

# Power Entry Modules

*The industry's most complete line of power entry modules are ideal for products that must conform to FCC Part 15 regulations. These metal cased miniature filters offer high performance.*



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# Power Entry Modules Bolt-in Rear Terminals

## 60-BPR & BPS Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Solder lug and Fast-on tab terminals available
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF17)
- UL approved low leakage version also available

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



Tested and found to be  
IAW VDE 0565 Part 3.



### Circuit Diagram



### Specifications

| Model*          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|------------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                 |                              |                  |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 60-XXX-010-3-2  | 250VAC                       | 1A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 6.0mH                           | 30°C                       |
| 60-XXX-010-3-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-010-5-2  |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-010-5-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-020-3-2  | 250VAC                       | 2A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 2.4mH                           | 30°C                       |
| 60-XXX-020-3-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-020-5-2  |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-020-5-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-030-3-2  | 250VAC                       | 3A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 1.2mH                           | 30°C                       |
| 60-XXX-030-3-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-030-5-2  |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-030-5-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-060-3-2  | 250VAC                       | 6A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 0.53mH                          | 45°C                       |
| 60-XXX-060-3-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-060-5-2  |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-060-5-4  |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-100-3-2  | 250VAC                       | 10A              | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 0.26mH                          | 45°C                       |
| 60-XXX-100-5-2  |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-BPR-150-3-11 | 250VAC                       | 15A              | 0.35mA                    | 2200pF ± 20%   | .1uF ± 20%     | 0.15mH                          | 45°C                       |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 45g  
Input: Compatible with IEC-320

\* Substitute BPR or BPS for XXX

BPS - Solder lug terminals  
BPR - Fast-on tab terminals

# Power Entry Modules Bolt-in Rear Terminals

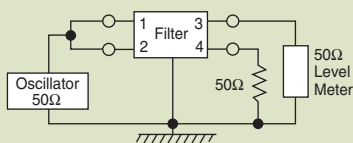
## 60-BPR & BPS Series

### Temperature Characteristics

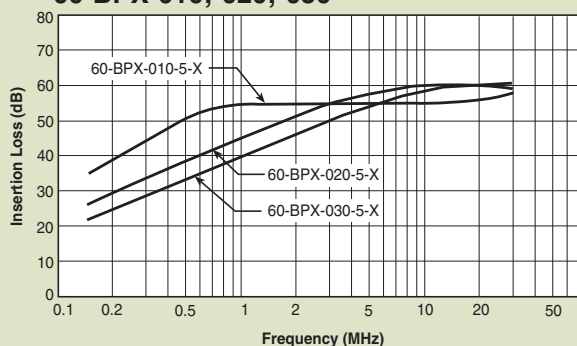


Dimensions in inches (mm)

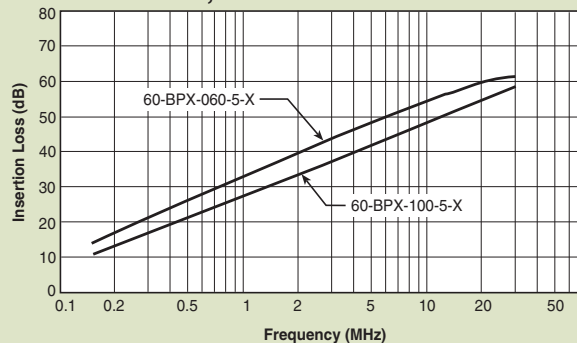
### Common Mode



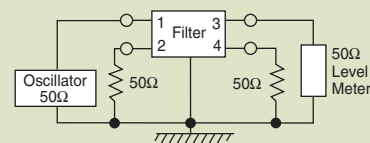
#### 60-BPX-010;-020;-030



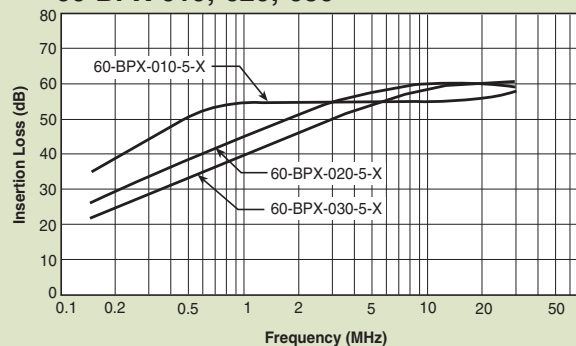
#### 60-BPX-060;-100



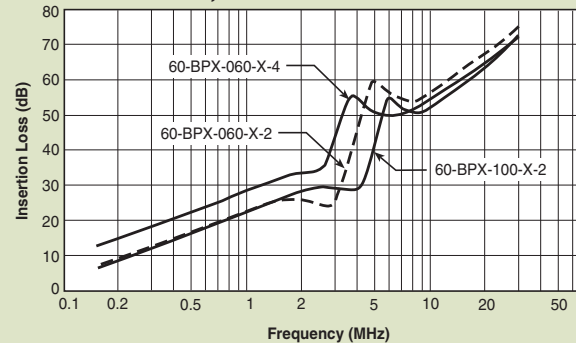
### Normal Mode



#### 60-BPX-010;-020;-030



#### 60-BPX-060;-100



# Power Entry Modules Bolt-in Right Angle Terminals

## 60-BPF Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- PCB mounting types available (see page PF46)
- Length under tab is shortened for small spaces
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF19)
- UL approved low leakage version also available

### Applications

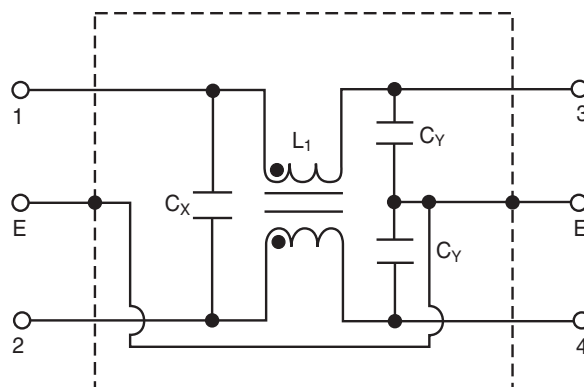
- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



Tested and found to be  
IAW VDE 0565 Part 3.



### Circuit Diagram



## Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|----------------|------------------------------|------------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                |                              |                  |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 60-BPF-010-3-2 | 250VAC                       | 1A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 6.0mH                           | 30°C                       |
| 60-BPF-010-3-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-010-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-BPF-010-5-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-020-3-2 | 250VAC                       | 2A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 2.4mH                           | 30°C                       |
| 60-BPF-020-3-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-020-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-BPF-020-5-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-030-3-2 | 250VAC                       | 3A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 1.2mH                           | 30°C                       |
| 60-BPF-030-3-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-030-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-BPF-030-5-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-060-3-2 | 250VAC                       | 6A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 0.53mH                          | 45°C                       |
| 60-BPF-060-3-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |
| 60-BPF-060-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-BPF-060-5-4 |                              |                  |                           |                | .047uF ± 20%   |                                 |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

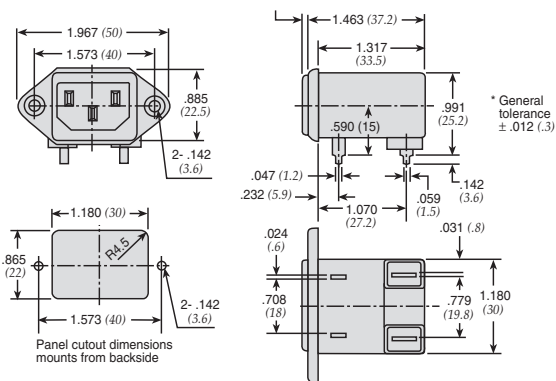
# Power Entry Modules Bolt-in Right Angle Terminals

## 60-BPF Series

### Temperature Characteristics



### 60-BPF Fast-on Terminals

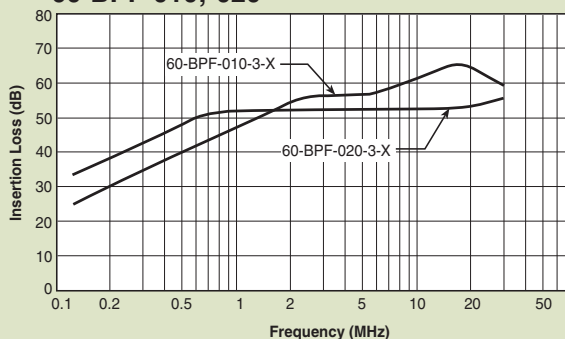


Dimensions in inches (mm)

### Common Mode



#### 60-BPF-010;-020



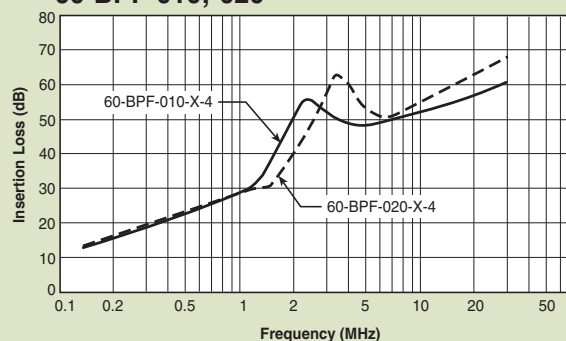
#### 60-BPF-030;-060



### Normal Mode



#### 60-BPF-010;-020



#### 60-BPF-030;-060



# Power Entry Modules High Frequency Attenuation

## 60-BHS Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal cased miniature filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- PCB mounting types available (see page PF48)
- PCB mounting minimizes space and provides economical installation
- Excellent filtering characteristics for high frequencies
- Earth coil standard
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF21)

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



Tested and found to be  
IAW VDE 0565 Part 3.



