

Catalog: 1654001 Issue Date: 06.2011

#### Chassis or PC Board Mountable Power Line Filters for Emission Control

# X, Y, Z Series



UL Recognized CSA Certified VDE Approved



#### X, Y, Z Series

- Compact chassis or PC board mountable
- Three levels of performance
- Complete filtering solution in minimal size

#### X Series

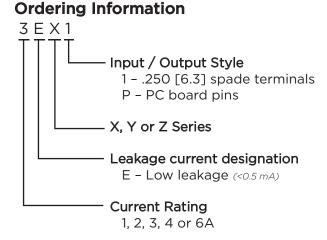
 Designed to bring most digital equipment (including those with switching power supplies) into compliance with FCC Part 15J, Class B conducted emission limits

#### **Y Series**

 Designed to bring most digital equipment (including those with switching power supplies) into compliance with EN55022, Level A and FCC Part 15J, Class B conducted emission limits

#### **Z** Series

 Designed to bring most digital equipment (including those with switching power supplies) into compliance with EN55022, Level B and FCC Part 15J, Class B conducted emission limits



# **Specifications**

Maximum leakage current each Line to Ground:

@ 120 VAC 60 Hz: .30 mA @250 VAC 50 Hz: .50 mA

Hipot rating (one minute):

Line to Ground: 2250 VDC
Line to Line: 1450 VDC

Rated Voltage (max): 250 VAC

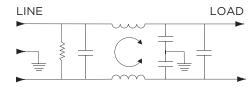
Operating Frequency: 50/60 Hz

Rated Current: 1 to 6A

**Operating Ambient Temperature Range** 

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

## **Electrical Schematic**



## **Available Part Numbers**

3EXP	4EYP
3EX1	1EZP
4EXP	2EZP
6EXP	3EZP
2EYP	3EZ1
3EYP	

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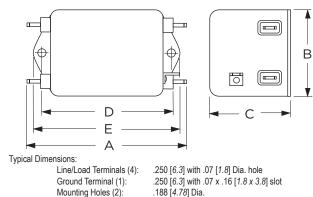


#### Chassis & PC Board Mountable RFI Filters for Emission Control (continued)

# X, Y, Z Series

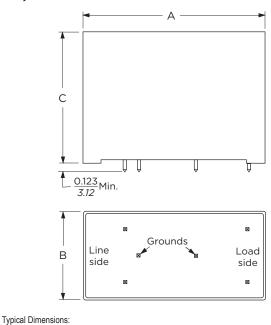
# **Case Styles**

# X1 & Z1



## XP, YP & ZP

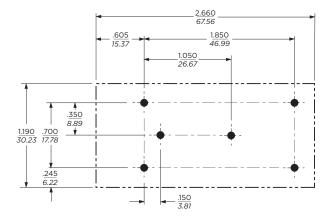
Pins (5):



