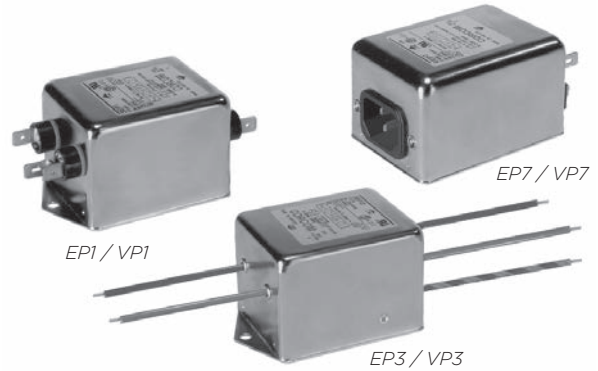


Dual Stage RFI Power Line Filters for Switching Mode Power Supplies

EP / VP Series



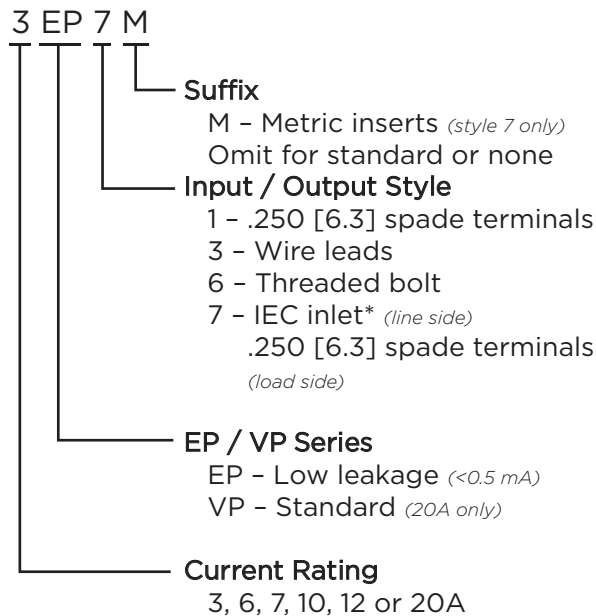
UL Recognized
CSA Certified
VDE Approved



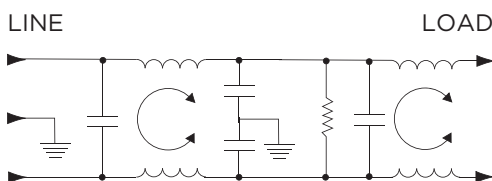
EP & VP Series

- 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

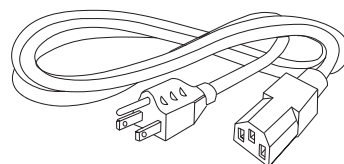
(at rated current I_r): -10°C to +40°C
In an ambient temperature (T_a) higher than +40°C the maximum operating current (I_o) is calculated as follows: $I_o = I_r \sqrt{(85-T_a)/45}$

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

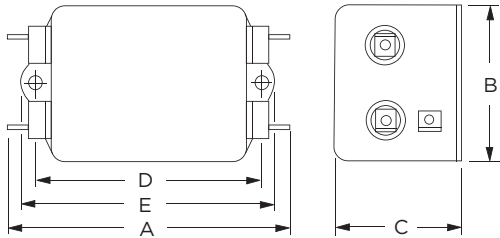


Dual Stage RFI Filters for Switching Power Supplies *(continued)*

EP / VP Series

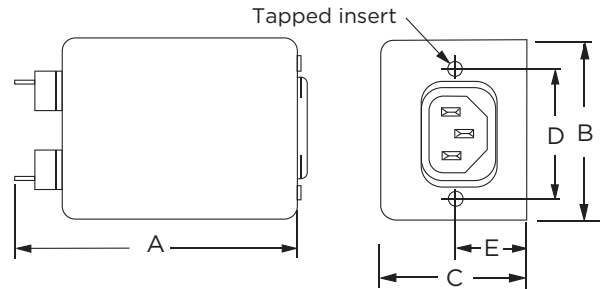
Case Styles

EP1 / VP1 (1-15A)



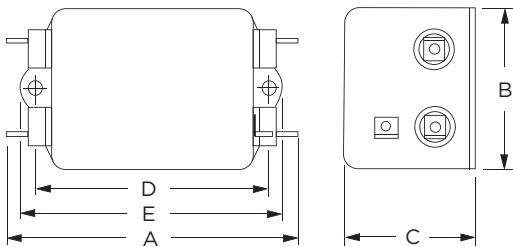
Typical Dimensions:
 Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot
 Mounting Holes (2): .188 [4.78] Dia.

EP7 & EP7M



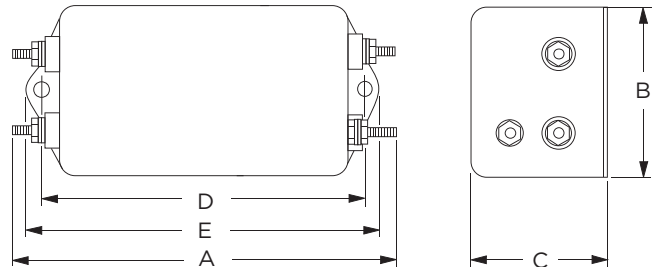
Typical Dimensions:
 Load Terminals (2): .250 [6.3] with .07 [1.8] Dia. hole
 Line Inlet (1): IEC 60320-1 C14
 EP7 Tapped Inserts (2): 6-32 x 1/4
 EP7M Tapped Inserts (2): M3 x .5

20EP1 / VP1



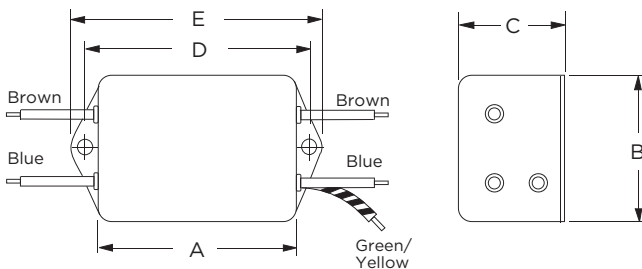
Typical Dimensions:
 Line/Load Terminals (4): .250 [6.3] with .07 [1.8] Dia. hole
 Ground Terminal (1): .250 [6.3] with .07 x .16 [1.8 x 3.8] slot
 Mounting Holes (2): .188 [4.78] Dia.