### Circuit Diagram



## Specifications

| Model           | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance        |                   | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|---------------|---------------------------|----------------|----------------|-------------------|-------------------|----------------------------|
|                 |                              |               |                           | C <sub>Y</sub> | C <sub>X</sub> | (L <sub>1</sub> ) | (L <sub>2</sub> ) |                            |
| 60-BHS-010-3-11 | 250VAC                       | 1A            | 0.35mA                    | 2200pF ± 20%   | 0.1uF ± 20%    | 6mH               | 18.3uH            | 30°C                       |
| 60-BHS-010-3-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-010-5-11 |                              |               | 0.50mA                    | 3300pF ± 20%   | 0.1uF ± 20%    |                   |                   |                            |
| 60-BHS-010-5-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-020-3-11 | 250VAC                       | 2A            | 0.35mA                    | 2200pF ± 20%   | 0.1uF ± 20%    | 2.4mH             | 18.3uH            | 30°C                       |
| 60-BHS-020-3-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-020-5-11 |                              |               | 0.50mA                    | 3300pF ± 20%   | 0.1uF ± 20%    |                   |                   |                            |
| 60-BHS-020-5-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-030-3-11 | 250VAC                       | 3A            | 0.35mA                    | 2200pF ± 20%   | 0.1uF ± 20%    | 1.2mH             | 18.3uH            | 30°C                       |
| 60-BHS-030-3-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-030-5-11 |                              |               | 0.50mA                    | 3300pF ± 20%   | 0.1uF ± 20%    |                   |                   |                            |
| 60-BHS-030-5-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-060-3-11 | 250VAC                       | 6A            | 0.35mA                    | 2200pF ± 20%   | 0.1uF ± 20%    | .53mH             | 18.3uH            | 45°C                       |
| 60-BHS-060-3-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |
| 60-BHS-060-5-11 |                              |               | 0.50mA                    | 3300pF ± 20%   | 0.1uF ± 20%    |                   |                   |                            |
| 60-BHS-060-5-4  |                              |               |                           |                | .047uF ± 20%   |                   |                   |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

# Power Entry Modules High Frequency Attenuation

## 60-BHS Series

### Temperature Characteristics



### Common Mode



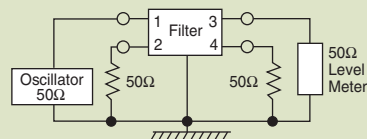
#### 60-BHS-XXX-X-11



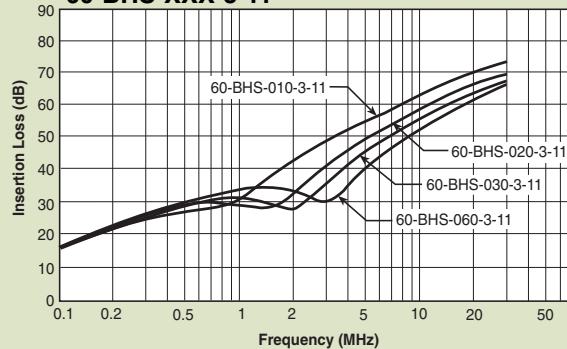
#### 60-BHS-XXX-X-4



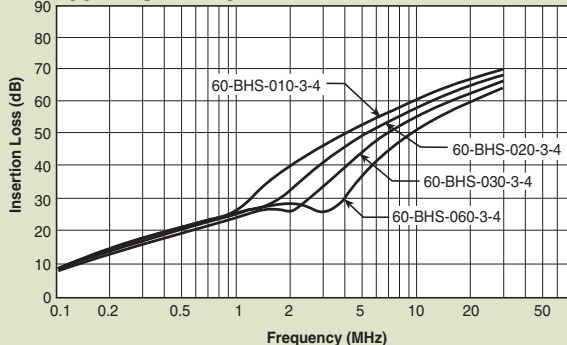
### Normal Mode



#### 60-BHS-XXX-3-11



#### 60-BHS-XXX-3-4



# Power Entry Modules Bolt-in Rear Terminals For General Purpose Applications

## 10-BPF Series



### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Operating temperature: -25°C to +70°C
- Compact configuration

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



### Circuit Diagram



### Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance     |                 | Inductance<br>(L <sub>1</sub> ) | Circuit Diagram | Figure | Temperature Rise<br>(Max.) |
|----------------|------------------------------|---------------|---------------------------|-----------------|-----------------|---------------------------------|-----------------|--------|----------------------------|
| 10-BPF-001-5-A | 120/250VAC                   | 1A            | 0.50mA                    | 3300pF          | 2200pF          | 3.0mH                           | 1               | A      | 30°C                       |
| 10-BPF-001-5-C |                              |               |                           |                 |                 |                                 |                 | C      |                            |
| 10-BPF-003-5-A |                              | 3A            |                           | 4700pF          | 0.01uF          | 1.5mH                           | 2               | A      |                            |
| 10-BPF-003-5-C |                              |               |                           |                 |                 |                                 |                 | C      |                            |
| 10-BPF-003-5-D |                              | 6A            |                           | 3300pF          | 3300pF & 0.01uF | 0.5mH                           | 1               | A      |                            |
| 10-BPF-006-5-A |                              |               |                           |                 |                 |                                 |                 | C      |                            |
| 10-BPF-006-5-C |                              | 10A           |                           | 3300pF & 0.01uF | 3300pF & 0.01uF | 1.5mH                           | 2               | B      |                            |
| 10-BPF-006-5-D |                              |               |                           | 3300pF          | 0.01uF          | 0.5mH                           | 1               | A      |                            |
| 10-BPF-010-5-A |                              |               |                           | 3300pF & 0.01uF | 3300pF & 0.01uF | 1.5mH                           | 3               | B      |                            |
| 10-BPF-010-5-D |                              |               |                           |                 |                 |                                 |                 |        |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 45g  
Input: Compatible with IEC-320

# Power Entry Modules Bolt-in Rear Terminals For General Purpose Applications

## 10-BPF Series

**Figure A**



**Figure B**



**Figure C**



Dimensions in inches (mm)

### Common Mode



#### 10-BPF-001;-003



#### 10-BPF-006;-010



### Normal Mode



#### 10-BPF-001;-003



#### 10-BPF-006;-010



# Power Entry Modules Bolt-in Rear Terminals For Medical Purpose Applications

## 10-BPF Series



### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Operating temperature: -25°C to +70°C
- Compact configuration
- Low leakage current

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



### Circuit Diagram



## Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance<br>$C_x$ | Inductance<br>( $L_1$ ) | Circuit Diagram | Figure | Temperature Rise<br>(Max.) |
|----------------|------------------------------|---------------|---------------------------|----------------------|-------------------------|-----------------|--------|----------------------------|
| 10-BPF-001-2-A | 120/250VAC                   | 1A            | 5uA                       | 0.01uF               | 3.0mH                   | 1               | A      | 30°C                       |
| 10-BPF-003-2-A |                              | 3A            |                           |                      | 1.5mH                   |                 |        |                            |
| 10-BPF-006-2-A |                              | 6A            |                           |                      | 0.5mH                   |                 |        |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
 Insulation resistance: 300 Mohm min. at 500VDC  
 Voltage drop: 1V max. at rated current  
 Weight: 45g  
 Input: Compatible with IEC-320

# Power Entry Modules Bolt-in Rear Terminals For Medical Purpose Applications

## 10-BPF Series



Dimensions in inches (mm)



### Common Mode



#### 10-BPF-001;-003;-006



### Normal Mode



#### 10-BPF-001;-003;-006



# Power Entry Modules Snap-in with Wire Leads

## 60-SPL Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal cased miniature filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Snap-in style saves labor and hardware inventory
- Wire output minimizes space and provides economical installation
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF27)

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



Tested and found to be  
IAW VDE 0565 Part 3.



### Circuit Diagram



### Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|----------------|------------------------------|------------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                |                              |                  |                           | C <sub>y</sub> | C <sub>x</sub> |                                 |                            |
| 60-SPL-010-3-2 | 250VAC                       | 1A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 6.0mH                           | 30°C                       |
| 60-SPL-010-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-SPL-010-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-SPL-010-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-SPL-020-3-2 | 250VAC                       | 2A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 2.4mH                           | 30°C                       |
| 60-SPL-020-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-SPL-020-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-SPL-020-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-SPL-030-3-2 | 250VAC                       | 3A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 1.2mH                           | 30°C                       |
| 60-SPL-030-3-3 |                              |                  |                           |                | 3300pF ± 20%   |                                 |                            |
| 60-SPL-030-5-2 |                              |                  | 0.50mA                    | 2200pF ± 20%   | .033uF ± 20%   |                                 |                            |
| 60-SPL-030-5-3 |                              |                  |                           |                | 3300pF ± 20%   |                                 |                            |
| 60-SPL-060-3-2 | 250VAC                       | 6A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 0.53mH                          | 45°C                       |
| 60-SPL-060-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-SPL-060-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-SPL-060-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

# Power Entry Modules Snap-in with Wire Leads

## 60-SPL Series

### Temperature Characteristics

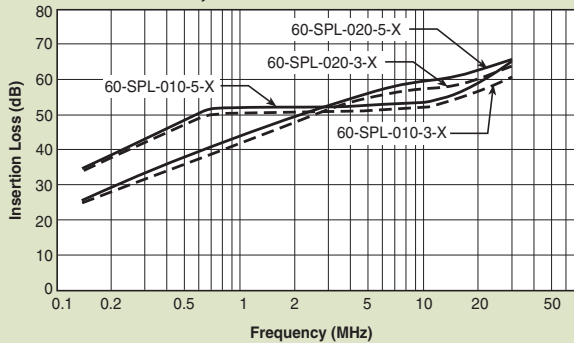


Dimensions in inches (mm)