#### **Case Dimensions**

3EXP         (max)         (a.3)         (A.7)         (A.8)         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79         2.79	Part No.	Α	В	С	D	Ε		
3EXP       66.3       28.7       41.1       41.1       2.375       2.79         3EX1       3.01       1.84       1.16       2.375       2.79         4EXP       2.61       1.13       1.62       —       —         6EXP       2.61       1.13       1.75       —       —         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	Part No.	(max)	(max)	(max)	± .015 ± .38	(max)		
66.3       28.7       41.1         3EX1       3.01       1.84       1.16       2.375       2.79         76.7       46.8       29.46       60.33       70.87         4EXP       2.61       1.13       1.62       —       —         6EXP       2.61       1.13       1.75       —       —         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	3EX1 4EXP	2.61	1.13	1.62	_	_		
3EXT       76.7       46.8       29.46       60.33       70.87         4EXP       2.61       1.13       1.62       —       —         6EXP       2.61       1.13       1.75       —       —         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35		66.3	28.7	41.1				
76.7       46.8       29.46       60.33       70.87         4EXP       2.61       1.13       1.62       —       —         6EXP       2.61       1.13       1.75       —       —         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	7EV1	3.01	1.84	1.16	2.375	2.79		
4EXP       66.6       28.7       41.1       —       —         6EXP       2.61       1.13       1.75       —       —         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	3EXI	76.7	46.8	29.46	60.33	70.87		
66.6 28.7 41.1  6EXP 2.61 1.13 1.75 — —  2EYP 2.61 1.13 1.62 — —  3EYP, 4EYP 66.3 28.7 44.5  1EZP 2.61 1.13 1.75 — —  1EZP 66.3 28.7 44.5  1EZP 66.3 28.7 41.1  2EZP, 3EZP 2.61 1.13 1.75 — —  3EZP, 3EZP 2.61 2.08 1.31 2.938 3.35	4EXP	2.61	1.13	1.62	_	_		
66.3 28.7 44.5  2EYP 2.61 1.13 1.62 — —  3EYP, 4EYP 66.3 28.7 44.5  1EZP 2.61 1.13 1.75 — —  1EZP 66.3 28.7 44.5  2EZP, 3EZP 2.61 1.13 1.62 — —  2EZP, 3EZP 2.61 1.13 1.75 — —  3EZI 2.61 2.87 44.5  3.54 2.08 1.31 2.938 3.35		66.6	28.7	41.1	_	_		
66.3       28.7       44.5         2EYP       2.61       1.13       1.62       —       —         3EYP, 4EYP       2.61       1.13       1.75       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	SEVD	2.61	1.13	1.75				
2EYP       66.3       28.7       41.1         3EYP, 4EYP       2.61       1.13       1.75       —         66.3       28.7       44.5       —       —         1EZP       2.61       1.13       1.62       —       —         2EZP, 3EZP       2.61       1.13       1.75       —       —         3EZI       3.54       2.08       1.31       2.938       3.35	6EXP	66.3	28.7	44.5	_	_		
3EYP, 4EYP     2.61     1.13     1.75     —     —       1EZP     2.61     1.13     1.62     —     —       2EZP, 3EZP     2.61     1.13     1.62     —     —       2EZP, 3EZP     2.61     1.13     1.75     —     —       3EZ1     3.54     2.08     1.31     2.938     3.35	2EVD	2.61	1.13	1.62	_	_		
3EYP, 4EYP       66.3       28.7       44.5         1EZP       2.61       1.13       1.62	ZETP	66.3	28.7	41.1				
1EZP     2.61     1.13     1.62     —     —       2EZP, 3EZP     2.61     1.13     1.75     —     —       3EZ1     3.54     2.08     1.31     2.938     3.35	ZEVD AEVD	2.61	1.13	1.75	_	_		
1EZP       66.3       28.7       41.1         2EZP, 3EZP       2.61       1.13       1.75          3EZ1       3.54       2.08       1.31       2.938       3.35	3ETP, 4ETP	66.3	28.7	44.5				
2EZP, 3EZP 2.61 1.13 1.75 — — — — — — — — — — — — — — — — — — —	1575	2.61	1.13	1.62	_	_		
2EZP, 3EZP 66.3 28.7 44.5 3EZ1 3.54 2.08 1.31 2.938 3.35	IEZP	66.3	1.13 1.62					
3.54 2.08 1.31 2.938 3.35	2EZP, 3EZP	2.61	1.13	1.75	_	_		
3EZI		66.3	28.7	44.5	_	_		
	3EZ1	3.54	2.08	1.31	2.938	3.35		
		89.9	52.8	33.3	74.63	85.1		

## **Recommended PC Board Layout**



Tolerance ± .006 [.152] Holes(6): .075 [1.91] Dia.

0.065 [1.65] max. diagonal



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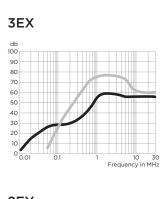
## Chassis & PC Board Mountable RFI Filters for Emission Control (continued)

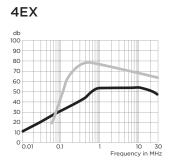
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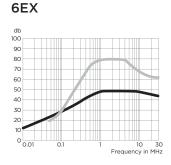
#### **Performance Data**

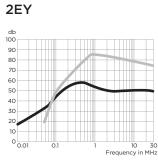
# **Typical Insertion Loss**

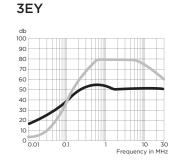
Measured in closed 50 Ohm system

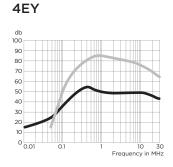


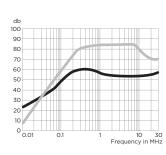




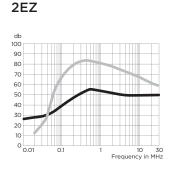


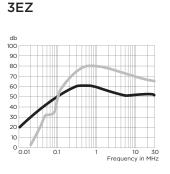






1EZ





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

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#### Chassis & PC Board Mountable RFI Filters for Emission Control (continued)

# Performance Data (Continued)

#### **Minimum Insertion Loss**

Measured in closed 50 Ohm system

Common Mode / Asymmetrical (Line to Ground)

