12-PML-001;-002;-006;-010



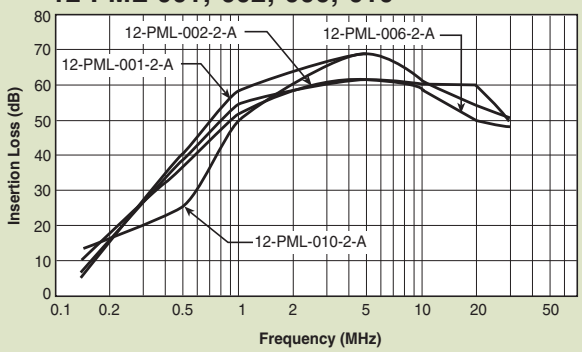

### 12-PMF-001;-002;-006;-010



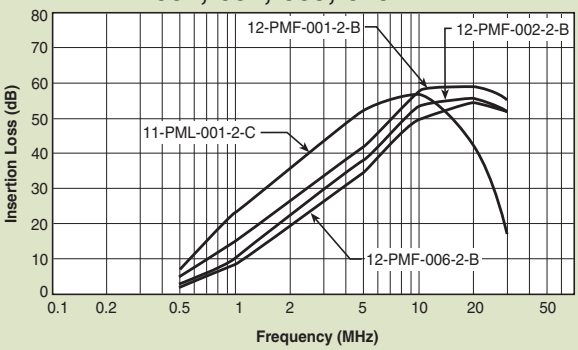

## Normal Mode




### 12-PML-001;-002;-006;-010




### 12-PMF-001;-002;-006;-010



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage

## 62-LMF & LMB Series

Tested and found to be
IAW VDE 0565 Part 3

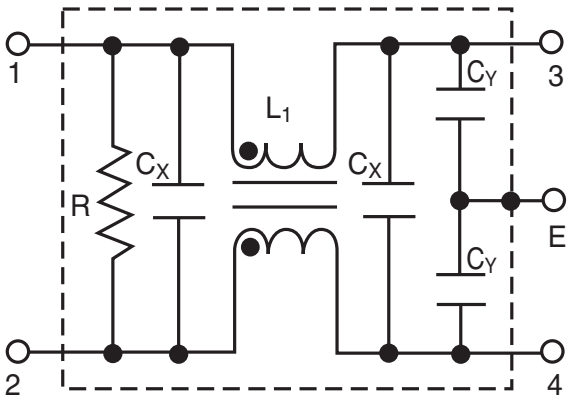
### Features

- 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

| Model* | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-LMB-030-5-11 | 250VAC | 3A | 0.50mA | 3300pF | 0.1uF | 14mH | 45°C |
| 62-LMF-030-5-11 | | | | | | | |
| 62-LMB-050-5-11 | | 5A | | | 0.1uF & .22uF | 7.0mH | |
| 62-LMF-050-5-11 | | | | | | | |
| 62-LMB-080-5-11 | | 8A | | | .22uF | 4.2mH | |
| 62-LMF-080-5-11 | | | | | | | |
| 62-LMB-100-5-11 | | 10A | | | .33uF | 2.2mH | |
| 62-LMF-100-5-11 | | | | | | | |

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)

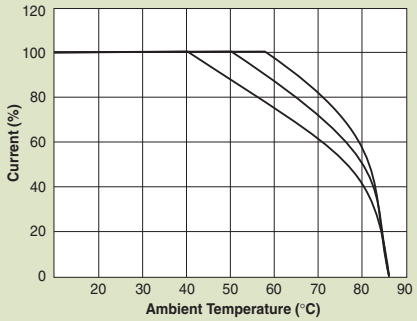
*62-LMF - designates Fast-on terminals
62-LMB - designates Bolt-in terminals
62-LML - wire lead in/outputs also available

api technologies corp.
Spectrum Control

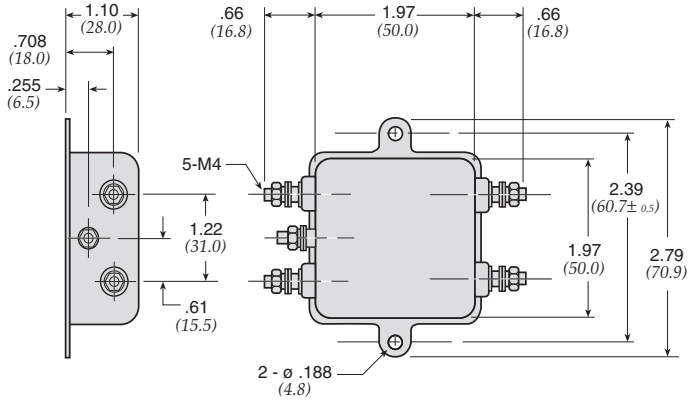
# Power Line Filters
# Single Stage

## 62-LMF & LMB Series

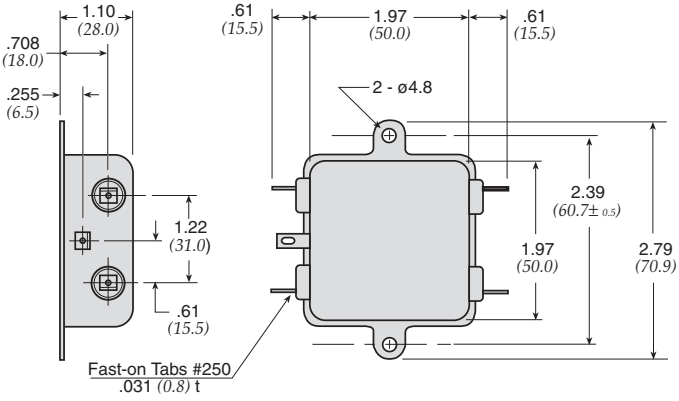
### Temperature Characteristics




### 62-LMB

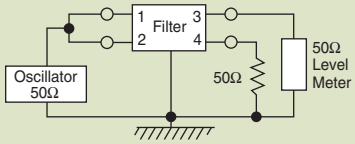



### 62-LMF

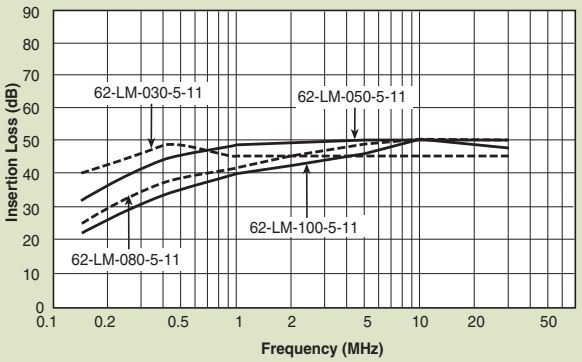



Dimensions in inches *(mm)*

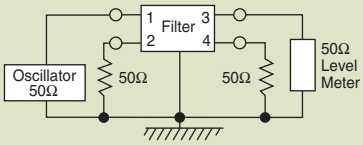
### Common Mode



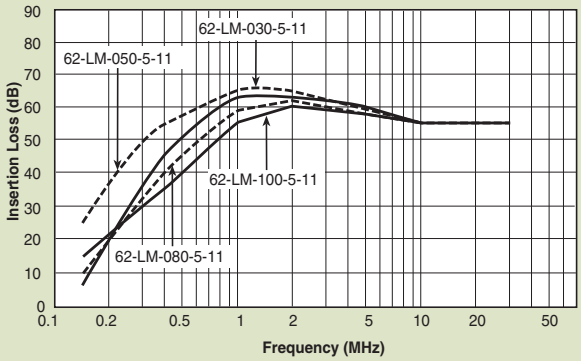

**62-LMF & LMB**




### Normal Mode




**62-LMF & LMB**



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage

## 62-PMF & PMB Series

Tested and found to be
IAW VDE 0565 Part 3

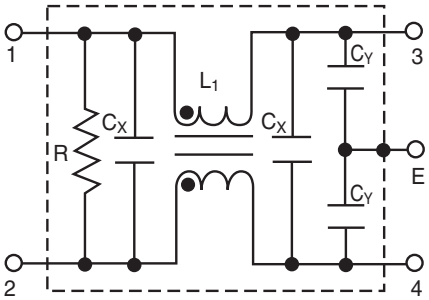
### Features

- 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

### Circuit Diagram




### Specifications

| Model* | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-PMB-050-5-11 | 250VAC | 5A | 0.50mA | 3300pF | 0.1uF | 14mH | 30°C |
| 62-PMF-050-5-11 | | | | | | | |
| 62-PMB-080-5-11 | | 8A | | | .1uF | 7.0mH | |
| 62-PMF-080-5-11 | | | | | | | |
| 62-PMB-100-5-12 | | 10A | | | .22uF | 4.2mH | |
| 62-PMF-100-5-12 | | | | | | | |
| 62-PMB-150-5-13 | | 15A | | | .33uF | 2.2mH | 35°C |
| 62-PMF-150-5-13 | | | | | | | |
| 62-PMB-200-5-13 | | 20A | | | | 1.8mH | 45°C** |
| 62-PMF-200-5-13 | | | | | | | |