### Common Mode



#### 60-SPL-010;-020



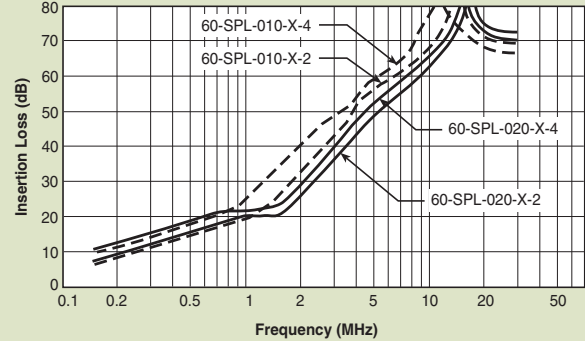
#### 60-SPL-030;-060



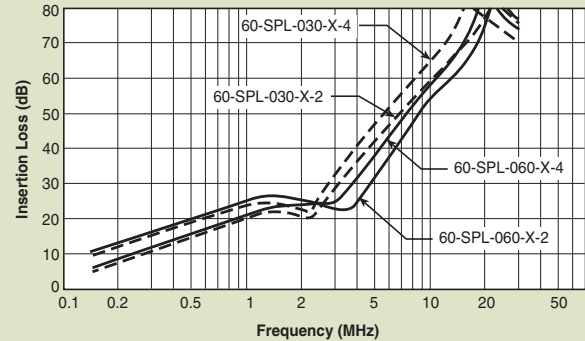
### Normal Mode



#### 60-SPL-010;-020



#### 60-SPL-030;-060



# Power Entry Modules Bolt-in with Wire Leads

## 60-BPL Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Wire output for minimizing space use and economical installation
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF28)

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



Tested and found to be  
IAW VDE 0565 Part 3.



### Circuit Diagram



### Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|----------------|------------------------------|------------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                |                              |                  |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 60-BPL-010-3-2 | 250VAC                       | 1A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 6.0mH                           | 30°C                       |
| 60-BPL-010-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-BPL-010-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-BPL-010-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-BPL-020-3-2 | 250VAC                       | 2A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 2.4mH                           | 30°C                       |
| 60-BPL-020-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-BPL-020-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-BPL-020-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-BPL-030-3-2 | 250VAC                       | 3A               | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 1.2mH                           | 30°C                       |
| 60-BPL-030-3-3 |                              |                  |                           | 3300pF ± 20%   |                |                                 |                            |
| 60-BPL-030-5-2 |                              |                  | 0.50mA                    | 2200pF ± 20%   | .033uF ± 20%   |                                 |                            |
| 60-BPL-030-5-3 |                              |                  |                           | 3300pF ± 20%   |                |                                 |                            |
| 60-BPL-060-3-2 | 250VAC                       | 6A               | 0.35mA                    | 2200pF ± 20%   | 22nF ± 20%     | 0.53mH                          | 45°C                       |
| 60-BPL-060-3-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |
| 60-BPL-060-5-2 |                              |                  | 0.50mA                    | 3300pF ± 20%   | 22nF ± 20%     |                                 |                            |
| 60-BPL-060-5-3 |                              |                  |                           |                | 33nF ± 20%     |                                 |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

# Power Entry Modules Bolt-in with Wire Leads

## 60-BPL Series

### Temperature Characteristics



Dimensions in inches (mm)

### Common Mode



#### 60-BPL-010;-020



#### 60-BPL-030;-060



### Normal Mode



#### 60-BPL-010;-020



#### 60-BPL-030;-060



# Power Entry Modules Bolt-in with Wire Leads

## 10-BPL Series



### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Wire output for minimizing space use and economical installation
- Operating temperature: -25°C to +70°C
- Compact configuration

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



### Circuit Diagram



## Specifications

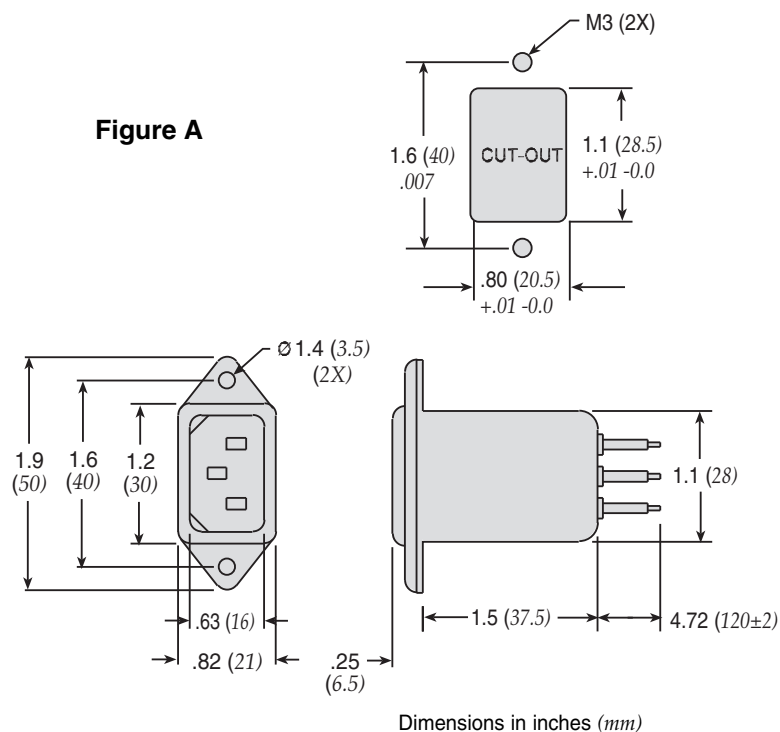
| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Circuit Diagram | Figure | Temperature Rise<br>(Max.) |
|----------------|------------------------------|---------------|---------------------------|----------------|----------------|---------------------------------|-----------------|--------|----------------------------|
|                |                              |               |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                 |        |                            |
| 10-BPL-001-5-B | 250VAC                       | 1A            | 0.50mA                    | 3300pF         | 0.01uF         | 3.0mH                           | 1               | A      | 30°C                       |
| 10-BPL-003-5-B |                              | 3A            |                           |                |                | 1.5mH                           |                 |        |                            |
| 10-BPL-006-5-B |                              | 6A            |                           |                |                | 0.5mH                           |                 |        |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
 Insulation resistance: 300 Mohm min. at 500VDC  
 Voltage drop: 1V max. at rated current  
 Weight: 50g  
 Input: Compatible with IEC-320

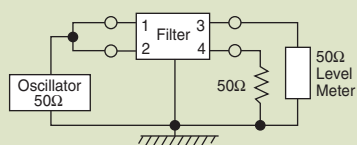
# Power Entry Modules Bolt-in with Wire Leads

## 10-BPL Series

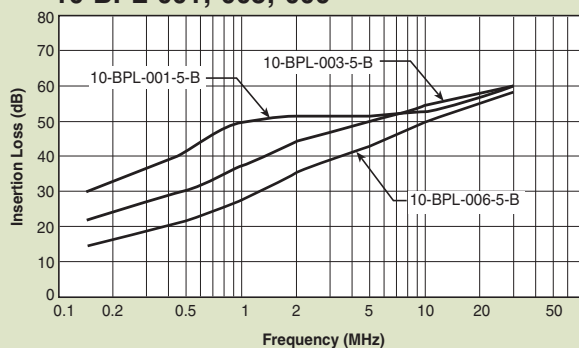
**Figure A**



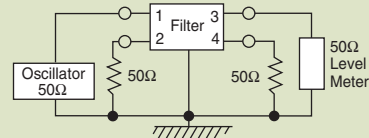
### Common Mode



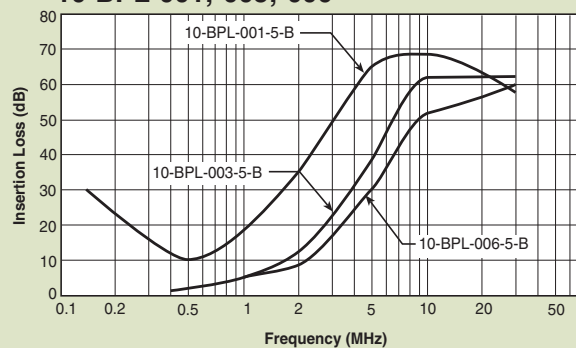
#### 10-BPL-001;-003;-006



### Normal Mode



#### 10-BPL-001;-003;-006



# Power Entry Modules Snap-in Mount

## 60-SPR & SPS Series

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal cased miniature filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards
- Snap-in style saves labor and hardware inventory
- Solder lug and fast-on tab terminations available
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF33)
- UL approved low leakage version also available

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units

### Specifications

| Model*          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|---------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                 |                              |               |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 60-XXX-010-3-2  | 250VAC                       | 1A            | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 6.0mH                           | 30°C                       |
| 60-XXX-010-3-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-010-5-2  |                              |               | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-010-5-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-020-3-2  | 250VAC                       | 2A            | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 2.4mH                           | 30°C                       |
| 60-XXX-020-3-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-020-5-2  |                              |               | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-020-5-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-030-3-2  | 250VAC                       | 3A            | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 1.2mH                           | 30°C                       |
| 60-XXX-030-3-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-030-5-2  |                              |               | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-030-5-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-060-3-2  | 250VAC                       | 6A            | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 0.53mH                          | 45°C                       |
| 60-XXX-060-3-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-060-5-2  |                              |               | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-XXX-060-5-4  |                              |               |                           |                | .047uF ± 20%   |                                 |                            |
| 60-XXX-100-3-2  | 250VAC                       | 10A           | 0.35mA                    | 2200pF ± 20%   | .022uF ± 20%   | 0.26mH                          | 45°C                       |
| 60-XXX-100-5-2  |                              |               | 0.50mA                    | 3300pF ± 20%   | .022uF ± 20%   |                                 |                            |
| 60-SPR-150-3-11 | 250VAC                       | 15A           | 0.35mA                    | 2200pF ± 20%   | .1uF ± 20%     | 0.15mH                          | 45°C                       |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 45g  
Input: Compatible with IEC-320

\* **Substitute SPR or SPS for XXX**  
60-SPR - Fast-on terminals  
60-SPS - Solder lug terminals



### Circuit Diagram



# Power Entry Modules Snap-in Mount

## 60-SPR & SPS Series

### Temperature Characteristics



### Common Mode



#### 60-SPX-010;-020;-030



#### 60-SPX-060;-100



### Normal Mode



#### 60-SPX-010;-020;-030



#### 60-SPX-060;-100



# Fused Filtered Power Entry Modules For General Purpose Applications

## 64-65-BFF/64-65-BFS Series



Tested and found to be  
IAW VDE 0565 Part 3.