20EP6 / VP6



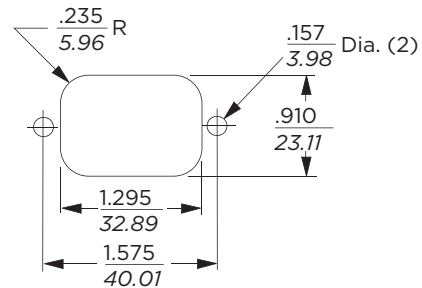
Typical Dimensions:
 Terminals (5): 8-32, Torque 18 lbf-in. [2.03 N-m] max. ± 2 [22]
 Mounting Holes (2): .188 [4.78] Dia.

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 | 3.85 | 2.07 | 1.78 | 2.938 | 3.35 |
| 3EP3 | 2.56 | 2.07 | 1.78 | 2.938 | 3.35 |
| 3EP7/7M | 3.21 | 2.25 | 1.78 | 1.575 | 0.63* |
| 6EP1 | 6.62 | 2.07 | 2.28 | 5.625 | 6.03 |
| 6EP3 | 5.33 | 2.07 | 2.28 | 5.625 | 6.03 |
| 7EP1 | 4.79 | 2.07 | 1.53 | 3.947 | 4.33 |
| 7EP3 | 3.50 | 2.07 | 1.53 | 3.947 | 4.33 |
| 10EP1 | 6.62 | 2.07 | 2.78 | 5.625 | 6.03 |
| 10EP3 | 5.35 | 2.03 | 2.78 | 5.625 | 6.03 |
| 12EP1 | 4.97 | 1.78 | 1.78 | 4.063 | 4.46 |
| 12EP3 | 3.624 | 1.78 | 1.78 | 4.063 | 4.46 |
| 20EP1/VP1 | 4.95 | 1.8 | 1.8 | 4.063 | 4.47 |
| 20EP6/VP6 | 5.09 | 1.78 | 1.78 | 4.063 | 4.46 |

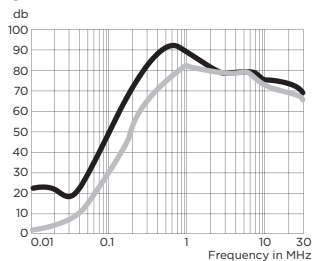
*±0.02 [0.5]

Performance Data

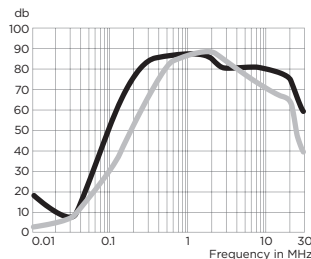
Typical Insertion Loss

Measured in closed 50 Ohm system

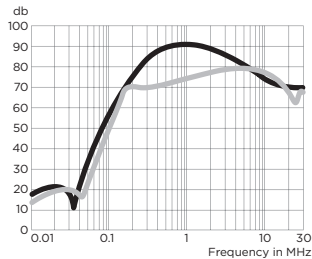
3EP



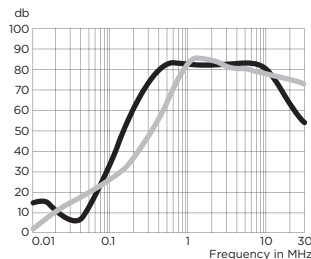
6EP



7EP

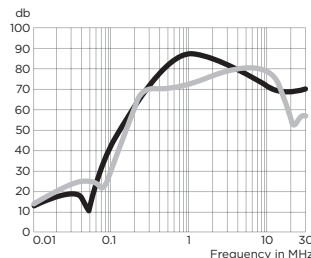


10EP

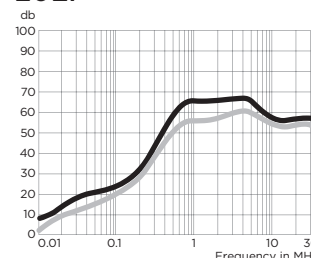


Typical Insertion Loss *(continued)*

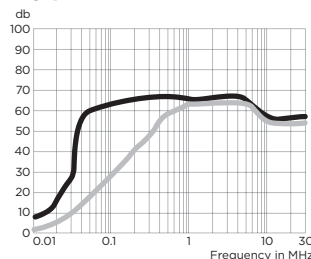
12EP



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 |
| EP Models | | | | | | | | |
| 3A | 12 | 10 | 58 | 65 | 65 | 66 | 62 | 30 |
| 6, 10A | 10 | 15 | 60 | 65 | 65 | 65 | 60 | 35 |
| 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 |
|-----|---|---|----|----|----|----|----|----|

Differential Mode / Symmetrical (Line to Line)

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

VP Models

| | | | | | | | | |
|-----|---|---|----|----|----|----|----|----|
| 20A | 8 | - | 25 | 60 | 65 | 65 | 58 | 58 |
|-----|---|---|----|----|----|----|----|----|

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