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)

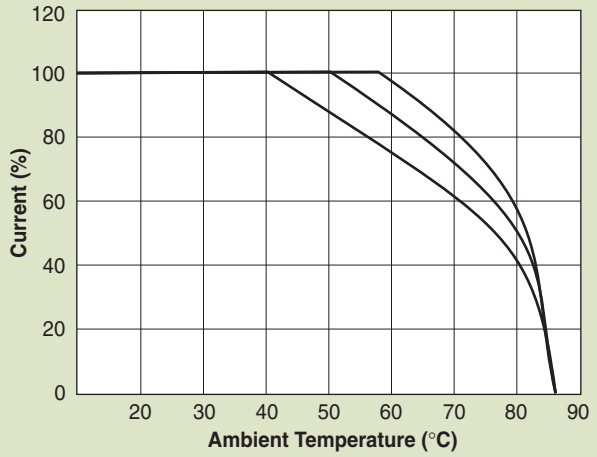
* PMF - designates Fast-on terminals
PMB - designates Bolt-in terminals
** The temperature rise of 20 amp units can be decreased to 30°C by mounting on 200 X 200 x 1.0(mm) steel chassis

api technologies corp.
Spectrum Control

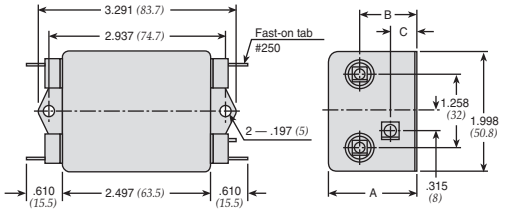
# Power Line Filters
# Single Stage

## 62-PMF & PMB Series

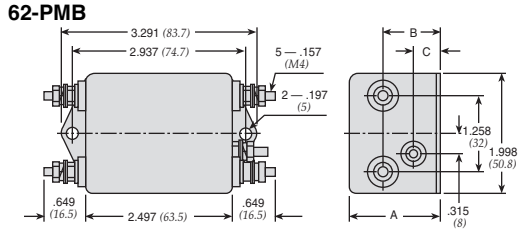
### Temperature Characteristics




**62-PMF**



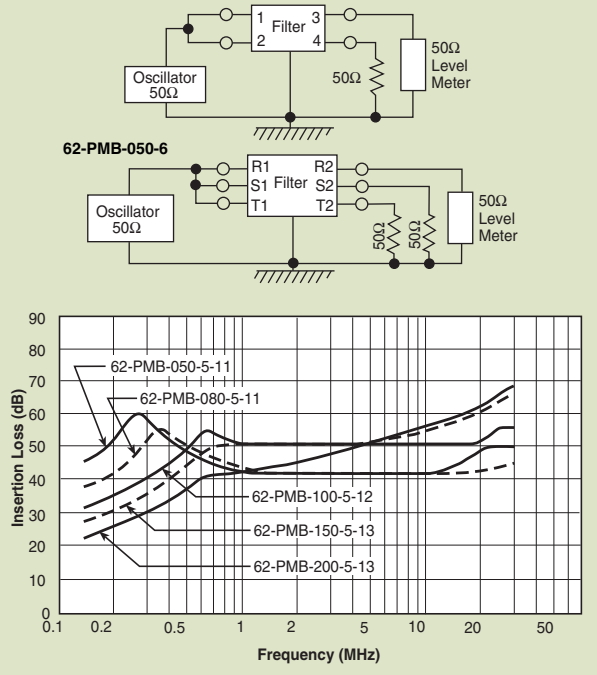

**62-PMB**



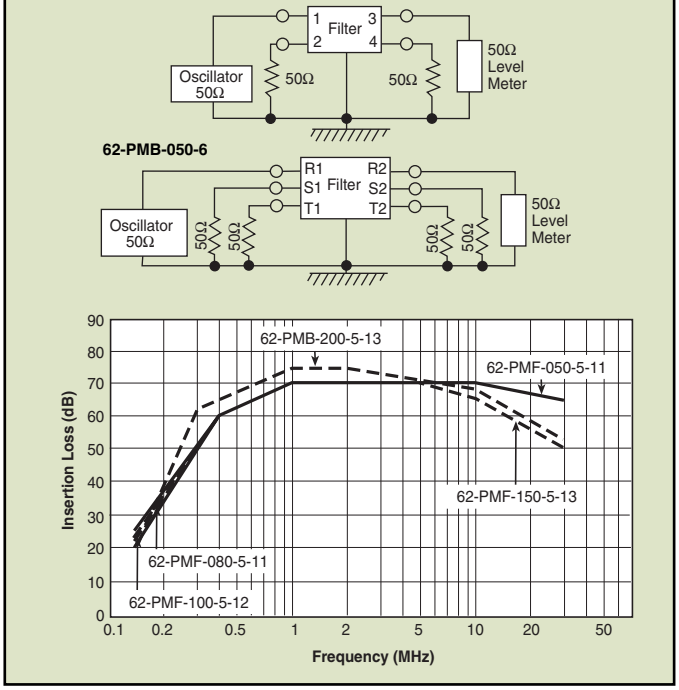

| MODEL | A | B | C |
|---|---|---|---|
| 62-PMF/PMB-100-200 | 1.490 (38) | .944 (24) | .433 (11) |
| 62-PMF/PMB-050-080 | 1.258 (32) | .786 (20) | 0 (0) |

Dimensions in inches *(mm)*

### Common Mode




### Normal Mode



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage

## 12-PMF Series

### Features

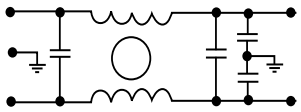
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component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

### Applications

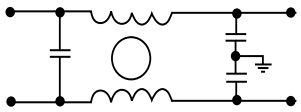
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Medical equipment
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment
- Office automation equipment, such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

### Circuit Diagram

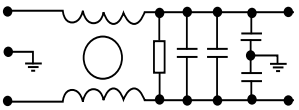
Circuit 1



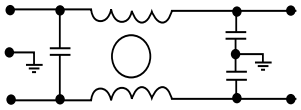
Circuit 2



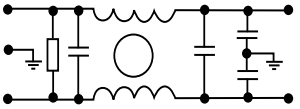
Circuit 3



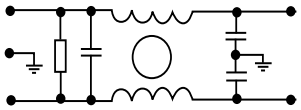
Circuit 4



Circuit 5



Circuit 6



## Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 12-PMF-001-5-A | 120/250VAC | 1A | 0.5mA | 1 | A | 30°C |
| 12-PMF-002-5-B | | 2A | | 2 | B | |
| 12-PMF-003-5-A | | 3A | | 4 | A | |
| 12-PMF-003-5-B | | | | 2 | B | |
| 12-PMF-006-5-A | | 6A | | 4 | A | |
| 12-PMF-006-5-C | | | | 1 | C | |
| 12-PMF-006-5-D | | | | 6 | D | |
| 12-PMF-010-5-A | | 10A | | 2 | A | |
| 12-PMF-010-5-C | | | | 3 | C | |
| 12-PMF-015-5-C | | 15A | | 5 | | |
| 12-PMF-015-5-E | | | | | E | |
| 12-PMF-020-5-C | | 20A | | | C | |
| 12-PMF-020-5-D | | | | | D | |
| 12-PMF-020-5-E | | | | | E | |

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.

