

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

# V and W Series



**UL Recognized  
CSA Certified  
VDE Approved<sup>1</sup>**



Both the V and W series are effective to control emissions in equipment using SCR and T<sup>2</sup>L circuits for compliance with FCC Part 15, Subpart J and EN55022, Level A, down to 150kHz

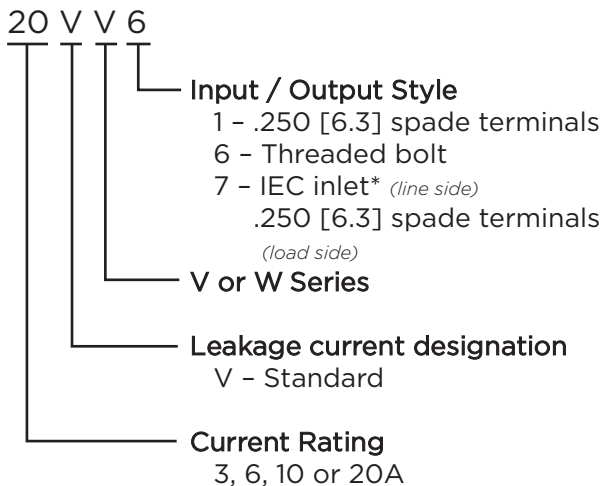
## V Series

- Offers an N = 3 (“T”) Line to Ground impedance to common mode and an N = 5 (“Dbl. Pi”) impedance for Line to Line differential mode interference
- Designed for susceptibility use when equipment impedance at RF frequencies is low

## W Series

- Offers an N = 4 (“Dbl. L”) Line to Ground impedance for common mode and an N=5 (“Dbl. Pi”) impedance for Line to Line differential mode interference
- Designed for use when equipment impedance at RF frequencies is high
- Two stage construction provides excellent suppression at high frequencies

## Ordering Information



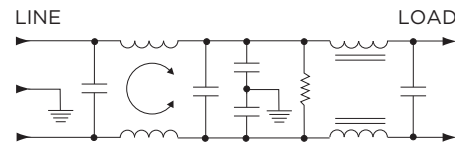
<sup>1</sup>IEC 60320-1 C20 inlet mates with C19 connector

## Specifications

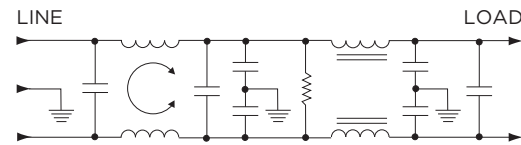
- Maximum leakage current each Line to Ground:**  
 @ 120 VAC 60 Hz: .5 mA  
 @ 250 VAC 50 Hz: .82 mA
- Hipot rating (one minute):**  
 Line to Ground: 2250 VDC  
 Line to Line: 1450 VDC
- Rated Voltage (max):** 250 VAC
- Operating Frequency:** 50/60 Hz
- Rated Current:** 3 to 20A\*
- Operating Ambient Temperature Range (at rated current I<sub>r</sub>):** -10°C to +40°C  
 In an ambient temperature (T<sub>a</sub>) higher than +40°C the maximum operating current (I<sub>O</sub>) is calculated as follows: I<sub>O</sub> = I<sub>r</sub> √((85-T<sub>a</sub>)/45)

## Electrical Schematics

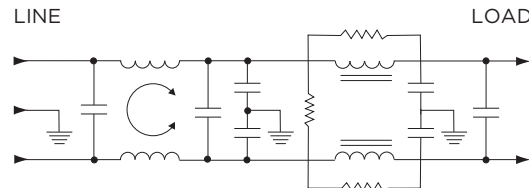
### V Series



### W Series (3, 6 & 10A)



### W Series (20A)



<sup>1</sup>20VW7, 20A model tested by Underwriters Laboratories to US and Canadian requirements and is VDE approved at 16A, 250VAC