### Features

- North American and Metric fuse holders available
- Fuse holder provides effective EMI suppression of common and differential mode
- Suitable for products that must conform to FCC and FTZ requirements
- Meets over voltage category II of IEC 664 and complies with IEC 950
- Fast-on terminals or solder lug terminals
- Metal case provides effective EMI shielding
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF35)

### Applications

- Computers and peripheral equipment
- Electronic equipment
- Digital equipment
- Measuring and testing instruments
- Telecommunications equipment



### Circuit Diagram



### Specifications

| Model*          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|------------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                 |                              |                  |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 64-XXX-020-3-11 | 250VAC                       | 2A               | 0.35mA                    | 2200pF ± 20%   | 0.1uF          | 6.5mH                           | 40°C                       |
| 64-XXX-020-5-11 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 64-XXX-020-3-12 |                              |                  | 0.35mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 64-XXX-020-5-12 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 64-XXX-040-3-11 | 250VAC                       | 4A               | 0.35mA                    | 2200pF ± 20%   | 0.1uF          | 4.2mH                           | 45°C                       |
| 64-XXX-040-5-11 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 64-XXX-040-3-12 |                              |                  | 0.35mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 64-XXX-040-5-12 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 64-XXX-060-3-11 | 250VAC                       | 6A               | 0.35mA                    | 2200pF ± 20%   | 0.1uF          | 1.6mH                           | 45°C                       |
| 64-XXX-060-5-11 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 64-XXX-060-3-12 |                              |                  | 0.35mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 64-XXX-060-5-12 |                              |                  | 0.50mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-020-3-11 | 125VAC                       | 2A               | 0.20mA                    | 2200pF ± 20%   | 0.1uF          | 6.5mH                           | 40°C                       |
| 65-XXX-020-5-11 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-020-3-12 |                              |                  | 0.20mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 65-XXX-020-5-12 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-040-3-11 | 125VAC                       | 4A               | 0.20mA                    | 2200pF ± 20%   | 0.1uF          | 4.2mH                           | 45°C                       |
| 65-XXX-040-5-11 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-040-3-12 |                              |                  | 0.20mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 65-XXX-040-5-12 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-060-3-11 | 125VAC                       | 6A               | 0.20mA                    | 2200pF ± 20%   | 0.1uF          | 1.6mH                           | 45°C                       |
| 65-XXX-060-5-11 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |
| 65-XXX-060-3-12 |                              |                  | 0.20mA                    | 2200pF ± 20%   | 0.22uF         |                                 |                            |
| 65-XXX-060-5-12 |                              |                  | 0.25mA                    | 3300pF ± 20%   |                |                                 |                            |

Note: Test Voltage 1500VAC one minute, line to ground  
Insulation Resistance: 300 MΩ min. at 500VDC  
F(S) = Fast-on or (Solder lug terminals)

Voltage Drop: 1V max. at rated current  
Weight: 78g  
Inlet: Compatible with IEC-320

\* **Substitute BFF or BFS for XXX**  
BFF - Fast-on terminals  
BFS - Solder lug terminals

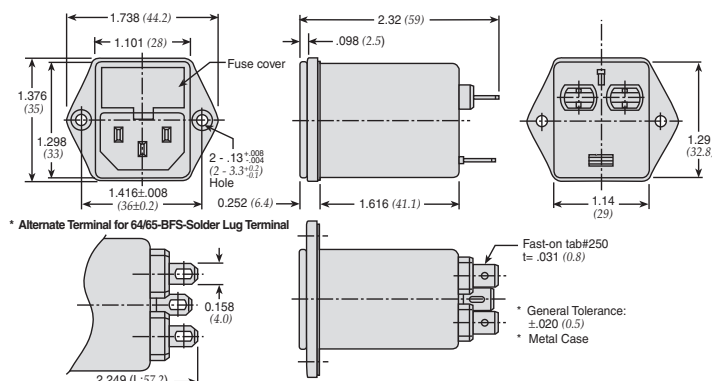
# Fused Filtered Power Entry Modules For General Purpose Applications

## 64-65-BFF/64-65-BFS Series

### Temperature Characteristics



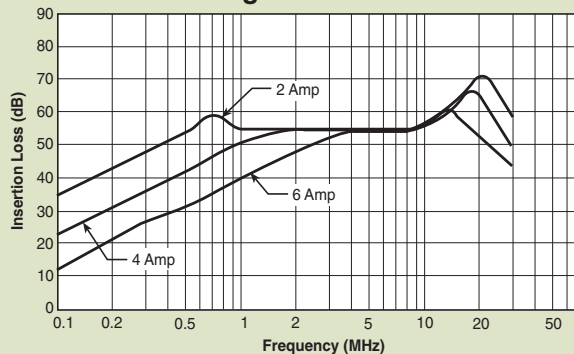
### Dimensions 64/65-BFF Series



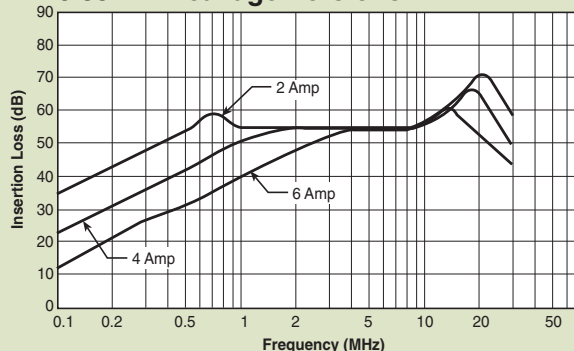
### Common Mode



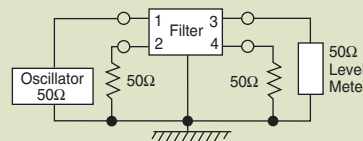
#### 0.50 mA Leakage Versions



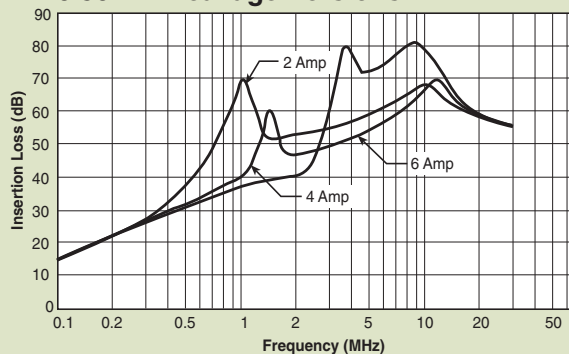
#### 0.35 mA Leakage Versions



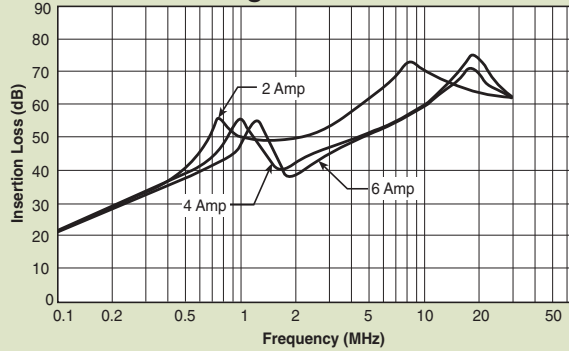
### Normal Mode



#### 0.50 mA Leakage Versions



#### 0.35 mA Leakage Versions



# Fused Filtered Power Entry Modules

For Medical or General Purpose Applications

## 66-67-BFF/66-67-BFS Series



Tested and found to be  
IAW VDE 0565 Part 3.