api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage

## 12-PMF Series

**Figure A**

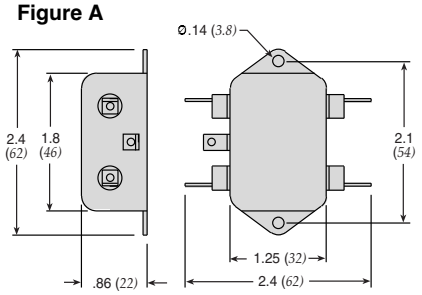



**Figure B**

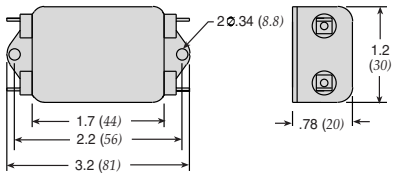



**Figure C**

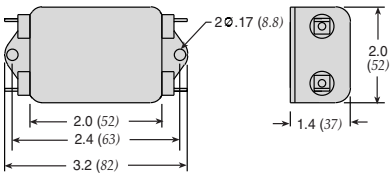



**Figure D**

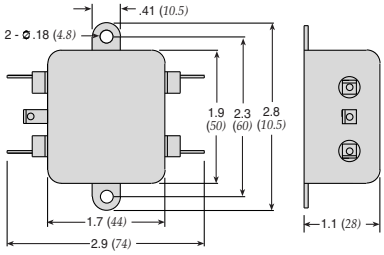
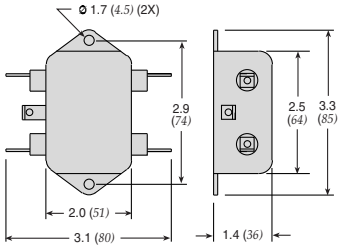
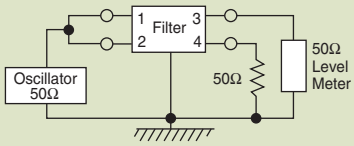



**Figure E**

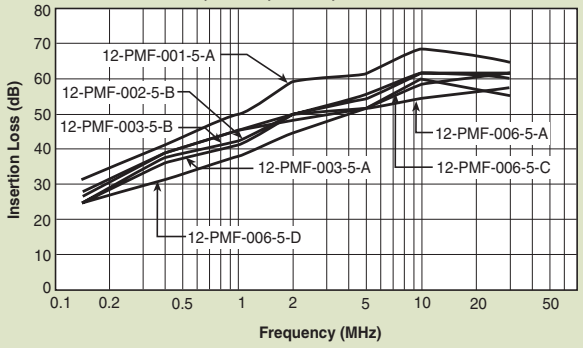



Dimensions in inches *(mm)*

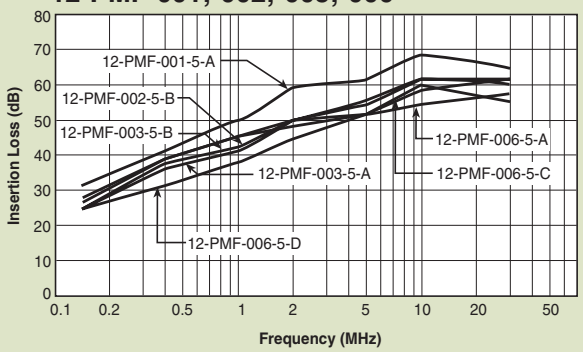
## Common Mode



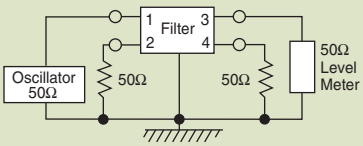

### 12-PMF-001;-002;-003;-006



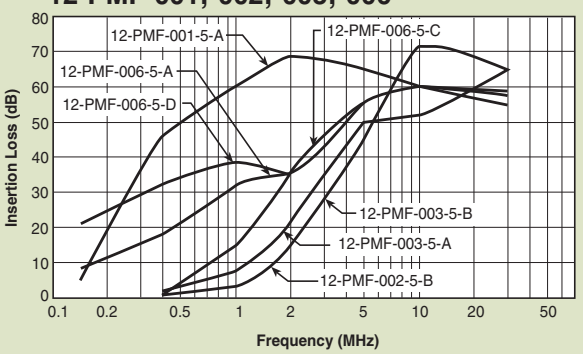

### 12-PMF-001;-002;-003;-006



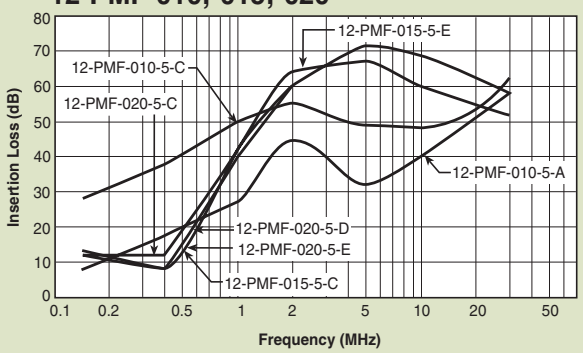

## Normal Mode




### 12-PMF-001;-002;-003;-006




### 12-PMF-010;-015;-020



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage - Higher Current

## 62-PMB Series

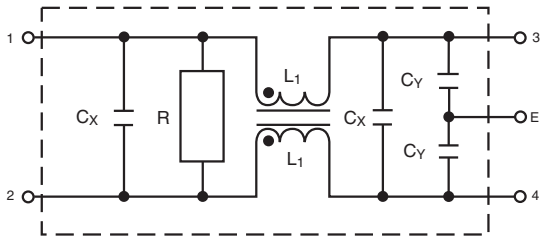
### Features

- 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

### Circuit Diagram




## Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_Y$ | Capacitance $C_X$ | Inductance ($L_1$) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|
| 62-PMB-300-5-14 | 250VAC | 30A | 0.50mA | 3300pF | .47uF | 1.6mH | 45°C |
| 62-PMB-400-5-14 | | 40A | | | | 0.8mH | |

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)

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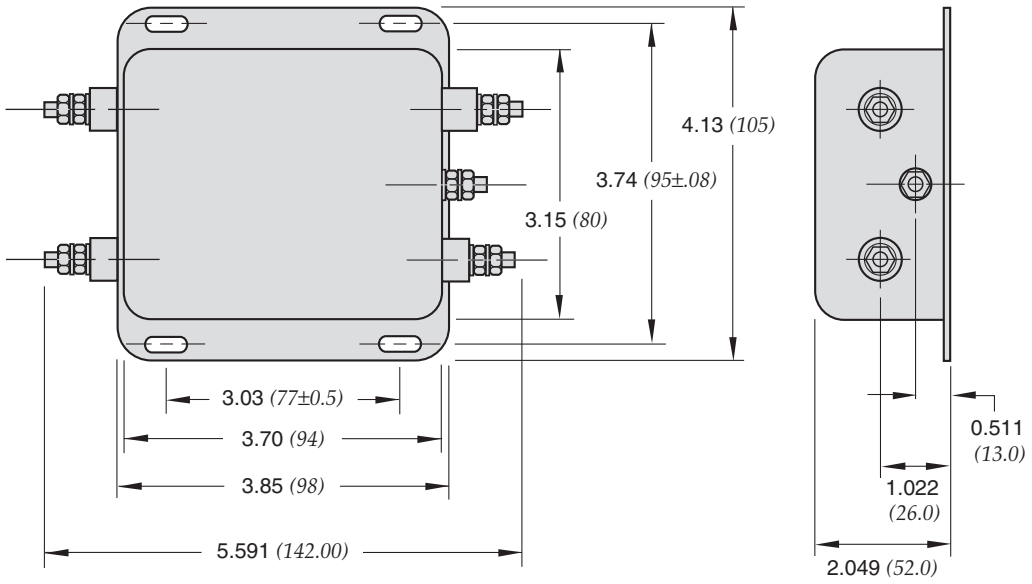
Spectrum Control

