

## Multipurpose Power Line RFI Filter for Emission Control

# S Series



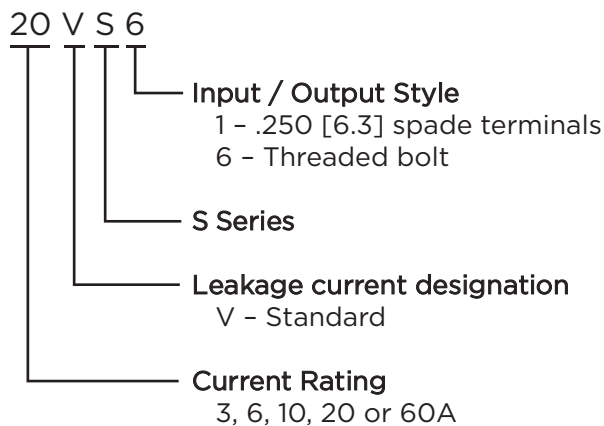
UL Recognized  
CSA Certified  
VDE Approved



## S Series

- Combines Line to Ground interference rejection filters with additional circuitry to reduce Line to Line noise and transients
- Designed for use when equipment impedance at RF frequencies is high
- Effective for use with switch-mode power supplies
- Effective when used to control emissions in equipment using SCR and T2L circuits for compliance with FCC Part 15, Subpart J and EN55022, Level A, down to 150kHz

## Ordering Information



## Available Part Numbers

|       |       |
|-------|-------|
| 3VS1  | 20VS1 |
| 6VS1  | 20VS6 |
| 10VS1 | 60VS6 |

## Specifications

### Maximum leakage current each Line to Ground:

|                 | 3 & 20A | 60A     |
|-----------------|---------|---------|
| @120 VAC 60 Hz: | .4 mA   | .75 mA  |
| @250 VAC 50 Hz: | .7 mA   | 1.25 mA |

### Hipot rating (one minute):

|                 |          |
|-----------------|----------|
| Line to Ground: | 2250 VDC |
| Line to Line:   | 1450 VDC |

### Rated Voltage (max):

250 VAC

### Operating Frequency:

50/60 Hz

### Rated Current:

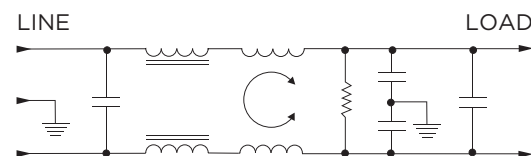
3 to 60A

### Operating Ambient Temperature Range

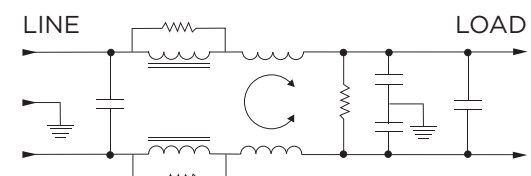
(at rated current  $I_r$ ): -10°C to +40°C  
In an ambient temperature ( $T_a$ ) higher than +40°C the maximum operating current ( $I_o$ ) is calculated as follows:  $I_o = I_r \sqrt{(85-T_a)/45}$

## Electrical Schematics

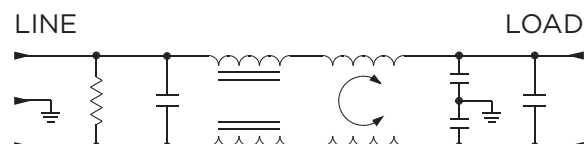
### 3, 6, 10VS



### 20VS



### 60VS

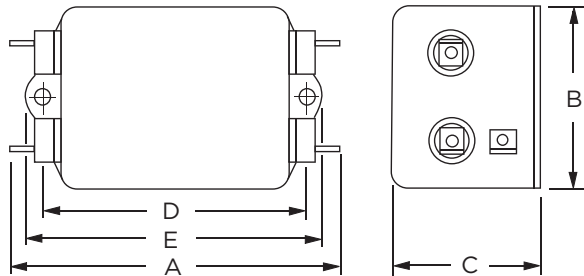


**Multipurpose Power Line RFI Filter for Emission Control** *(continued)*

# S Series

## Case Styles

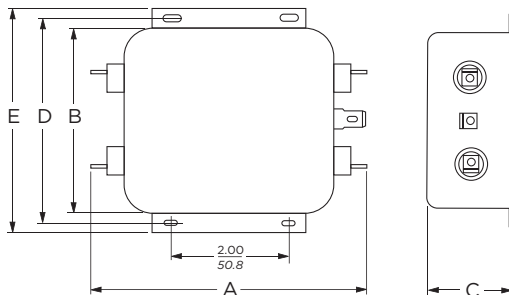
### S1 (3, 6, 10A)



Typical Dimensions:

Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole  
Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot  
Mounting Holes (2): .188 [4.78] Dia.

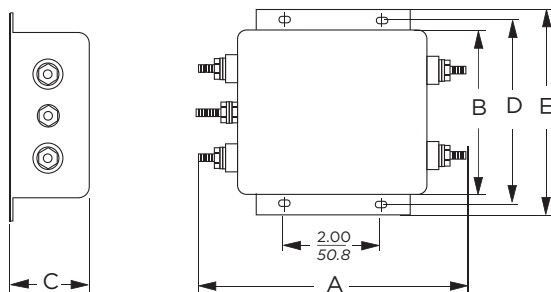
### 20VS1



Typical Dimensions:

Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole  
Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot  
Mounting Slots (4): .250 x .156 [6.35 x 3.96] Dia.

