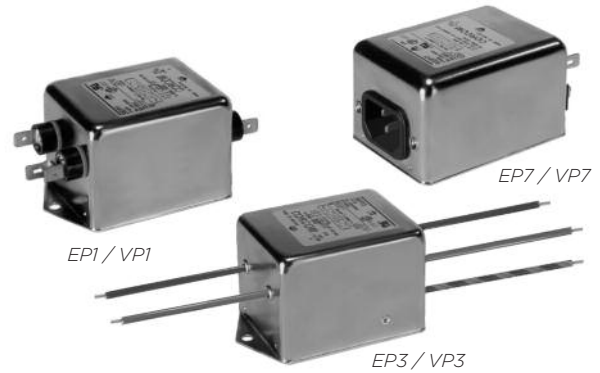


**Dual Stage RFI Power Line Filters for Switching Mode Power Supplies**

**EP / VP Series**



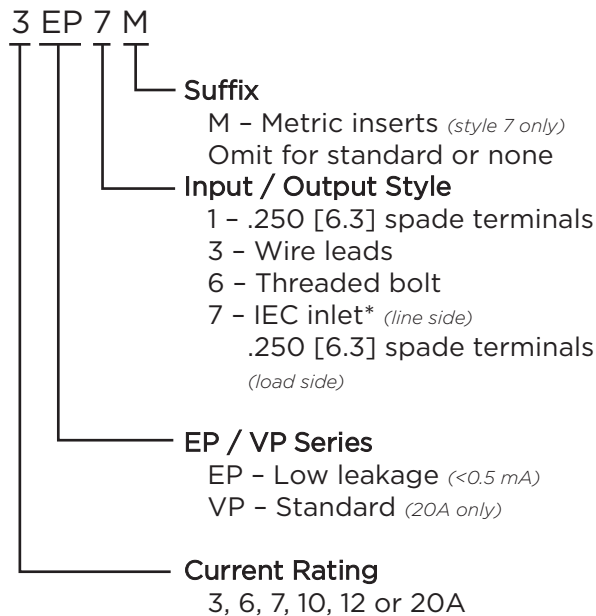
UL Recognized  
CSA Certified  
VDE Approved



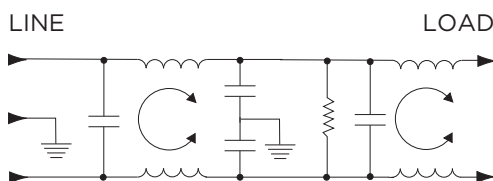
**EP & VP Series**

- Dual stage filter offers high insertion loss
- Well suited for meeting CISPR 22 A and FCC Part 15J, Class B
- EP model meets very low leakage current requirements
- 7A and 12A versions offer optimum package size

**Ordering Information**



**Electrical Schematic**



\*IEC 60320-1 C14 inlet mates with C13 connector

**Specifications**

**Maximum leakage current each Line to Ground:**

	VP Models	EP Models
@ 120 VAC 60 Hz:	.73 mA	.21 mA
@ 250 VAC 50 Hz:	1.27 mA	.36 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**

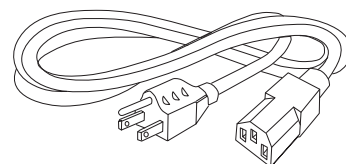
(at rated current  $I_r$ ): -10°C to +40°C  
In an ambient temperature ( $T_a$ ) higher than +40°C the maximum operating current ( $I_o$ ) is calculated as follows:  $I_o = I_r \sqrt{(85-T_a)/45}$

**Available Part Numbers**

3EP1	10EP1
3EP3	10EP3
3EP7	12EP1
3EP7M	12EP3
6EP1	20EP1
6EP3	20EP6
7EP1	20VP1
7EP3	20VP6

**Accessories**

GA400: NEMA 5-15P to IEC 60320-1 C-13 line cord

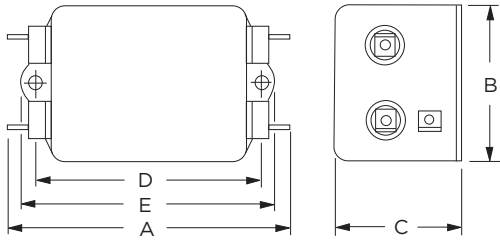


**Dual Stage RFI Filters for Switching Power Supplies** *(continued)*

# EP / VP Series

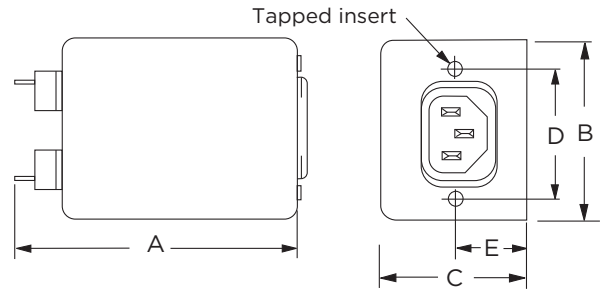
## Case Styles

### EP1 / VP1 (1-15A)



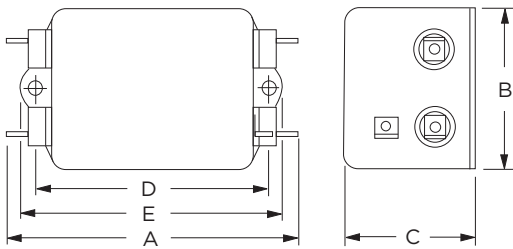
Typical Dimensions:  
 Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole  
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot  
 Mounting Holes (2): .188 [4.78] Dia.