# Power Line Filters
# Single Stage - Higher Current

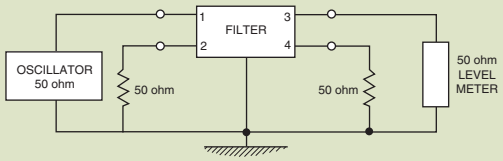
## 62-PMB Series

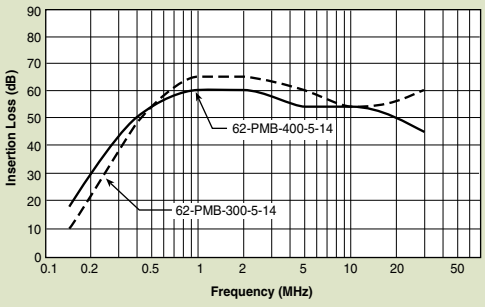
### 62-PMB-300-5-14 and 62-PMB-400-5-14



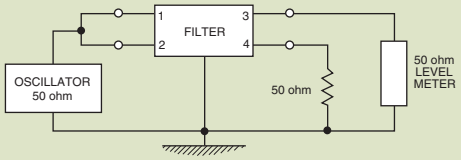

Dimensions in inches *(mm)*

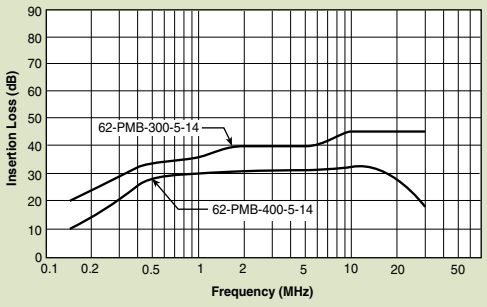
## Normal Mode




## Common Mode



api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage - Higher Current

## 12-PMB Series

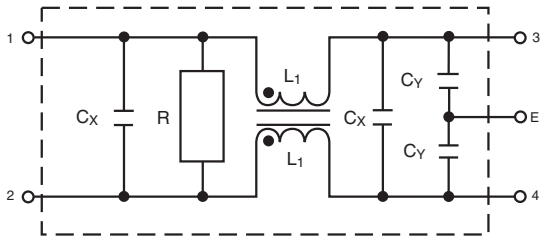
### Features

- 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

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

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)

api technologies corp.
Spectrum Control

# Power Line Filters
# Single Stage - Higher Current

## 12-PMB Series

**Figure A**

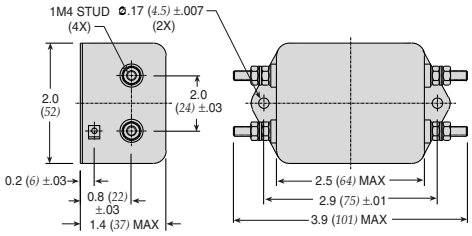



**Figure B**

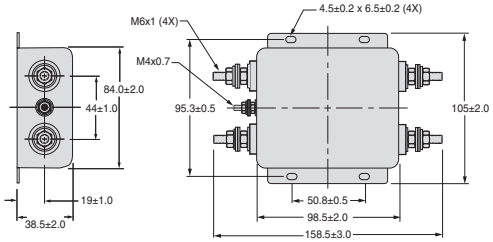
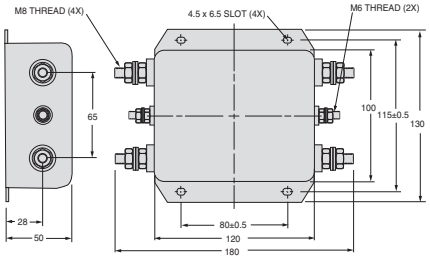
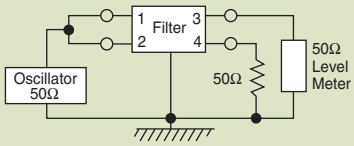



**Figure C**

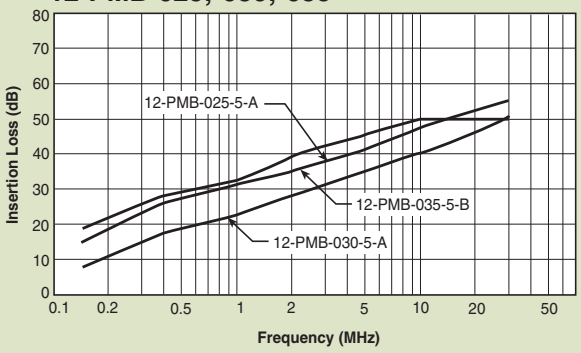



Dimensions in inches *(mm)*

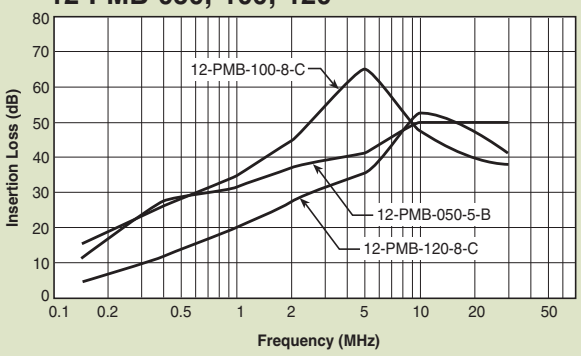
## Common Mode



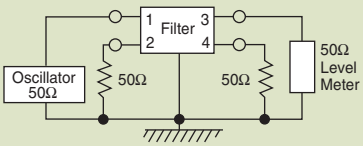

### 12-PMB-025;-030;-035



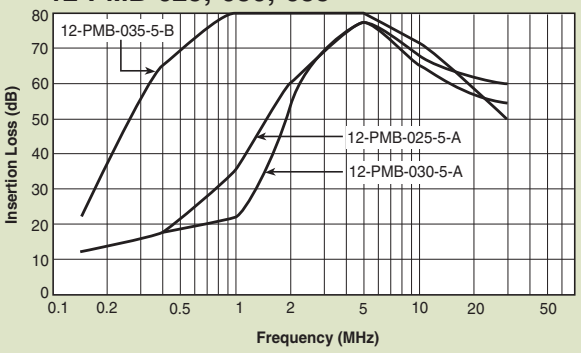

### 12-PMB-050;-100;-120



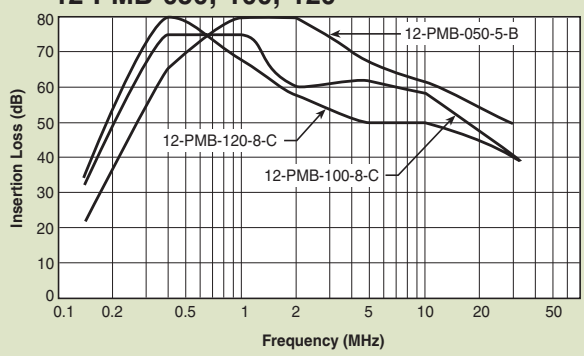

## Normal Mode




### 12-PMB-025;-030;-035




### 12-PMB-050;-100;-120



api technologies corp.
Spectrum Control

# Power Line Filters
# DC - Higher Current

## 12-PMF & 12 PMB DC Series

### Features

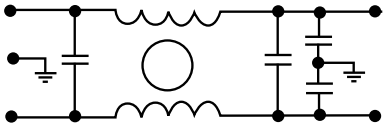
- Space-saving, compact designs
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective shielding
- Excellent filtering characteristics for both normal mode and common mode
- Epoxy molded for internal component reliability
- 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

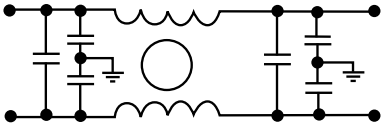
- Digital equipment
- Computers and peripherals
- Measuring instruments
- Equipment requiring very high impulse attenuation
- Factory automation equipment
- Industrial equipment such as UPS, inverters and converters
- Telecommunications equipment

### Circuit Diagram

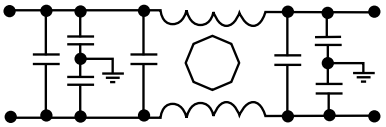
Circuit 1



Circuit 2



Circuit 3



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|
| 12-PMF-006-DC-C | 48/250 VDC | 6A | 1 | A | 30°C |
| 12-PMF-010-DC-C | | 10A | | | |
| 12-PMF-015-DC-C | | 15A | | | |
| 12-PMF-020-DC-C | | 20A | | | |
| 12-PMF-025-DC-D | | 25A | | B | |
| 12-PMB-025-DC-F | | | | C | |
| 12-PMB-030-DC-F | | 30A | | | |
| 12-PMB-035-DC-F | | 35A | | | |
| 12-PMB-040-DC-F | | 40A | | | |
| 12-PMB-040-DC-B | | | | D | |
| 12-PMB-050-DC-B | | 50A | | | |
| 12-PMB-060-DC-B | | 60A | | | |
| 12-PMB-080-DC-G | | 80A | 2 | E | |
| 12-PMB-080-DC-C | | | | F | |
| 12-PMB-100-DC-C | | 100A | 3 | | |
| 12-PMB-120-DC-C | | 120A | | | |
| 12-PMB-140-DC-C | | 140A | | | |
| 12-PMB-180-DC-E | | 180A | 2 | G | |
| 12-PMB-200-DC-E | | 200A | | | |
| 12-PMB-260-DC-E | | 260A | | | |