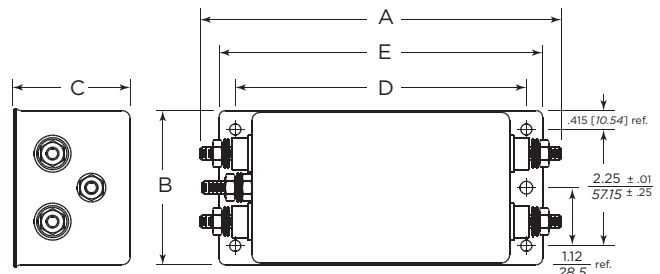
### 20VS6



Typical Dimensions:

Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max.  $\pm 2$  [.22]  
Mounting Slots (4): .250 x .156 [6.35 x 3.96] Dia.

### 60VS6



Typical Dimensions:

Terminals (5): 1/4-20, Torque 56 lbf-in. [6.32 N-m] max.  $\pm 2$  [.22]  
Mounting Holes (5): .218 [5.53] Dia.  $\pm .006$  [.152]

## Case Dimensions

| Part No. | A<br>(max)    | B<br>(max)    | C<br>(max)    | D<br>$\pm .015$<br>$\pm .38$ | E<br>(max)     |
|----------|---------------|---------------|---------------|------------------------------|----------------|
| 3VS1     | 3.36<br>85.3  | 1.82<br>46.2  | 1.16<br>29.5  | 2.375<br>60.33               | 2.78<br>70.6   |
| 6VS1     | 3.86<br>98.0  | 2.08<br>52.8  | 1.53<br>38.9  | 2.938<br>74.63               | 3.34<br>84.8   |
| 10VS1    | 3.86<br>98.0  | 2.08<br>52.8  | 1.53<br>38.9  | 2.938<br>74.63               | 3.34<br>84.8   |
| 20VS1    | 5.23<br>132.8 | 3.38<br>85.9  | 1.53<br>38.9  | 3.75<br>95.25                | 4.20<br>106.7  |
| 20VS6    | 5.34<br>135.6 | 3.38<br>85.9  | 1.53<br>38.9  | 3.75<br>95.25                | 4.20<br>106.7  |
| 60VS6    | 7.2<br>182.88 | 3.08<br>78.23 | 2.28<br>57.91 | 5.625<br>142.87              | 6.25<br>158.75 |

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RFI Power Line Filters

## Multipurpose Power Line RFI Filter for Emission Control *(continued)*

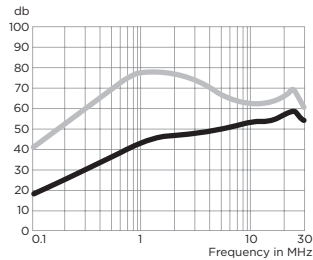
# S Series

## Performance Data

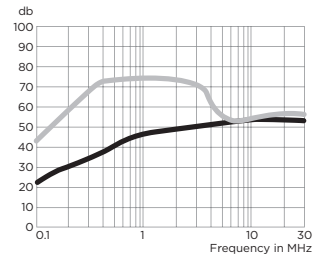
### Typical Insertion Loss

Measured in closed 50 Ohm system

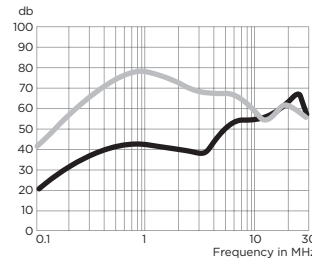
#### 3VS



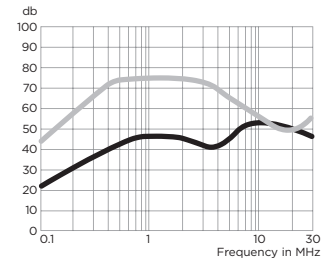
#### 6VS



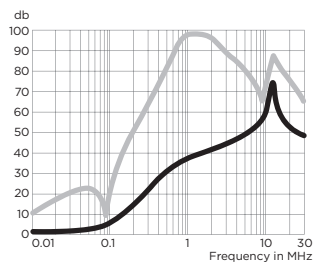
#### 10VS



#### 20VS



#### 60VS



— Common Mode / Asymmetrical (L-G)  
— Differential Mode / Symmetrical (L-L)

### Minimum Insertion Loss

Measured in closed 50 Ohm system

#### Common Mode / Asymmetrical (Line to Ground)

| Current<br>Rating | Frequency – MHz |    |    |    |    |    |    |    |
|-------------------|-----------------|----|----|----|----|----|----|----|
|                   | .15             | .5 | 1  | 2  | 5  | 10 | 20 | 30 |
| 3A                | 15              | 27 | 35 | 40 | 32 | 44 | 47 | 47 |
| 6A                | 15              | 27 | 35 | 40 | 32 | 44 | 47 | 47 |
| 10A               | 15              | 27 | 35 | 40 | 32 | 44 | 47 | 47 |
| 20A               | 15              | 30 | 38 | 38 | 32 | 43 | 42 | 40 |
| 60A               | 7               | 27 | 34 | 38 | 45 | 54 | 44 | 40 |

#### Differential Mode / Symmetrical (Line to Line)

| Current<br>Rating | Frequency – MHz |    |    |    |    |    |    |    |    |
|-------------------|-----------------|----|----|----|----|----|----|----|----|
|                   | .15             | .3 | .5 | 1  | 2  | 5  | 10 | 20 | 30 |
| 3A                | 35              | 50 | 65 | 65 | 65 | 60 | 50 | 40 | 45 |
| 6A                | 35              | 50 | 65 | 65 | 65 | 60 | 45 | 48 | 48 |
| 10A               | 35              | 50 | 65 | 65 | 65 | 60 | 50 | 40 | 45 |
| 20A               | 35              | 50 | 65 | 65 | 65 | 60 | 45 | 48 | 48 |
| 60A               | 37              | -  | 77 | 93 | 86 | 70 | 54 | 64 | 54 |