Differential Mode	/ Symmetrical	(Line to	۱ina۱
	/ Svillinetrical	(Line to	பாய

Frequency – MHz					Frequency – MHz													
01	.05	.15	.5	1	5	10	30	Part No.	.02	.03	.05	.07	.15	.5	1	5	10	30
								X Series										
2	13	21	35	46	44	44	44	3A	-	-	-	5	34	60	65	60	45	50
2	13	22	38	44	44	44	38	4A	-	-	-	10	37	70	70	70	65	55
2	11	20	35	40	40	40	36	6A	-	-	-	3	31	65	70	70	65	55
								Y Series										
8	21	31	49	44	40	40	40	2A	-	-	10	19	40	70	75	70	60	55
11	24	36	43	40	40	40	40	3A	-	-	10	20	42	68	68	67	62	50
5	18	28	45	40	40	40	36	4A	-	-	6	18	41	67	75	70	65	55
								Z Series										
18	32	43	47	44	43	43	45	1A	7	29	34	43	62	70	70	70	60	55
18	32	45	41	40	40	40	40	2A	2	15	31	40	57	75	70	65	55	50
15	29	39	43	42	40	40	40	3A	-	10	26	34	53	75	75	70	60	55
	2 2 2 2 8 11 5	2 13 2 13 2 11 8 21 11 24 5 18 18 32 18 32	01 .05 .15  2 13 21 2 13 22 2 11 20  8 21 31 11 24 36 5 18 28  18 32 43 18 32 45	01 .05 .15 .5  2 13 21 35 2 13 22 38 2 11 20 35  8 21 31 49 11 24 36 43 5 18 28 45  18 32 43 47 18 32 45 41	2     13     21     35     46       2     13     22     38     44       2     11     20     35     40       8     21     31     49     44       11     24     36     43     40       5     18     28     45     40       18     32     43     47     44       18     32     45     41     40	2     13     21     35     46     44       2     13     22     38     44     44       2     11     20     35     40     40       8     21     31     49     44     40       11     24     36     43     40     40       5     18     28     45     40     40       18     32     43     47     44     43       18     32     45     41     40     40	2     13     21     35     46     44     44       2     13     22     38     44     44     44       2     11     20     35     40     40     40       8     21     31     49     44     40     40       11     24     36     43     40     40     40       5     18     28     45     40     40     40       18     32     43     47     44     43     43       18     32     45     41     40     40     40	2     13     21     35     46     44     44     44       2     13     22     38     44     44     44     38       2     11     20     35     40     40     40     36       8     21     31     49     44     40     40     40       11     24     36     43     40     40     40     40       5     18     28     45     40     40     40     36       18     32     43     47     44     43     43     45       18     32     45     41     40     40     40     40	. 01 .05 .15 .5 .5 .1 .5 .10 .30       Part No.         X Series         2 13 21 35 46 44 44 44 38 4A         2 13 22 38 44 44 44 38 4A         2 11 20 35 40 40 40 36         Fart No.         X Series         X Series         8 21 31 49 44 40 40 40 40 2A         11 24 36 43 40 40 40 40 36         5 18 28 45 40 40 40 40 36         Z Series         18 32 43 47 44 43 43 43 45 1A         18 32 45 41 40 40 40 40 40 40	01 .05 .15 .5 .1 .5 .1 .5 .10 .30       Part No02         X Series         2 13 21 35 46 44 44 44 44 38 4A -         2 13 22 38 44 44 44 38 4A -         2 11 20 35 40 40 40 36       6A -         Y Series         8 21 31 49 44 40 40 40 40 2A -       2A -         11 24 36 43 40 40 40 40 40 36 4A -       2A -         5 18 28 45 40 40 40 40 36 4A -       2 Series         18 32 43 47 44 43 43 43 45 1A 7       1A 7         18 32 45 41 40 40 40 40 40 40 2A       2A 2	.01 .05 .15 .5 .5 .1 .5 .1 .5 .10 .30       Part No02 .03         X Series         2 13 21 35 46 44 44 44 38 4A         2 13 22 38 44 44 44 38 4A         2 11 20 35 40 40 40 36         Fart No02 .03         X Series         Y Series         8 21 31 49 44 40 40 40 40 2A 2A         11 24 36 43 40 40 40 40 36 4A         5 18 28 45 40 40 40 40 36 4A         Z Series         18 32 43 47 44 43 43 43 45 1A 7 29         18 32 45 41 40 40 40 40 40 2A 2 15	Not   Not	Note   Note	01 .05 .15 .5 .1 .5 .1 .5 .1 .5 .1 .5 .1 .1 .5 .1 .5 .1 .1 .5 .1 .5 .1 .1 .5 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1 .1	Not   Not	Note   Note	Note of the latter of the la	Note   Note