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)

api technologies corp.
Spectrum Control

# Power Line Filters
# DC - Higher Current

## 12-PMF & 12-PMB DC Series

**Figure A**

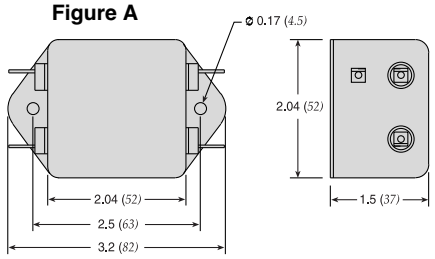



**Figure B**

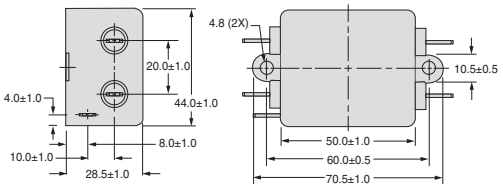



**Figure C**

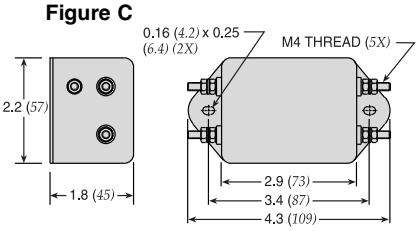



**Figure D**

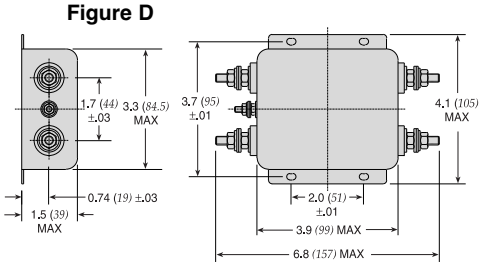



**Figure E**

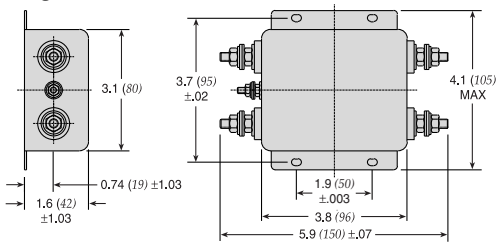



**Figure F**

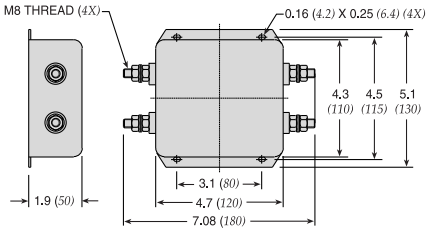
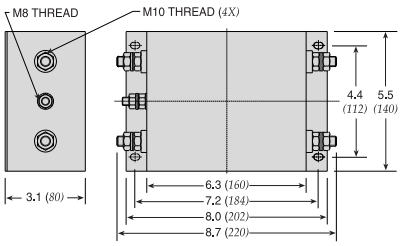
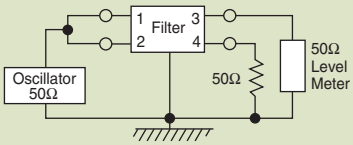



**Figure G**

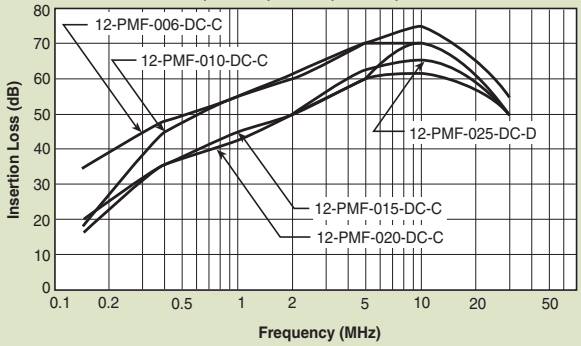



Dimensions in inches *(mm)*

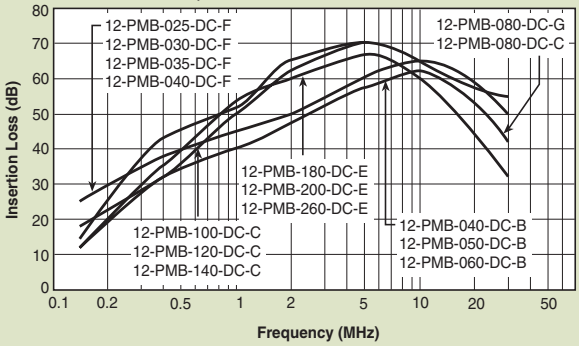
## Common Mode



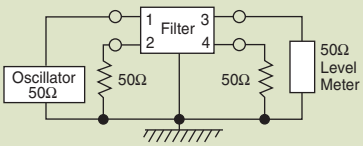

### 12-PMF-006;-010;-015;-020;-025



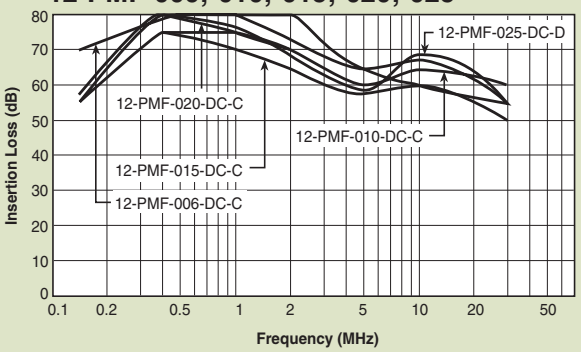

### 12-PMB-025; thru -260



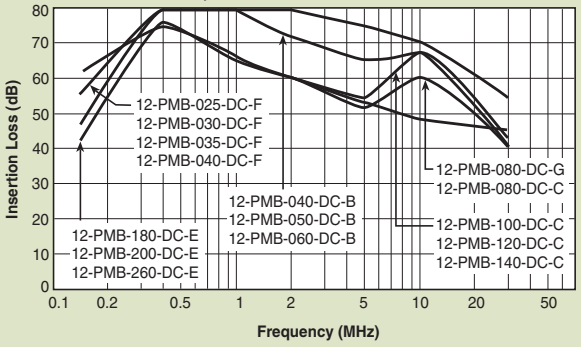

## Normal Mode




### 12-PMF-006;-010;-015;-020;-025




### 12-PMB-025; thru -260



api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 62-MMF Series

### Features

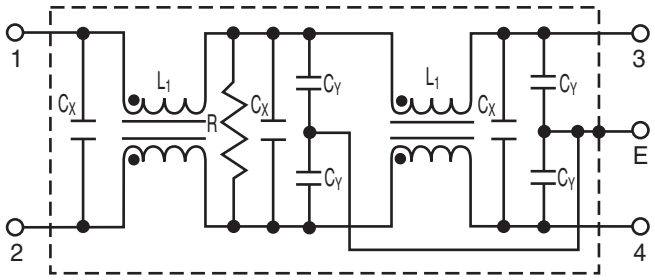
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Epoxy molded for reliability
- Structure provides effective shielding for noise generated 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

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Capacitance $C_{Y1}$ | Capacitance $C_{Y2}$ | Capacitance $C_X$ | Inductance ($L_1$) (2X) | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|---|---|
| 62-MMF-030-7-11 | 250VAC | 3A | .7mA | 3300pF | 1000pF | 0.1uF | 3.7mH | 30°C |
| 62-MMF-050-7-11 | 250VAC | 5A | .7mA | 3300pF | 1000pF | 0.1uF | 2.9mH | 30°C |

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)