### EP7 & EP7M



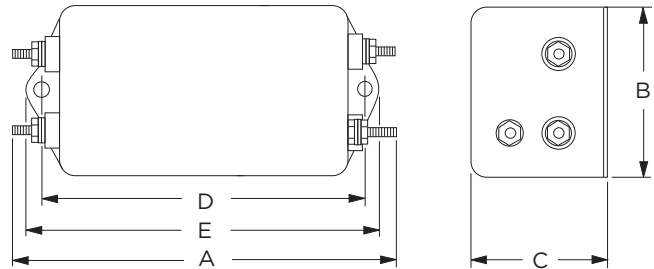
Typical Dimensions:  
 Load Terminals (2): .250 [6.3] with .07 [1.8] Dia. hole  
 Line Inlet (1): IEC 60320-1 C14  
 EP7 Tapped Inserts (2): 6-32 x 1/4  
 EP7M Tapped Inserts (2): M3 x .5

### 20EP1 / VP1



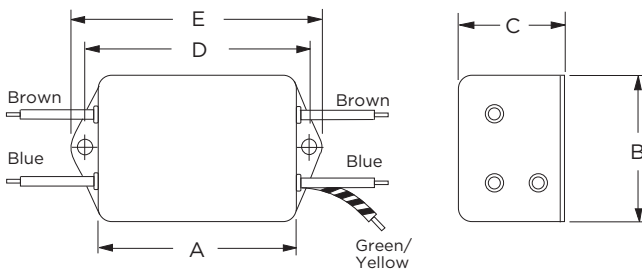
Typical Dimensions:  
 Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole  
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot  
 Mounting Holes (2): .188 [4.78] Dia.

### 20EP6 / VP6



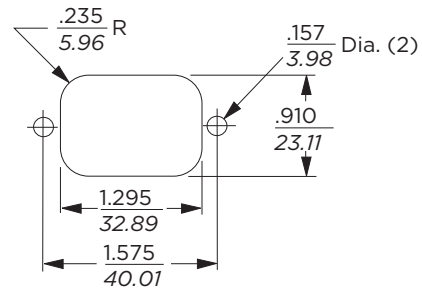
Typical Dimensions:  
 Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max. ± 2 [22]  
 Mounting Holes (2): .188 [4.78] Dia.

### EP3



Typical Dimensions:  
 Wire leads (5): 4.0 [101.6] Min, AWG18  
 Mounting Holes (2): .188 [4.78] Dia.

## Recommended Panel Cutout



Tolerance ± .005 [0.13]

**Dual Stage RFI Filters for Switching Power Supplies** *(continued)*

# EP / VP Series

## Case Dimensions

Part No.	A (max)	B (max)	C (max)	D $\pm .015$ $\pm .38$	E (max)
3EP1	<b>3.85</b>	<b>2.07</b>	<b>1.78</b>	<b>2.938</b>	<b>3.35</b>
3EP3	<i>97.8</i>	<i>52.6</i>	<i>45.2</i>	<i>74.63</i>	<i>85.1</i>
3EP7/7M	<b>2.56</b>	<b>2.07</b>	<b>1.78</b>	<b>2.938</b>	<b>3.35</b>
	<i>65.0</i>	<i>52.6</i>	<i>45.2</i>	<i>74.63</i>	<i>85.1</i>
6EP1	<b>3.21</b>	<b>2.25</b>	<b>1.78</b>	<b>1.575</b>	<b>0.63*</b>
	<i>81.5</i>	<i>57.2</i>	<i>45.2</i>	<i>40.01</i>	<i>12.1*</i>
6EP3	<b>6.62</b>	<b>2.07</b>	<b>2.28</b>	<b>5.625</b>	<b>6.03</b>
	<i>168.1</i>	<i>52.6</i>	<i>57.9</i>	<i>142.88</i>	<i>153.2</i>
7EP1	<b>5.33</b>	<b>2.07</b>	<b>2.28</b>	<b>5.625</b>	<b>6.03</b>
	<i>135.4</i>	<i>52.6</i>	<i>57.9</i>	<i>142.88</i>	<i>153.2</i>
7EP3	<b>4.79</b>	<b>2.07</b>	<b>1.53</b>	<b>3.947</b>	<b>4.33</b>
	<i>121.7</i>	<i>52.6</i>	<i>38.9</i>	<i>10.25</i>	<i>109.98</i>
10EP1	<b>3.50</b>	<b>2.07</b>	<b>1.53</b>	<b>3.947</b>	<b>4.33</b>
	<i>88.9</i>	<i>52.6</i>	<i>38.9</i>	<i>100.25</i>	<i>109.98</i>
10EP3	<b>6.62</b>	<b>2.07</b>	<b>2.78</b>	<b>5.625</b>	<b>6.03</b>
	<i>168.1</i>	<i>52.6</i>	<i>70.6</i>	<i>142.88</i>	<i>153.2</i>
12EP1	<b>5.35</b>	<b>2.03</b>	<b>2.78</b>	<b>5.625</b>	<b>6.03</b>
	<i>135.9</i>	<i>52.6</i>	<i>70.6</i>	<i>142.88</i>	<i>153.2</i>
12EP3	<b>4.97</b>	<b>1.78</b>	<b>1.78</b>	<b>4.063</b>	<b>4.46</b>
	<i>126.2</i>	<i>45.2</i>	<i>45.2</i>	<i>103.20</i>	<i>113.28</i>
20EP1/VP1	<b>3.624</b>	<b>1.78</b>	<b>1.78</b>	<b>4.063</b>	<b>4.46</b>
	<i>92.05</i>	<i>45.2</i>	<i>45.2</i>	<i>103.20</i>	<i>113.28</i>
20EP6/VP6	<b>4.95</b>	<b>1.8</b>	<b>1.8</b>	<b>4.063</b>	<b>4.47</b>
	<i>125.7</i>	<i>45.7</i>	<i>45.7</i>	<i>103.20</i>	<i>113.5</i>
	<b>5.09</b>	<b>1.78</b>	<b>1.78</b>	<b>4.063</b>	<b>4.46</b>
	<i>127.3</i>	<i>45.2</i>	<i>45.2</i>	<i>103.20</i>	<i>113.3</i>

