

**Multipurpose Power Line RFI Filter for Emission Control**

# S Series



UL Recognized  
CSA Certified  
VDE Approved



20VS1

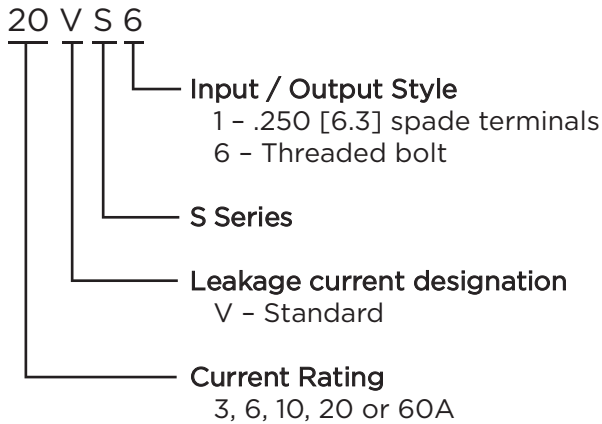


3VS1

## 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:

	<u>3 &amp; 20A</u>	<u>60A</u>
@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

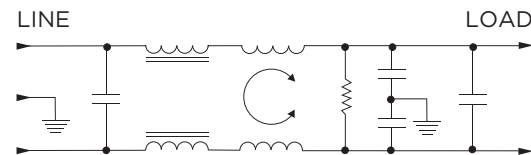
### Operating Ambient Temperature Range

(at rated current  $I_r$ ): -10°C to +40°C

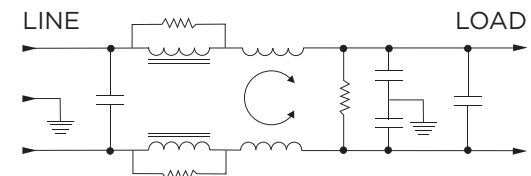
In an ambient temperature ( $T_a$ ) higher than +40°C the maximum operating current ( $I_o$ ) is calculated as follows:  $I_o = I_r \sqrt{(85-T_a)/45}$

## Electrical Schematics

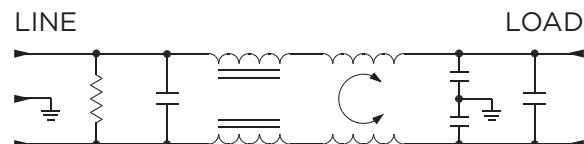
### 3, 6, 10VS



### 20VS



### 60VS

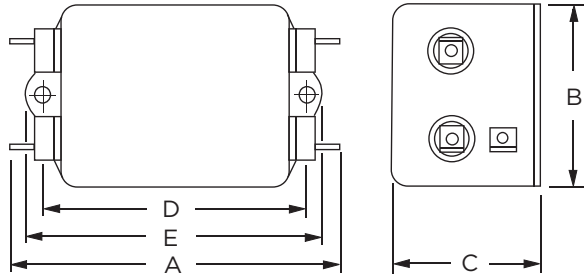


**Multipurpose Power Line RFI Filter for Emission Control** *(continued)*

# S Series

## Case Styles

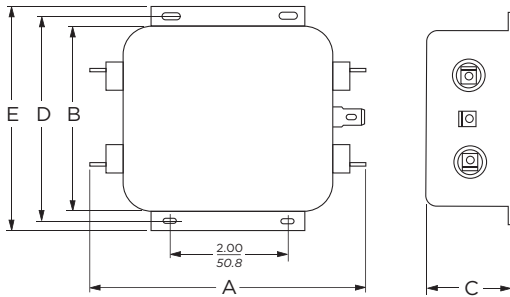
### S1 (3, 6, 10A)



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.

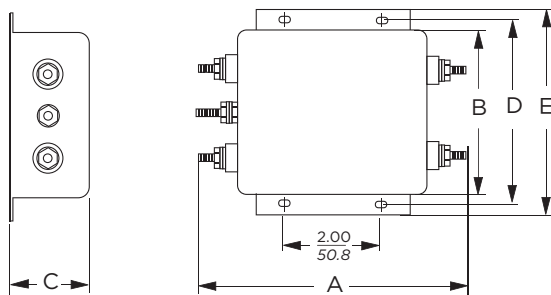
### 20VS1



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.

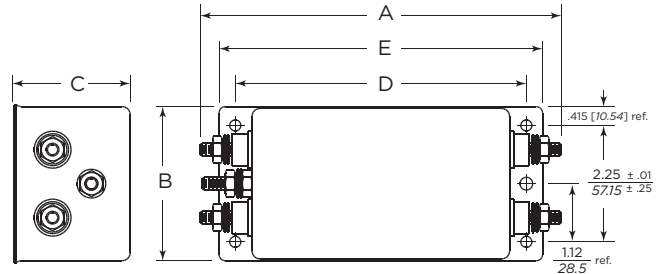
### 20VS6



Typical Dimensions:

- Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max. ± 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. ± 2 [.22]
- Mounting Holes (5): .218 [5.53] Dia. ± .006 [.152]

## Case Dimensions

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



RFI Power Line Filters

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

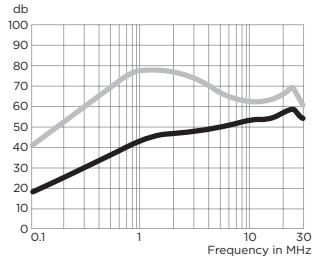
# S Series

## Performance Data

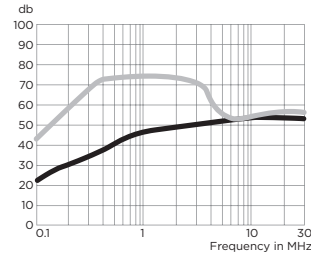
### Typical Insertion Loss

Measured in closed 50 Ohm system

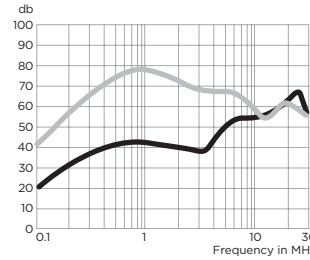
**3VS**



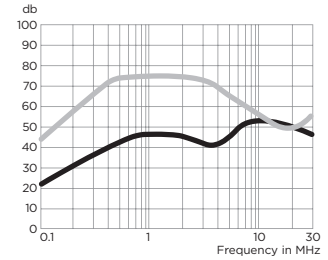
**6VS**



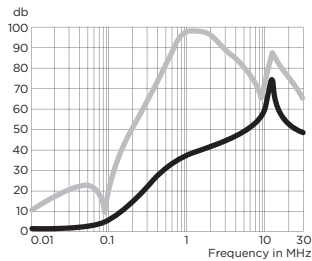
**10VS**



**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 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 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