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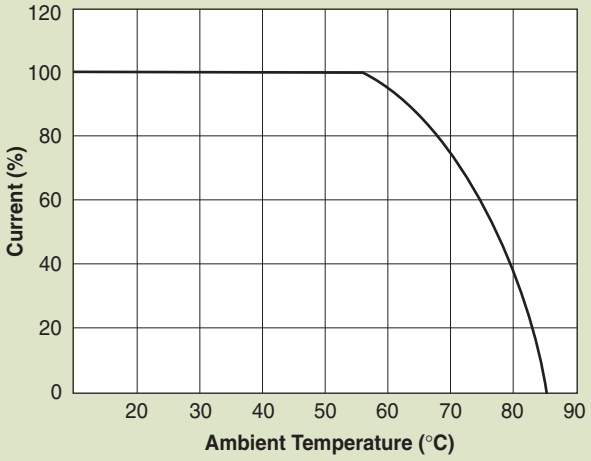
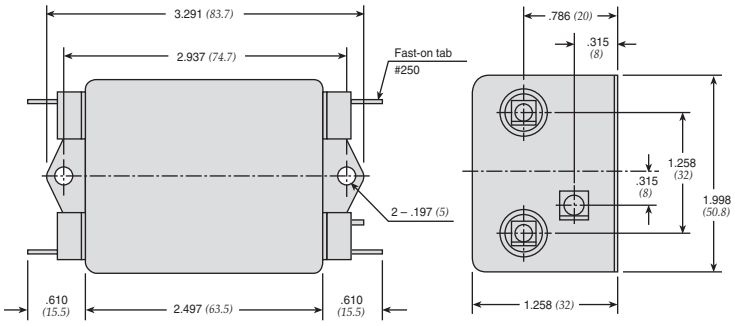
# Power Line Filters
# Dual Stage

## 62-MMF Series

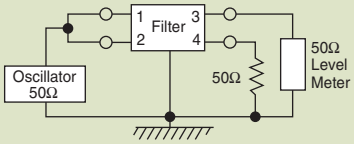
### Temperature Characteristics



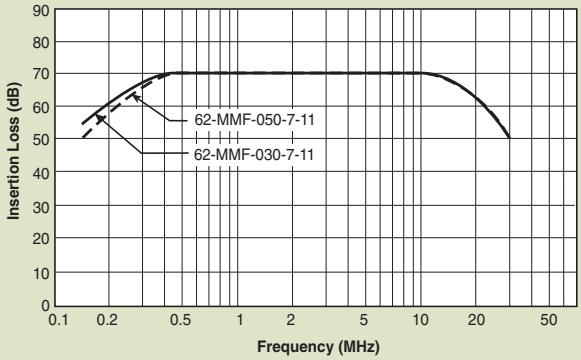




Dimensions in inches *(mm)*

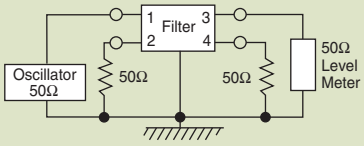
### Common Mode



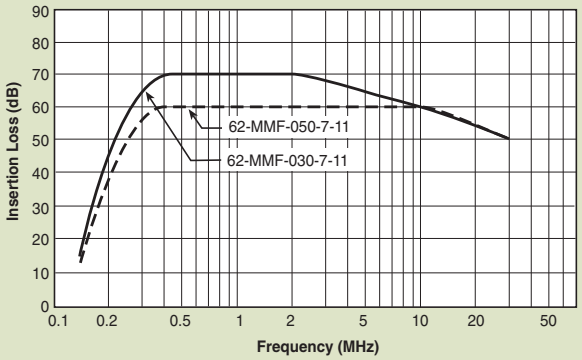

**62-MMF**




### Normal Mode




**62-MMF**



api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

### Features

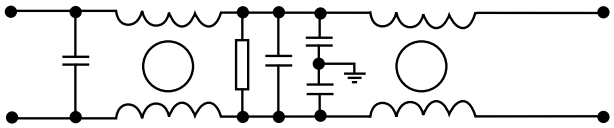
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Structure provides effective shielding for noise generated both externally and internally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

### Applications

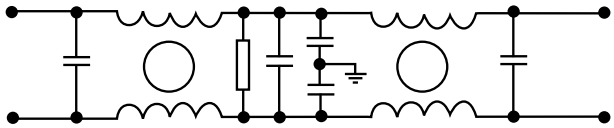
- Digital equipment
- Switching power supplies
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

### Circuit Diagram

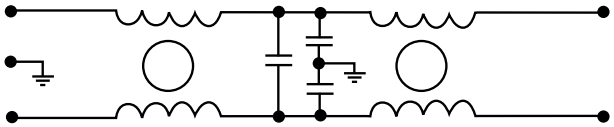
Circuit 1



Circuit 2



Circuit 3



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 12-MMF-002-5-F | 120/250VAC | 2A | 0.25mA@120VAC/ 0.5mA@250VAC | 1 | A | 30°C |
| 12-MMF-003-5-F | | 3A | | | A | |
| 12-MMF-003-5-A | | | | 3 | B | |
| 12-MMF-006-5-F | | 6A | | 2 | A | |
| 12-MMF-006-5-G | | | | | C | |
| 12-MMF-008-5-B | | 8A | | | | |
| 12-MMF-010-5-F | | 10A | | | A | |
| 12-MMF-010-5-G | | | | | A1 | |
| 12-MMF-010-5-B | | | | | C | |
| 12-MMF-012-5-B | | 12A | | | | |
| 12-MMB-015-5-E | | 15A | | | D | |
| 12-MMB-020-5-F | | 20A | | | G | |
| 12-MMB-030-5-D | | 30A | | | E | |
| 12-MMB-050-5-C | | 50A | | | F | |

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.
Discharge time: 0.4 sec. max.

api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

**Figure A**

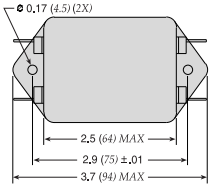



**Figure A1**

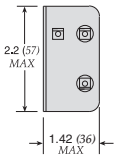



**Figure B**

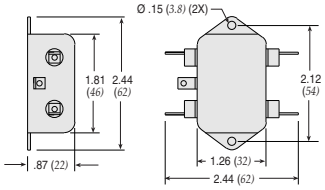



**Figure C**

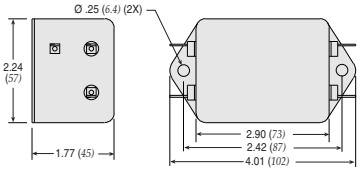



**Figure D**

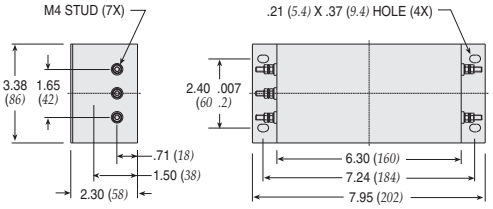



**Figure E**

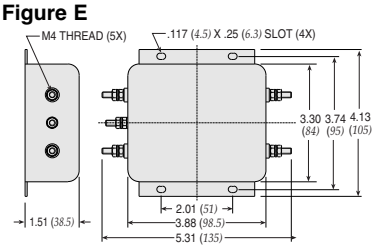



**Figure F**

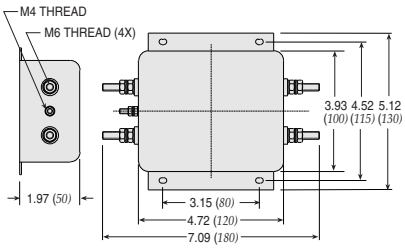
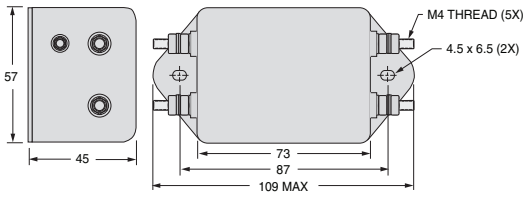
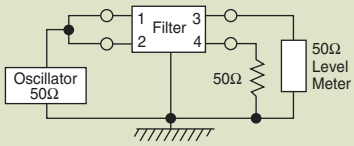