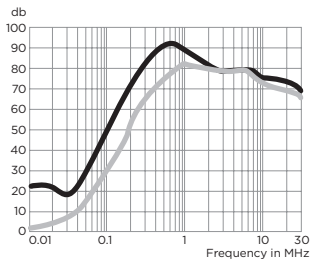
\*±0.02 [0.5]

## Performance Data

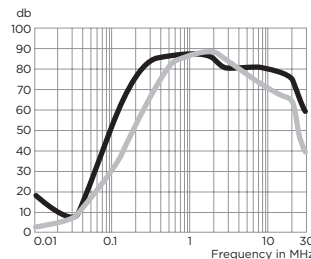
### Typical Insertion Loss

Measured in closed 50 Ohm system

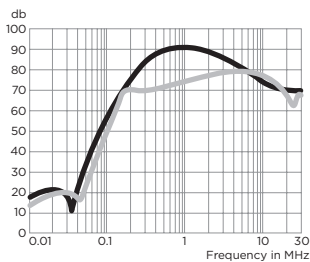
#### 3EP



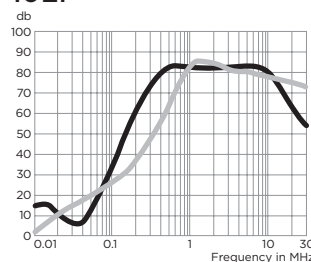
#### 6EP



#### 7EP



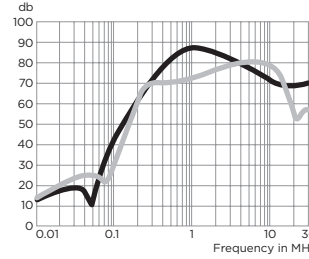
#### 10EP



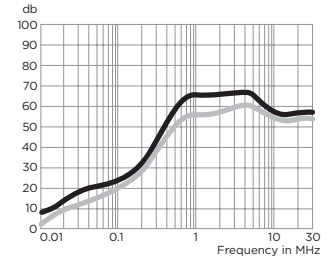
## Typical Insertion Loss

*(continued)*

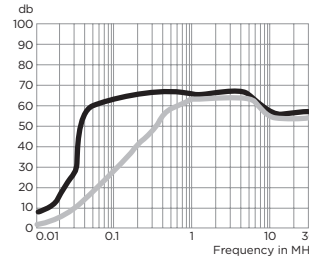
#### 12EP



#### 20EP



#### 20VP



— 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							
	.01	.05	.15	.5	1	5	10	30
<b>EP Models</b>								
3A	1	10	58	65	65	66	60	25
6, 10A	1	10	58	65	65	66	60	25
7A	15	28	63	75	78	75	75	55
12A	12	7	52	68	70	70	70	45
20A	3	6	28	50	55	60	55	55

#### VP Models

20A	3	2	42	60	65	65	55	55
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Differential Mode / Symmetrical (Line to Line)

Current Rating	Frequency – MHz							
	.01	.05	.15	.5	1	5	10	30
<b>EP Models</b>								
3A	1	36	65	65	65	65	58	58
6, 10A	1	30	65	65	65	65	35	35
7A	10	43	55	65	68	70	65	50
12A	11	7	13	70	70	70	65	45
20A	8	25	60	65	65	58	58	58

#### VP Models

20A	8	25	60	65	65	58	58	58
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Dimensions are in inches and millimeters unless otherwise specified. Values in italics are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

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