### Features

- Metric and North American fuse holders available
- Fuse holder provides effective EMI suppression of common and differential mode
- Suitable for products that must conform to FCC and FTZ requirements
- Meets over voltage category II of IEC 664 and complies with IEC 950
- Fast-on terminations or solder lug terminations
- Metal case provides effective EMI shielding
- Provides susceptibility protection without the leakage current associated with line-to-ground capacitance
- Reduces the line to ground capacitance in order to meet patient care requirements
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF37)



### Applications

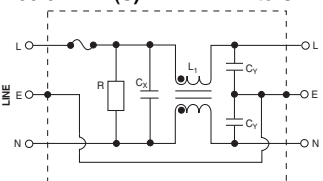
- Medical equipment
- Electronic equipment
- Digital equipment
- Industrial equipment
- Telecommunications equipment
- Measuring and testing instruments
- Personal computers and peripherals

### Circuit Diagrams

66/67-BFF(S)-XXX-1-X Filter



66/67-BFF(S)-XXX-0-X and  
66/67-BFF(S)-XXX-4-X Filters



### Specifications

| Model*          | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance |             | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|------------------|---------------------------|-------------|-------------|---------------------------------|----------------------------|
| 66-XXX-020-1-11 | 250VAC                       | 2A               | 0.01mA                    | none        | 0.1uF       | 6.5mH                           | 40°C                       |
| 66-XXX-020-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 66-XXX-020-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-020-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 66-XXX-020-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-020-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 66-XXX-040-1-11 | 250VAC                       | 4A               | 0.01mA                    | none        | 0.1uF       | 2.4mH                           | 45°C                       |
| 66-XXX-040-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 66-XXX-040-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-040-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 66-XXX-040-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-040-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 66-XXX-060-1-11 | 250VAC                       | 6A               | 0.01mA                    | none        | 0.1uF       | 1.6mH                           | 45°C                       |
| 66-XXX-060-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 66-XXX-060-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-060-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 66-XXX-060-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 66-XXX-060-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-020-1-11 | 125VAC                       | 2A               | 0.005mA                   | none        | 0.1uF       | 6.5mH                           | 40°C                       |
| 67-XXX-020-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 67-XXX-020-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-020-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-020-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-020-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-040-1-11 | 125VAC                       | 4A               | 0.005mA                   | none        | 0.1uF       | 2.4mH                           | 45°C                       |
| 67-XXX-040-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 67-XXX-040-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-040-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-040-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-040-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-060-1-11 | 125VAC                       | 6A               | 0.005mA                   | none        | 0.1uF       | 1.6mH                           | 45°C                       |
| 67-XXX-060-1-12 |                              |                  |                           |             | 0.22uF      |                                 |                            |
| 67-XXX-060-0-11 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-060-4-11 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |
| 67-XXX-060-0-12 |                              |                  |                           |             | 330pF ± 20% |                                 |                            |
| 67-XXX-060-4-12 |                              |                  |                           |             | 470pF ± 20% |                                 |                            |

Note: Test Voltage 1500VAC one minute, line to ground  
Insulation Resistance: 300 MΩ min. at 500VDC  
F(S) = Fast-on or (Solder lug terminals)

Voltage Drop: 1V max. at rated current  
Weight: 78g  
Inlet: Compatible with IEC-320

\* **Substitute BFF or BFS for XXX**  
BFF - Fast-on terminals  
BFS - Solder lug terminals

# Fused Filtered Power Entry Modules

For Medical or General Purpose Applications

## 66-67-BFF/66-67-BFS Series

### Temperature Characteristics



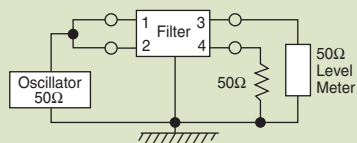
### Dimensions

#### 66-67-BFF/66-67-BFS Series



Dimensions in inches (mm)

### Common Mode



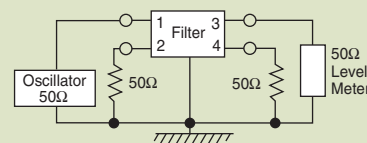
#### 0.01 mA Leakage Current



#### 0.075 and 0.1 mA Leakage Current



### Normal Mode



#### 0.01 mA Leakage Current



#### 0.075 and 0.1 mA Leakage Current



# Switched and Fused Filtered Power Entry Modules For General Purpose Applications

## 64-65-BSF/64-65-SSF Series



Tested and found to be  
IAW VDE 0565 Part 3.

### Features

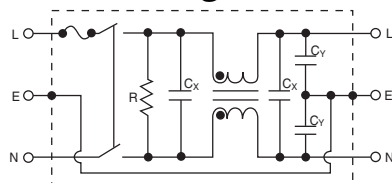
- North American and Metric fuse holders available
- Fuse holder and double pole power ON/OFF switch provided in a convenient/compact package
- Suitable for products that must conform to FCC and FTZ requirements
- Meets over voltage category II of IEC 664 and complies with IEC 950
- Metal case provides effective EMI shielding
- Easy access fuse drawer with space for spare fuse
- Flange-mounted or snap-in styles available for quick mounting
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF39)



### Applications

- Computers and peripheral equipment
- Digital equipment
- Electronic equipment
- Measuring and testing instruments
- Telecommunications equipment

### Circuit Diagram



### Specifications

| Model*          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance    |                 |                 | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|---------------|---------------------------|----------------|-----------------|-----------------|---------------------------------|----------------------------|
|                 |                              |               |                           | C <sub>Y</sub> | C <sub>X1</sub> | C <sub>X2</sub> |                                 |                            |
| 64-XXX-020-3-12 | 250VAC                       | 2A            | 0.35mA                    | 2200pF         | 0.22uF          | NONE            | 10.5mH                          | 45°C                       |
| 64-XXX-020-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-020-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-020-3-06 |                              |               | 0.50mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-020-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-020-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-040-3-12 | 250VAC                       | 4A            | 0.35mA                    | 2200pF         | 0.22uF          | NONE            | 4.2mH                           | 45°C                       |
| 64-XXX-040-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-040-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-040-3-06 |                              |               | 0.50mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-040-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-040-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-060-3-12 | 250VAC                       | 6A            | 0.35mA                    | 2200pF         | 0.22uF          | NONE            | 1.6mH                           | 45°C                       |
| 64-XXX-060-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-060-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-060-3-06 |                              |               | 0.50mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 64-XXX-060-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 64-XXX-060-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-020-3-12 | 125VAC                       | 2A            | 0.20mA                    | 2200pF         | 0.22uF          | NONE            | 10.5mH                          | 45°C                       |
| 65-XXX-020-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-020-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-020-3-06 |                              |               | 0.25mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-020-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-020-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-040-3-12 | 125VAC                       | 4A            | 0.20mA                    | 2200pF         | 0.22uF          | NONE            | 4.2mH                           | 45°C                       |
| 65-XXX-040-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-040-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-040-3-06 |                              |               | 0.25mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-040-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-040-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-060-3-12 | 125VAC                       | 6A            | 0.20mA                    | 2200pF         | 0.22uF          | NONE            | 1.6mH                           | 45°C                       |
| 65-XXX-060-3-04 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-060-3-14 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-060-3-06 |                              |               | 0.25mA                    | 3300pF         | 0.22uF          | NONE            |                                 |                            |
| 65-XXX-060-5-12 |                              |               |                           |                | 0.47uF          | NONE            |                                 |                            |
| 65-XXX-060-5-04 |                              |               |                           |                | 0.22uF          | NONE            |                                 |                            |

Note: Test Voltage 1500VAC one minute, line to ground  
Insulation Resistance: 300 MΩ min. at 500VDC  
B(S) = Bolt-in terminals or (Snap-in terminals)

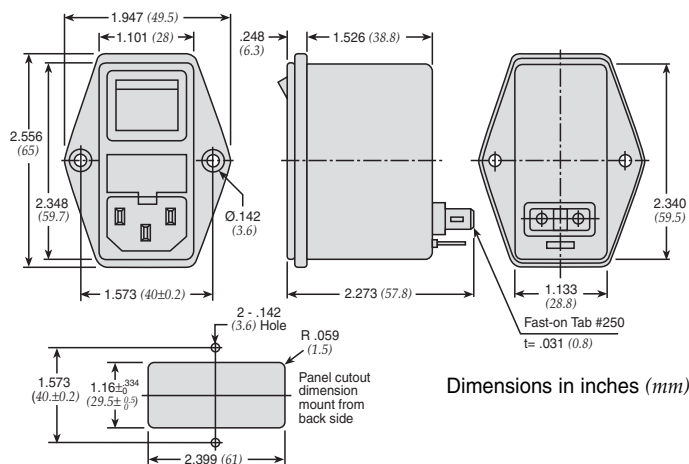
Voltage Drop: 1V max. at rated current  
Weight: 130g  
Inlet: Compatible with IEC-320

\* **Substitute BSF or SSF for XXX**  
BSF - Bolt-in switched and fused  
SSF - Snap-in switched and fused

The graph shows the relationship between Ambient Temperature (°C) on the x-axis and Current (%) on the y-axis. The x-axis ranges from 20 to 90, and the y-axis ranges from 0 to 120. Two curves are plotted: a solid line for the 1000 Series and a dashed line for the 1000 Series. Both curves show a sharp drop in current as temperature increases above 40°C.

| Ambient Temperature (°C) | Current (%) - 1000 Series (Solid) | Current (%) - 1000 Series (Dashed) |
|--------------------------|-----------------------------------|------------------------------------|
| 20                       | 100                               | 100                                |
| 30                       | 100                               | 100                                |
| 40                       | 100                               | 100                                |
| 50                       | 100                               | 100                                |
| 60                       | 90                                | 90                                 |
| 70                       | 60                                | 60                                 |
| 80                       | 20                                | 20                                 |
| 90                       | 0                                 | 0                                  |

## 64/65-BSF Series



Technical drawings of the R-079 panel cutout showing front, side, and rear views with dimensions in inches and millimeters.