**Figure G**

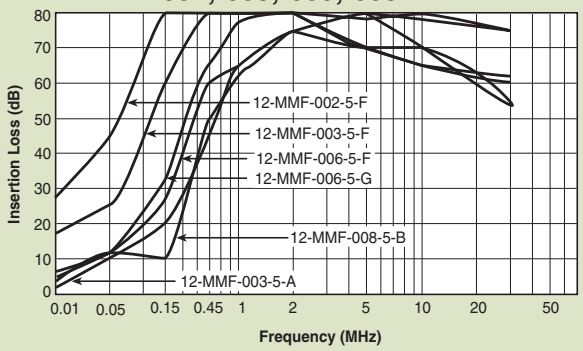



Dimensions in inches *(mm)*

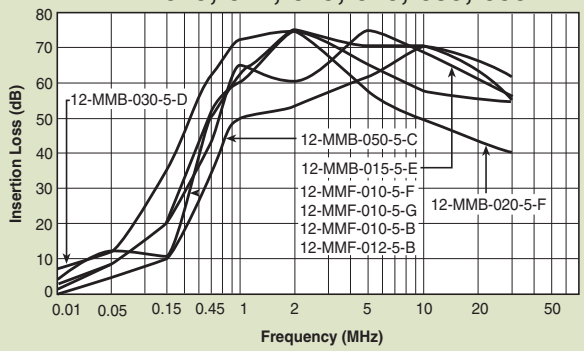
## Common Mode



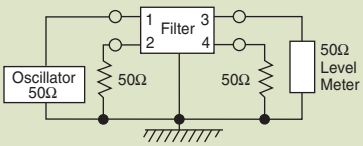

### 12-MMF-002;-003;-006;-008



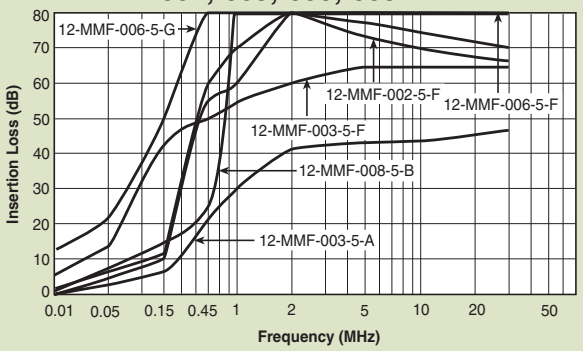

### 12-MMF-010;-012;-015;-020;-030;-050



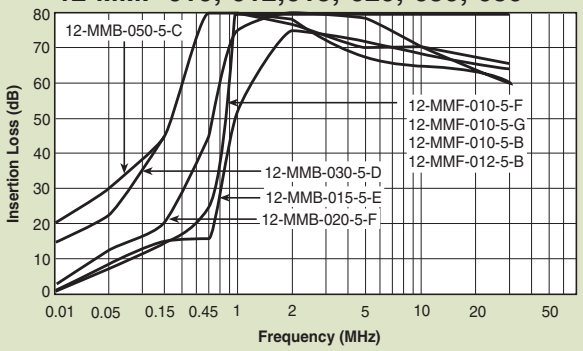

## Normal Mode




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




### 12-MMF-010;-012;015;-020;-030;-050



api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

### Features

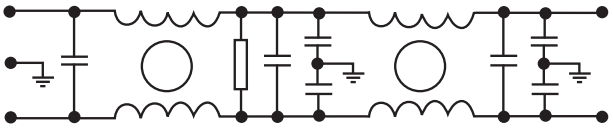
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Structure provides effective shielding for noise generated both externally and internally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

### Applications

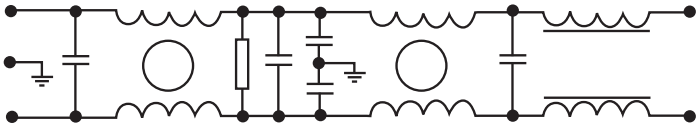
- Digital equipment
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

### Circuit Diagram

Circuit 1



Circuit 2



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 12-MMF-003-11-F | 120/250VAC | 3A | 1.5mA | 1 | A | 30°C |
| 12-MMF-006-11-F | | 6A | | | | |
| 12-MMF-010-11-F | | 10A | | | | |
| 12-MMB-015-11-G | | 15A | | 1 | C | |
| 12-MMB-020-11-D | | 20A | | | B | |
| 12-MMB-030-11-D | | 30A | | | | |
| 12-MMB-040-11-B | | 40A | | 2 | D | |
| 12-MMB-040-11-E | | | | 1 | E | |
| 12-MMB-050-11-H | | 50A | | | F | |

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)

api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

**Figure A**

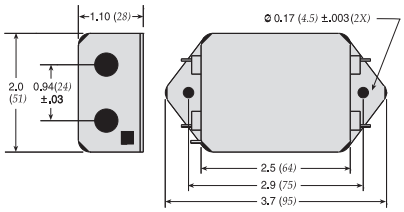



**Figure B**

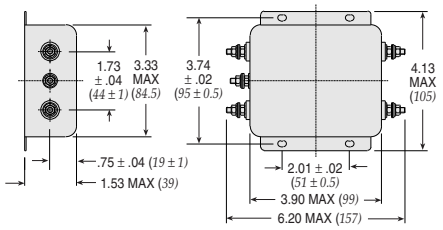



**Figure C**

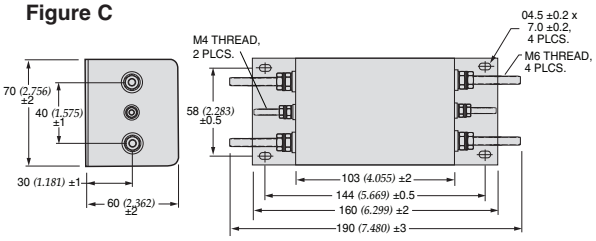



**Figure D**

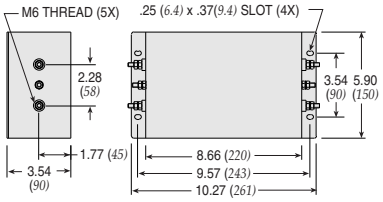



**Figure E**

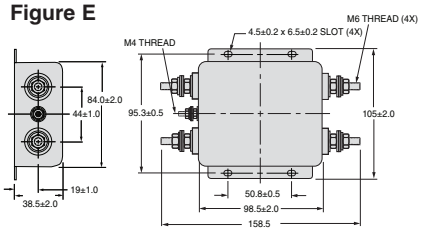
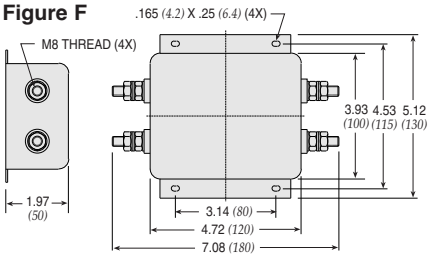
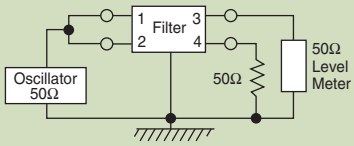