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

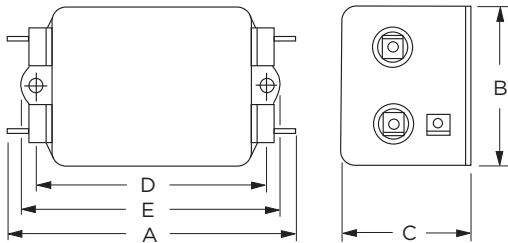
# V and W Series

## Available Part Numbers

3VV1	3VW1
6VV1	3VW1
10VV1	10VW1
20VV1	20VW1
20VV6	20VW6
	20VW7*

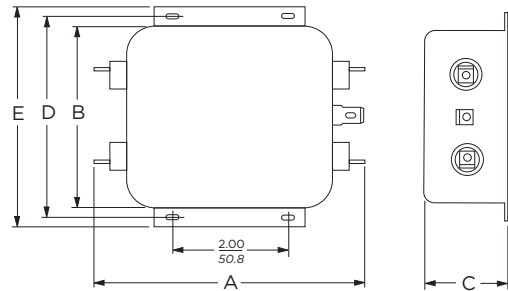
## Case Styles

### V1 / W1 (3, 6 & 10A)



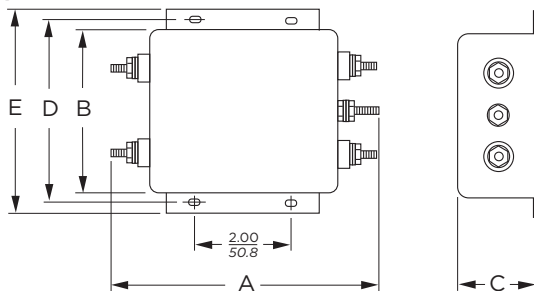
Typical Dimensions:  
 Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole  
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot  
 Mounting Holes (2): .188 [4.78] Dia.

### V1 / W1 (20A)



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.

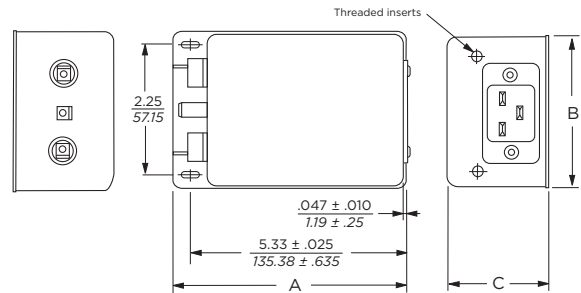
### V6 / W6



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.

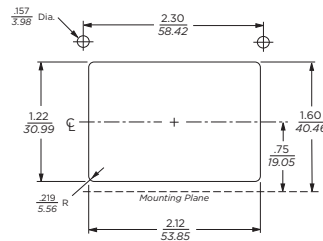
## Case Styles *(continued)*

### VW7



Typical Dimensions:  
 Load Terminals (2): .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  
 Line Inlet (1): IEC 60320-1 C20  
 Tapped Inserts (2): 6-32 x 1/4

## Recommended Panel Cutout



## Case Dimensions

Part No.	A (max)	B (max)	C (max)	D ±.015 ±.38	E (max)
3VV1, 3VW1	<b>3.36</b> 85.3	<b>1.82</b> 46.2	<b>1.28</b> 32.5	<b>2.375</b> 60.33	<b>2.78</b> 70.6
6VV1, 6VW1	<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
10VV1, 10VW1	<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
20VV1, 20VW1	<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
20VV6, 20VW6	<b>5.34</b> 135.64	<b>3.38</b> 85.9	<b>1.53</b> 38.9	<b>3.76</b> 95.5	<b>4.20</b> 106.7
20VW7	<b>5.65</b> 143.51	<b>3.12</b> 79.25	<b>2.29</b> 58.17	—	—

\*20VW7, 20A model tested by Underwriters Laboratories to US and Canadian requirements and is VDE approved at 16A, 250VAC