**Front View Dimensions:**

- Top width: 1.313 (33.4)
- Top width (inner): 1.101 (28)
- Left height: 2.556 (65)
- Bottom height: 2.348 (59.7)

**Side View Dimensions:**

- Top width: 1.154 (38.8)
- Left height: 2.48 (6.3)
- Fast-on tab #250, t = .031 (0.8)
- Bottom width: 2.273 (57.8)

**Rear View Dimensions:**

- Top width: 1.133 (28.8)
- Right height: 2.340 (59.5)

**Panel Cutout Dimensions:**

- Left height: R.079 (2.0)
- Bottom width: 1.16<sup>±.02</sup> (29.5<sup>±.5</sup>)
- Panel cutout dimension mount from back side

| Thickness of Panel | A                |
|--------------------|------------------|
| .031 (0.8)         | 2.430 (61.8±0.1) |
| .039 (1.0)         | 2.446 (62.2±0.1) |
| .047 (1.2)         | 2.462 (62.6±0.1) |
| .059 (1.5)         | 2.470 (62.8±0.1) |
| .071 (1.8)         | 2.473 (62.9±0.1) |
| .079 (2.0)         | 2.477 (63.0±0.1) |

\* General Tolerance ± .039 (1.0)  
\* Metal Case

The graph plots Insertion Loss (dB) on the y-axis (0 to 90) against Frequency (MHz) on the x-axis (0.1 to 50). Three curves are shown for different current levels: 2 Amp, 4 Amp, and 6 Amp. The 2 Amp curve starts at ~40 dB at 0.1 MHz, peaks at ~62 dB around 0.5 MHz, and then rises to a sharp peak of ~78 dB at ~15 MHz. The 4 Amp curve starts at ~30 dB at 0.1 MHz, peaks at ~52 dB around 1 MHz, and rises to a sharp peak of ~70 dB at ~15 MHz. The 6 Amp curve starts at ~22 dB at 0.1 MHz, peaks at ~42 dB around 1 MHz, and rises to a sharp peak of ~65 dB at ~15 MHz. All curves converge to ~50 dB at 10 MHz and then decrease after their respective peaks.

| Frequency (MHz) | 2 Amp (dB) | 4 Amp (dB) | 6 Amp (dB) |
|-----------------|------------|------------|------------|
| 0.1             | 40         | 30         | 22         |
| 0.5             | 62         | 45         | 38         |
| 1               | 50         | 52         | 42         |
| 10              | 52         | 55         | 58         |
| 15              | 78         | 70         | 65         |
| 20              | 55         | 50         | 48         |

The graph shows the insertion loss of a 100-ohm resistor as a function of frequency and current. The x-axis is Frequency (MHz) on a logarithmic scale from 0.1 to 50. The y-axis is Insertion Loss (dB) on a linear scale from 0 to 90. Three curves are plotted: 2 Amp (solid line), 4 Amp (dashed line), and 6 Amp (dotted line). All curves show a peak in insertion loss around 0.5 MHz, which decreases as current increases. At higher frequencies, the curves converge and show a sharp increase in insertion loss starting around 10 MHz, peaking near 20 MHz.

| Frequency (MHz) | 2 Amp (dB) | 4 Amp (dB) | 6 Amp (dB) |
|-----------------|------------|------------|------------|
| 0.1             | 38         | 32         | 22         |
| 0.2             | 45         | 38         | 28         |
| 0.5             | 62         | 48         | 38         |
| 1.0             | 50         | 45         | 42         |
| 2.0             | 50         | 45         | 42         |
| 5.0             | 50         | 45         | 42         |
| 10.0            | 50         | 45         | 42         |
| 20.0            | 78         | 70         | 62         |
| 50.0            | 55         | 50         | 45         |

The graph plots Insertion Loss (dB) on the y-axis (0 to 100) against Frequency (MHz) on the x-axis (0.1 to 50). Three curves are shown for different current levels: 2 Amp, 4 Amp, and 6 Amp. The 2 Amp curve starts at ~40 dB at 0.1 MHz, peaks at ~100 dB at 1.5 MHz, and ends at ~65 dB at 30 MHz. The 4 Amp curve starts at ~30 dB at 0.1 MHz, peaks at ~90 dB at 1.5 MHz, and ends at ~60 dB at 30 MHz. The 6 Amp curve starts at ~20 dB at 0.1 MHz, peaks at ~80 dB at 1.5 MHz, and ends at ~60 dB at 30 MHz. All curves show a general downward trend at higher frequencies, with some local maxima and minima.

Figure 10 is a line graph showing Insertion Loss (dB) on the y-axis (0 to 100) versus Frequency (MHz) on the x-axis (0.1 to 50). Three curves are plotted for different power levels: 2 Amp, 4 Amp, and 6 Amp. The curves show that insertion loss increases with frequency and power, peaking around 5-10 MHz.

| Frequency (MHz) | 2 Amp (dB) | 4 Amp (dB) | 6 Amp (dB) |
|-----------------|------------|------------|------------|
| 0.1             | 10         | 10         | 10         |
| 0.2             | 25         | 25         | 25         |
| 0.5             | 35         | 35         | 35         |
| 1               | 40         | 40         | 40         |
| 2               | 50         | 55         | 60         |
| 5               | 60         | 65         | 70         |
| 10              | 65         | 70         | 70         |
| 20              | 60         | 60         | 60         |
| 50              | 60         | 60         | 60         |

# Switched and Fused Filtered Power Entry Modules

For Medical or General Purpose Applications

## 66-67-BSF/66-67-SSF Series



Tested and found to be  
IAW VDE 0565 Part 3

### Features

- Metric and North American fuse holders available
- Fuse holder and a double pole power ON/OFF switch provides a convenient/compact package
- Suitable for products that must conform to FCC and FTZ requirements
- Meets over voltage category II of IEC 664 and complies with IEC 950
- Provides susceptibility protection without the leakage current associated with line-to-ground capacitors
- Designed to meet requirements for non-patient and patient care equipment
- Metal case provides effective EMI shielding
- Easy access fuse drawer - space for spare fuse
- Flange-mounted or snap-in styles available for quick mounting
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF41)

### Specifications

| Model*          | Rated Voltage<br>50/60Hz | Rated Current | Leakage Current<br>(Max.) | Capacitance<br>C <sub>Y</sub> C <sub>X1</sub> C <sub>X2</sub> |        |        | Temp. Induct.<br>(L <sub>1</sub> ) | Rise<br>(Max.) |        |      |
|-----------------|--------------------------|---------------|---------------------------|---------------------------------------------------------------|--------|--------|------------------------------------|----------------|--------|------|
| 66-XXX-020-0-12 | 250<br>VAC               | 2A            | .075mA                    | 330pF                                                         | 0.22uF | NONE   | 10.5mH                             | 40°C           |        |      |
| 66-XXX-020-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-020-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-020-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-020-1-12 |                          |               | .01mA                     | NONE                                                          | 0.22uF | NONE   |                                    |                | 10.5mH | 40°C |
| 66-XXX-020-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-020-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-020-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-020-4-12 |                          |               | 0.1mA                     | 470pF                                                         | 0.22uF | NONE   |                                    |                |        |      |
| 66-XXX-020-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-020-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-020-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-0-12 |                          | 4A            | .075mA                    | 330pF                                                         | 0.22uF | NONE   | 4.2mH                              | 45°C           |        |      |
| 66-XXX-040-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-040-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-1-12 |                          |               | .01mA                     | NONE                                                          | 0.22uF | NONE   |                                    |                | 4.2mH  | 45°C |
| 66-XXX-040-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-040-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-4-12 |                          |               | .01mA                     | 470pF                                                         | 0.22uF | NONE   |                                    |                |        |      |
| 66-XXX-040-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-040-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-040-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-0-12 |                          | 6A            | .075mA                    | 330pF                                                         | 0.22uF | NONE   | 1.6mH                              | 45°C           |        |      |
| 66-XXX-060-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-060-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-1-12 |                          |               | .01mA                     | NONE                                                          | 0.22uF | NONE   |                                    |                | 1.6mH  | 45°C |
| 66-XXX-060-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-060-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-4-12 |                          |               | 0.1mA                     | 470pF                                                         | 0.22uF | NONE   |                                    |                |        |      |
| 66-XXX-060-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |
| 66-XXX-060-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |        |      |
| 66-XXX-060-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |        |      |

Note: Test Voltage: 1500VAC one minute, line to ground  
Insulation Resistance: 300 MΩ min. at 500VDC  
Voltage Drop: 1V max. at rated current

Weight: 130g  
Inlet: Compatible with IEC-320  
B(S) = Bolt-in terminals or (Snap-in terminals)

\* Substitute BSF or SSF for XXX  
BSF - Bolt-In Switched and Fused  
SSF - Snap-In Switched and Fused



### Applications

- Medical equipment
- Industrial equipment
- Telecommunications equipment
- Measuring and testing instruments
- Digital equipment (including switching power supplies)
- General purpose filter for susceptibility or high frequency "clean up" applications

### Circuit Diagram

Note: C<sub>V1</sub> and C<sub>V2</sub> capacitors  
omitted on 66/67  
B(S)F-XXX-1-X Filters



| Model*          | Rated Voltage<br>50/60Hz | Rated Current | Leakage Current<br>(Max.) | Capacitance<br>C <sub>Y</sub> C <sub>X1</sub> C <sub>X2</sub> |        |        | Temp. Induct.<br>(L <sub>1</sub> ) | Rise<br>(Max.) |
|-----------------|--------------------------|---------------|---------------------------|---------------------------------------------------------------|--------|--------|------------------------------------|----------------|
| 67-XXX-020-0-12 | 125 VAC                  | 2A            | 0.04mA                    | 330pF                                                         | 0.22uF | NONE   | 10.5mH                             | 40°C           |
| 67-XXX-020-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-020-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-020-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-020-1-12 |                          |               | .005mA                    | NONE                                                          | 0.22uF | NONE   |                                    |                |
| 67-XXX-020-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-020-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-020-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-020-4-12 |                          |               | 0.05mA                    | 470pF                                                         | 0.22uF | NONE   |                                    |                |
| 67-XXX-020-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-020-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-020-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-0-12 |                          | 4A            | 0.04mA                    | 330pF                                                         | 0.22uF | NONE   | 4.2mH                              | 45°C           |
| 67-XXX-040-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-040-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-1-12 |                          |               | .005mA                    | NONE                                                          | 0.22uF | NONE   |                                    |                |
| 67-XXX-040-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-040-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-4-12 |                          |               | 0.05mA                    | 470pF                                                         | 0.22uF | NONE   |                                    |                |
| 67-XXX-040-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-040-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-040-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-0-12 |                          | 6A            | 0.04mA                    | 330pF                                                         | 0.22uF | NONE   | 1.6mH                              |                |
| 67-XXX-060-0-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-0-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-060-0-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-1-12 |                          |               | .005mA                    | NONE                                                          | 0.22uF | NONE   |                                    |                |
| 67-XXX-060-1-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-1-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-060-1-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-4-12 |                          |               | 0.05mA                    | 470pF                                                         | 0.22uF | NONE   |                                    |                |
| 67-XXX-060-4-04 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |
| 67-XXX-060-4-14 |                          |               |                           |                                                               |        | NONE   |                                    |                |
| 67-XXX-060-4-06 |                          |               |                           |                                                               |        | 0.22uF |                                    |                |