**Figure F**

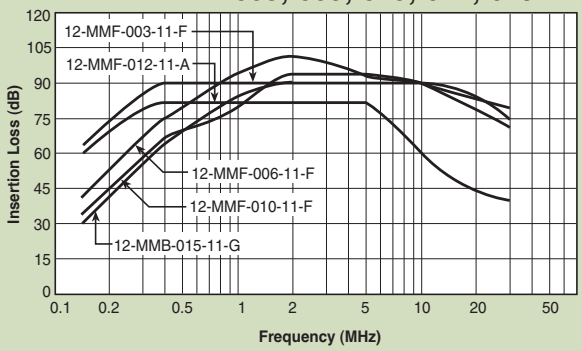



Dimensions in inches *(mm)*

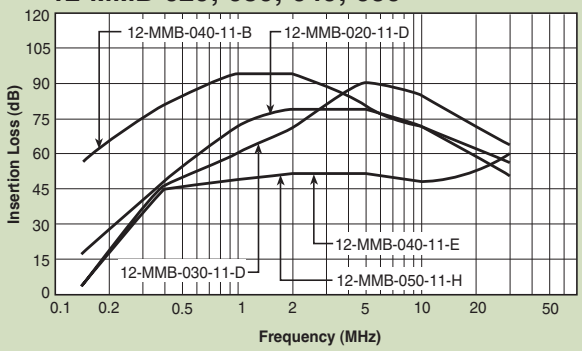
## Common Mode



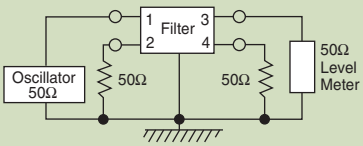

### 12-MMF/MMB-003;-006;-010;-012;-015



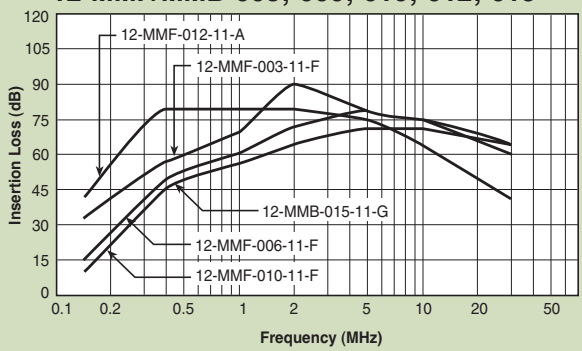

### 12-MMB-020;-030;-040;-050



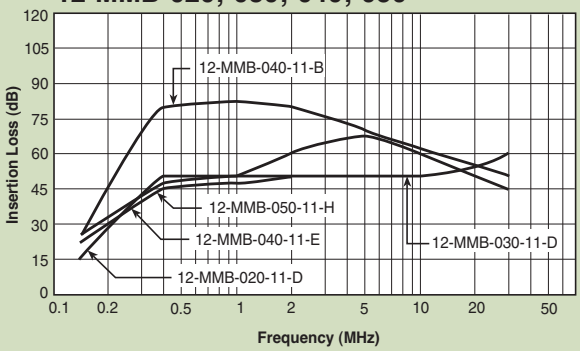

## Normal Mode




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




### 12-MMB-020;-030;-040;-050



api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

### Features

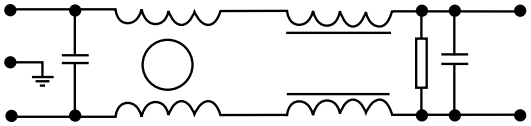
- Suitable for products that must conform to FCC regulations
- Excellent attenuation for high voltage impulse
- Metal case provides effective EMI shielding
- Two stages for excellent filtering characteristics
- Epoxy molded for reliability
- Structure provides effective shielding for noise generated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

### Applications

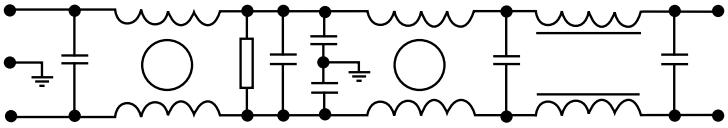
- Digital equipment
- Personal computers and peripherals
- Measuring instruments and medical equipment
- Telecommunications equipment
- Equipment requiring very high noise attenuation

### Circuit Diagram

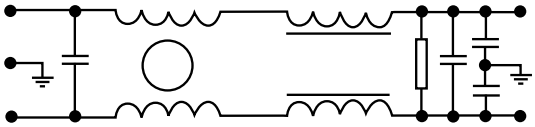
Circuit 1



Circuit 2



Circuit 3



### Specifications

| Model | Rated Voltage (@ 50/60Hz) | Rated Current | Leakage Current (Max.) | Circuit Diagram | Figure | Temperature Rise (Max.) |
|---|---|---|---|---|---|---|
| 12-MMF-001-5-F | 120/250VAC | 1A | 0.5mA | 3 | A | 30°C |
| 12-MMF-003-5-G | | 3A | | | B | |
| 12-MMF-003-2-G | | | 5uA | 1 | | |
| 12-MMF-006-5-G | | 6A | 0.5mA | 2 | | |
| 12-MMB-010-5-D | | 10A | | | C | |
| 12-MMB-015-5-E | | 15A | | | D | |
| 12-MMB-020-5-E | | 20A | | | | |
| 12-MMB-030-5-E | | 30A | | | | |

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)

api technologies corp.
Spectrum Control

# Power Line Filters
# Dual Stage

## 12-MMF & 12-MMB Series

**Figure A**

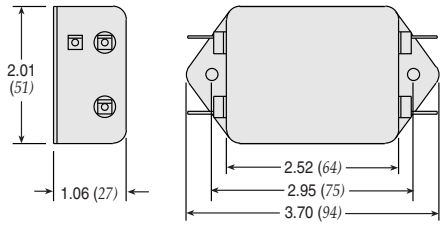



**Figure B**

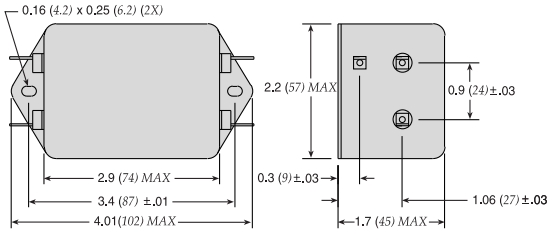



**Figure C**

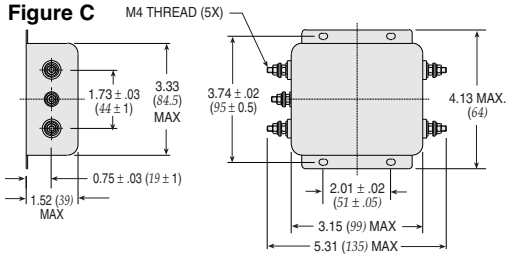
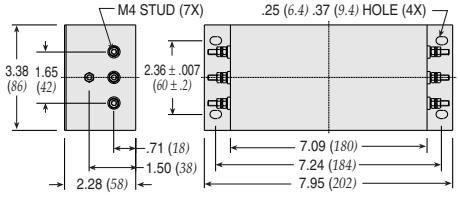
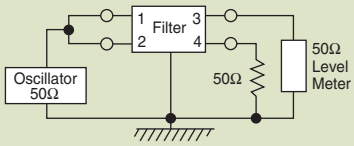



**Figure D**

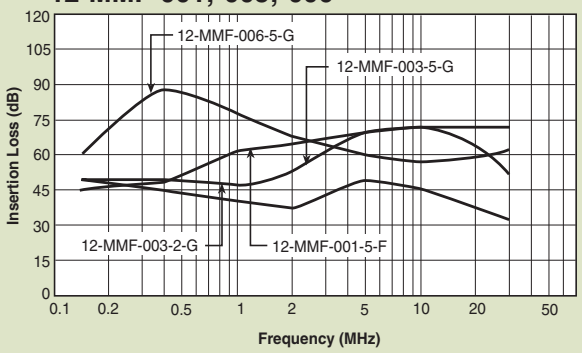



Dimensions in inches *(mm)*

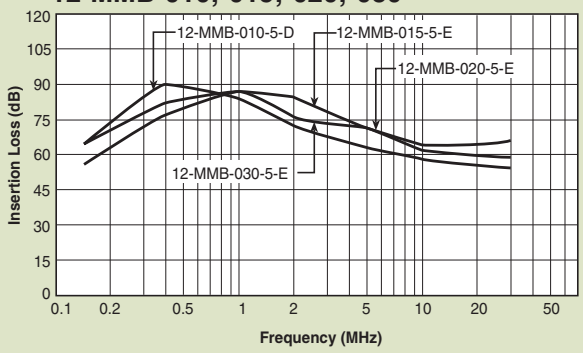
## Common Mode



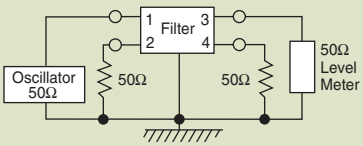

### 12-MMF-001;-003;-006



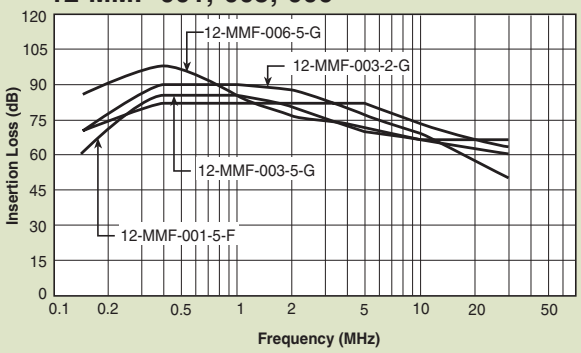

### 12-MMB-010;-015;-020;-030



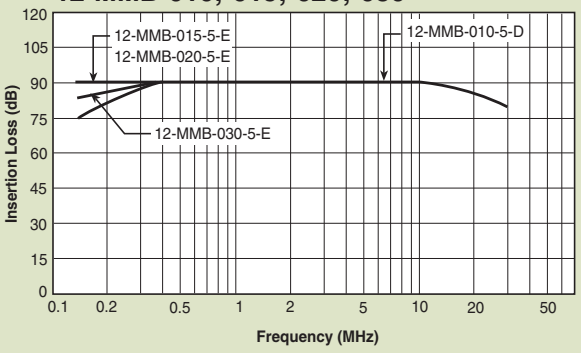

## Normal Mode




### 12-MMF-001;-003;-006




### 12-MMB-010;-015;-020;-030



# OCEAN CHIPS
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## Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

AVIC JONHON

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(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

**«FORSTAR»** (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).

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