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

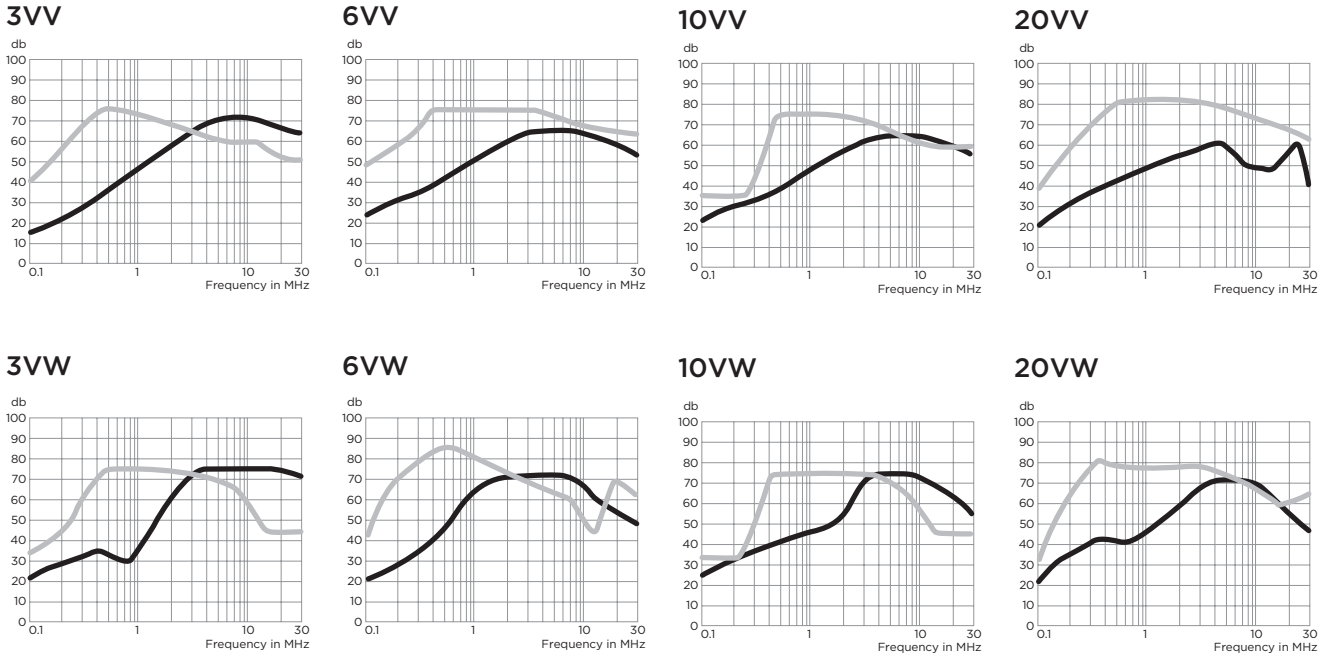
# V and W Series

## Performance Data

### Typical Insertion Loss

Measured in closed 50 Ohm system

— 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
<b>V Series</b>								
3A	15	27	38	47	55	55	50	48
6A	15	27	28	47	55	55	50	48
10A	15	27	38	47	55	55	50	48
20A	15	30	41	49	55	46	36	30
<b>W Series</b>								
3A	13	25	20	45	60	65	65	63
6A	18	30	34	40	65	65	57	47
10A	18	30	34	40	65	65	57	47
20A	18	30	34	40	65	65	57	47

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

Current Rating	Frequency – MHz							
	.15	.5	1	2	5	10	20	30
<b>V Series</b>								
3A	25	25	65	63	60	52	50	50
6A	40	54	65	65	65	60	57	55
10A	25	25	65	63	60	52	50	50
20A	25	25	65	63	60	52	50	50
<b>W Series</b>								
3A	25	40	65	65	62	55	35	35
6A	30	54	65	65	60	55	38	38
10A	25	25	65	65	65	50	45	45
20A	25	25	65	65	65	50	45	45