The graph shows the relationship between ambient temperature and current for a 100W LED module. The current is constant at 100% for temperatures up to 40°C. Above 40°C, the current decreases linearly, reaching 0% at 90°C.

| Ambient Temperature (°C) | Current (%) |
|--------------------------|-------------|
| 20                       | 100         |
| 30                       | 100         |
| 40                       | 100         |
| 50                       | 100         |
| 60                       | 80          |
| 70                       | 60          |
| 80                       | 40          |
| 90                       | 0           |

Technical drawing of the Fast-on Tab #250 showing three views: front, side, and back. The drawing includes the following dimensions:

- Front View:**
  - Top width: 1.947 (49.5)
  - Top inner width: 1.101 (28)
  - Left height: 2.556 (65)
  - Bottom left height: 2.348 (59.7)
  - Bottom width: 1.573 (40±0.2)
  - Right hole diameter: Ø.142 (3.6)
- Side View:**
  - Top width: 1.526 (38.8)
  - Left hole diameter: Ø.248 (6.3)
  - Bottom width: 2.273 (57.8)
- Back View:**
  - Right height: 2.340 (59.5)
  - Bottom width: 1.133 (28.8)
  - Fast-on Tab #250
  - Tab thickness: t = .031 (0.8)
- Panel Cutout Dimension (Bottom View):**
  - Top width: 1.573 (40±0.2)
  - Top inner width: 1.16<sup>+0.02</sup><sub>-0.05</sub> (29.5<sup>+0.5</sup><sub>-0.5</sub>)
  - Right radius: R.059 (1.5)
  - Bottom width: 2.399 (61)
  - 2 - .142 (3.6) Hole
  - Panel cutout dimension mount from back side

Dimensions in inches (mm)

Dimensions in inches (*mm*)

[illegible]

The graph shows the insertion loss of a 100 ohm resistor as a function of frequency for three different current levels: 2 Amp, 4 Amp, and 6 Amp. The x-axis represents Frequency in MHz on a logarithmic scale from 0.1 to 50. The y-axis represents Insertion Loss in dB on a linear scale from 0 to 90. The 2 Amp curve peaks at approximately 45 dB around 0.5 MHz. The 4 Amp curve peaks at approximately 35 dB around 0.5 MHz. The 6 Amp curve peaks at approximately 30 dB around 0.5 MHz. All curves show a decrease in insertion loss as frequency increases beyond their respective peak frequencies.

| Frequency (MHz) | 2 Amp (dB) | 4 Amp (dB) | 6 Amp (dB) |
|-----------------|------------|------------|------------|
| 0.1             | 35         | 25         | 20         |
| 0.2             | 40         | 30         | 25         |
| 0.5             | 45         | 35         | 30         |
| 1               | 40         | 30         | 25         |
| 2               | 35         | 25         | 20         |
| 5               | 25         | 15         | 10         |
| 10              | 15         | 10         | 5          |
| 20              | 10         | 5          | 0          |
| 50              | 5          | 0          | -5         |

The graph shows the insertion loss of a 100 pF capacitor across a frequency range from 0.1 MHz to 50 MHz. The y-axis represents Insertion Loss in dB, ranging from 0 to 90. The x-axis represents Frequency in MHz on a logarithmic scale. Three curves are plotted for different power levels: 2 Amp, 4 Amp, and 6 Amp. The 2 Amp curve shows the highest loss, peaking at approximately 45 dB around 0.5 MHz. The 4 Amp and 6 Amp curves show lower losses, with the 6 Amp curve being the lowest, peaking at approximately 35 dB around 0.5 MHz. All curves show a slight decrease in loss as frequency increases beyond 1 MHz.

| Frequency (MHz) | 2 Amp (dB) | 4 Amp (dB) | 6 Amp (dB) |
|-----------------|------------|------------|------------|
| 0.1             | 35         | 20         | 18         |
| 0.2             | 40         | 25         | 22         |
| 0.5             | 45         | 30         | 25         |
| 1.0             | 40         | 32         | 28         |
| 2.0             | 35         | 30         | 25         |
| 5.0             | 30         | 28         | 22         |
| 10.0            | 30         | 28         | 22         |
| 20.0            | 32         | 30         | 24         |
| 50.0            | 35         | 32         | 25         |

The graph shows the insertion loss of a 100 pF capacitor as a function of frequency and current. The x-axis represents Frequency in MHz on a logarithmic scale from 0.1 to 50. The y-axis represents Insertion Loss in dB on a linear scale from 0 to 90. Three curves are plotted for different current levels: 2 Amp (top curve), 4 Amp (middle curve), and 6 Amp (bottom curve). All curves show a peak in insertion loss around 5 MHz. The insertion loss increases with both frequency and current.

| Frequency (MHz) | Insertion Loss (dB) at 2 Amp | Insertion Loss (dB) at 4 Amp | Insertion Loss (dB) at 6 Amp |
|-----------------|------------------------------|------------------------------|------------------------------|
| 0.1             | 12                           | 11                           | 10                           |
| 0.2             | 15                           | 14                           | 13                           |
| 0.5             | 22                           | 20                           | 18                           |
| 1               | 30                           | 27                           | 24                           |
| 2               | 42                           | 38                           | 34                           |
| 5               | 48                           | 45                           | 42                           |
| 10              | 45                           | 42                           | 39                           |
| 20              | 35                           | 32                           | 29                           |
| 50              | 20                           | 18                           | 15                           |

Graph of Insertion Loss (dB) vs Frequency (MHz) for a 100 ohm resistor. The graph shows three curves for 2 Amp, 4 Amp, and 6 Amp currents. The 2 Amp curve peaks at 50 dB at 5 MHz. The 4 Amp curve peaks at 45 dB at 10 MHz. The 6 Amp curve peaks at 40 dB at 10 MHz. All curves start at 10 dB at 0.1 MHz and rise to a peak before slightly declining or leveling off.

# Switched and Fused Filtered Power Entry Modules

Dual Fuse for European Applications

## 68-BSF Series

### Features

- Dual fuse for European applications
- Fuse holder and double pole power ON/OFF switch provides a convenient/compact package
- Suitable for products that must conform to FCC and FTZ requirements
- Meets over voltage category II of IEC 664 and complies with IEC 950
- Metal case provides effective EMI shielding
- IEC connector meets the safety standards of most certifying agencies
- Easy access fuse drawer
- Flange-mounted
- UL, CSA, and SEMKO approved
- Designed to be in accordance with VDE 0565, part 3
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF43)

### Applications

- Computers and peripheral equipment
- Electronic equipment
- Digital equipment
- Measuring and testing instruments
- Telecommunications equipment



### Circuit Diagram



## Specifications

| Model           | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | C <sub>Y1</sub> | Capacitance     |                 |                 | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|---------------|---------------------------|-----------------|-----------------|-----------------|-----------------|---------------------------------|----------------------------|
|                 |                              |               |                           |                 | C <sub>Y2</sub> | C <sub>X1</sub> | C <sub>X2</sub> |                                 |                            |
| 68-BSF-020-3-01 | 250VAC                       | 2A            | 0.35mA                    | 2200pF          | 2200pF          | 0.1uF           | 0.1uF           | 10.5mH                          | 45°C                       |
| 68-BSF-020-3-04 |                              |               |                           |                 |                 | 0.22uF          | 0.22uF          |                                 |                            |
| 68-BSF-040-3-01 |                              | 4A            |                           |                 |                 | 0.1uF           | 0.1uF           | 4.2mH                           |                            |
| 68-BSF-040-3-04 |                              |               |                           |                 |                 | 0.22uF          | 0.22uF          |                                 |                            |
| 68-BSF-060-3-01 |                              | 6A            |                           |                 |                 | 0.1uF           | 0.1uF           | 1.6mH                           |                            |
| 68-BSF-060-3-04 |                              |               |                           |                 |                 | 0.22uF          | 0.22uF          |                                 |                            |

Note: Test Voltage 1500VAC one minute, line to ground  
Insulation Resistance: 300 MΩ min. at 500VDC  
Voltage Drop: 1V max. at rated current  
Weight: 130g  
Inlet: Compatible with IEC-320  
B(S) = Bolt-in terminals



# PCB Power Filters Miniature Printed Circuit Board

## 61-MPC Series



Tested and found to be  
IAW VDE 0565 Part 3

### Features

- Miniature general purpose PCB mounted filter
- Requires minimal PCB real estate space
- Low cost
- Designed for two wire cord systems
- For three wire cord systems, Y capacitors can be attached externally
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF45)

### Applications

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



### Circuit Diagram



## Specifications

| Model           | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance     |                 | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|------------------|---------------------------|-----------------|-----------------|---------------------------------|----------------------------|
|                 |                              |                  |                           | C <sub>x1</sub> | C <sub>x2</sub> |                                 |                            |
| 61-MPC-010-1-11 | 250VAC                       | 1A               | 0.1mA                     | 0.1uF           | 0.1uF           | 11mH                            | 40°C                       |
| 61-MPC-016-1-11 |                              | 1.6A             |                           |                 |                 | 6.0mH                           |                            |
| 61-MPC-025-1-11 |                              | 2.5A             |                           |                 |                 | 2.4mH                           |                            |
| 61-MPC-036-1-11 |                              | 3.6A             |                           |                 |                 | 1.2mH                           |                            |

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

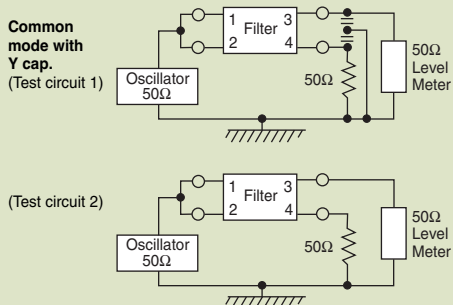
# PCB Power Filters Miniature Printed Circuit Board

## 61-MPC Series

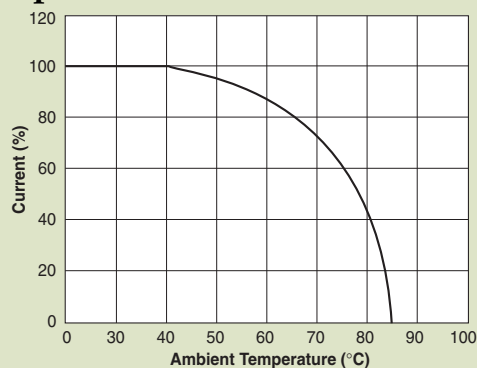


Dimensions in inches (mm)

### Common Mode



### Temperature Characteristics



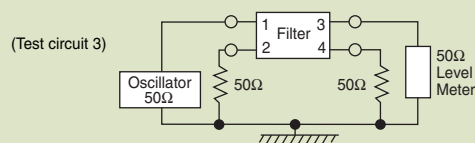
### 61-MPC



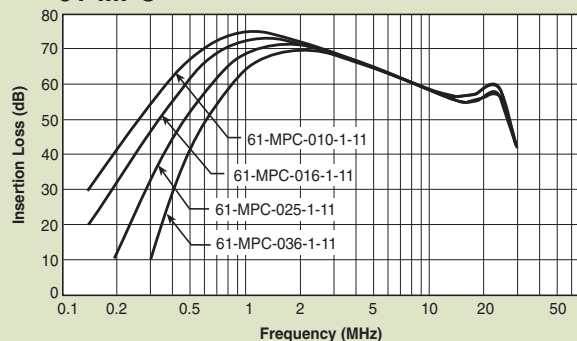
### 61-MPC



### Normal Mode



### 61-MPC



# Power Entry Modules Bolt-in Right Angle Terminals for PCB Applications

## 60-BPP Series



Tested and found to be  
IAW VDE 0565 Part 3

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal case offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Uses IEC connector that meets most safety standards Solder lug, Fast-on tab styles available (see page PF18)
- PCB mounting style minimizes space and provides economical installation
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF47)
- UL approved low leakage version also available

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



### Circuit Diagram



### Specifications

| Model          | Rated Voltage<br>(@ 50/60Hz) | Rated Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance<br>(L <sub>1</sub> ) | Temperature<br>Rise (Max.) |
|----------------|------------------------------|---------------|---------------------------|----------------|----------------|---------------------------------|----------------------------|
|                |                              |               |                           | C <sub>Y</sub> | C <sub>X</sub> |                                 |                            |
| 60-BPP-010-3-2 | 250VAC                       | 1A            | 0.35mA                    | 2200pF         | 0.022uF        | 6.0mH                           | 30°C                       |
| 60-BPP-010-3-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-010-5-2 |                              |               | 0.50mA                    | 3300pF         | 0.022uF        |                                 |                            |
| 60-BPP-010-5-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-020-3-2 |                              | 2A            | 0.35mA                    | 2200pF         | 0.022uF        | 2.4mH                           |                            |
| 60-BPP-020-3-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-020-5-2 |                              |               | 0.50mA                    | 3300pF         | 0.022uF        |                                 |                            |
| 60-BPP-020-5-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-030-3-2 |                              | 3A            | 0.35mA                    | 2200pF         | 0.022uF        | 1.2mH                           |                            |
| 60-BPP-030-3-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-030-5-2 |                              |               | 0.50mA                    | 3300pF         | 0.022uF        |                                 |                            |
| 60-BPP-030-5-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-060-3-2 |                              | 6A            | 0.35mA                    | 2200pF         | 0.022uF        | 0.53mH                          | 45°C                       |
| 60-BPP-060-3-4 |                              |               |                           |                | 0.047uF        |                                 |                            |
| 60-BPP-060-5-2 |                              |               | 0.50mA                    | 3300pF         | 0.022uF        |                                 |                            |
| 60-BPP-060-5-4 |                              |               |                           |                | 0.047uF        |                                 |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

# Power Entry Modules Bolt-in Right Angle Terminals

for PCB Applications

## 60-BPP Series

### Temperature Characteristics



### 60-BPP PCB Mounting Type



### Common Mode



#### 60-BPP-010;-020



#### 60-BPP-030;-060



### Normal Mode



#### 60-BPP-010;-020



#### 60-BPP-030;-060



# Power Entry Modules High Frequency Attenuation

Bolt-in for PCB Applications

## 60-BHP Series



Tested and found to be  
IAW VDE 0565 Part 3

### Features

- Ideally suited for products that must conform to FCC part 15 regulations
- Metal cased filter offers high performance
- Meets over voltage of IEC 664 category II and complies with IEC 950
- Solder lug, Fast-on tab styles available (see page PF20)
- PCB mounting minimizes space and provides economical installation
- Excellent filtering characteristics for high frequencies
- Earth coil standard
- Operating temperature: -25°C to +85°C (including temperature rise, see graph on page PF49)

### Applications

- Digital equipment
- Personal computers and peripherals
- Measuring instruments
- Monitor and display units



### Circuit Diagram



### Specifications

| Model           | Rated Voltage<br>(@ 50/60Hz) | Rated<br>Current | Leakage Current<br>(Max.) | Capacitance    |                | Inductance        |                   | Temperature<br>Rise (Max.) |
|-----------------|------------------------------|------------------|---------------------------|----------------|----------------|-------------------|-------------------|----------------------------|
|                 |                              |                  |                           | C <sub>Y</sub> | C <sub>X</sub> | (L <sub>1</sub> ) | (L <sub>2</sub> ) |                            |
| 60-BHP-010-3-11 | 250VAC                       | 1A               | 0.35mA                    | 2200pF±20%     | 0.1uF±20%      | 6mH               | 18.3 uH           | 30°C                       |
| 60-BHP-010-3-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-010-5-11 |                              |                  | 0.50mA                    | 3300pF±20%     | 0.1uF±20%      |                   |                   |                            |
| 60-BHP-010-5-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-020-3-11 |                              | 2A               | 0.35mA                    | 2200pF±20%     | 0.1uF±20%      | 2.4mH             |                   |                            |
| 60-BHP-020-3-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-020-5-11 |                              |                  | 0.50mA                    | 3300pF±20%     | 0.1uF±20%      |                   |                   |                            |
| 60-BHP-020-5-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-030-3-11 |                              | 3A               | 0.35mA                    | 2200pF±20%     | 0.1uF±20%      | 1.2mH             |                   |                            |
| 60-BHP-030-3-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-030-5-11 |                              |                  | 0.50mA                    | 3300pF±20%     | 0.1uF±20%      |                   |                   |                            |
| 60-BHP-030-5-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-060-3-11 |                              | 6A               | 0.35mA                    | 2200pF±20%     | 0.1uF±20%      | 0.53mH            |                   | 45°C                       |
| 60-BHP-060-3-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |
| 60-BHP-060-5-11 |                              |                  | 0.50mA                    | 3300pF±20%     | 0.1uF±20%      |                   |                   |                            |
| 60-BHP-060-5-4  |                              |                  |                           |                | .047uF±20%     |                   |                   |                            |

Note: Test voltage: 1500VAC one minute, line to ground  
Insulation resistance: 300 Mohm min. at 500VDC  
Voltage drop: 1V max. at rated current  
Weight: 50g  
Input: Compatible with IEC-320

# Power Entry Modules High Frequency Attenuation

Bolt-in for PCB Applications

## 60-BHP Series

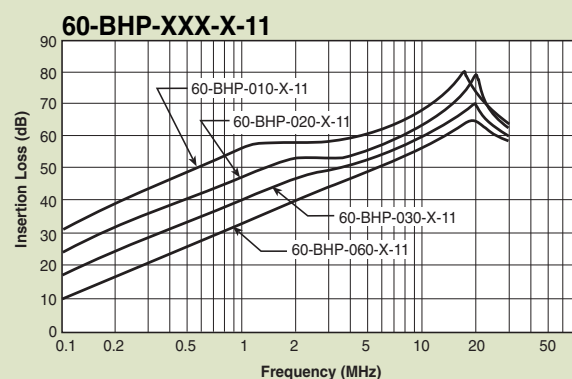
### Temperature Characteristics



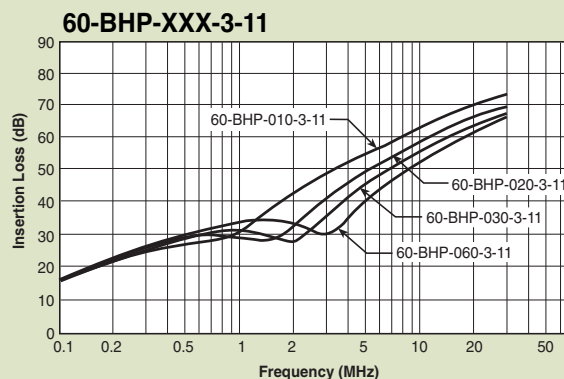
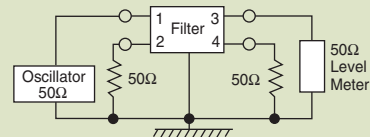
### 60-BHP PCB Mounting Type



### Common Mode



### Normal Mode



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