

# PEM Series

CHASSIS MOUNT, MULTI-STAGE EMI/RFI LINE FILTER



## FEATURES

The PEM series offers wide variety of high performance EMI filters in numerous packages. This series offers a variety of circuit types with multiple stages of filtration over a frequency range of 10KHz to 30MHz. These filters offer exceptional performance at higher frequencies.

## APPLICATIONS

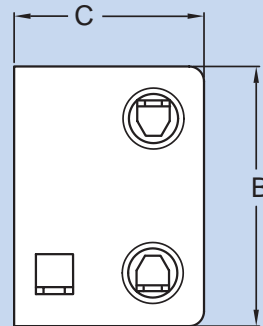
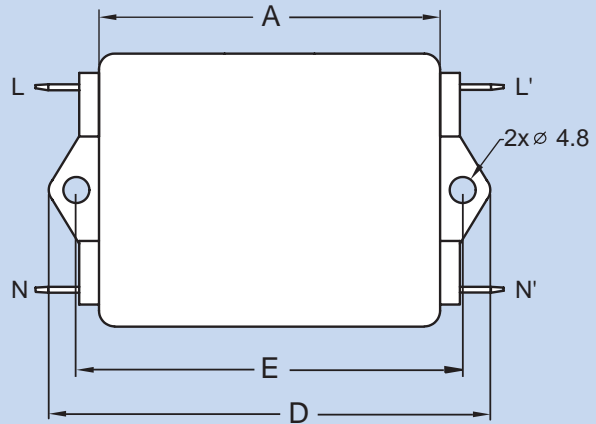
Computer & networking equipment, Measuring & control equipment, Data processing equipment, laboratory instruments, Switching power supplies, other electronic equipment.

## TECHNICAL DATA

- Rated Voltage: 115/250VAC
- Rated Current: 1A, 2A, 3A, 4A, 5A, 6A, 10A, 15A, 20A
- Power Line Frequency: 50/60Hz
- Max. Leakage Current each  
Line to Ground:
  - @ 115VAC 60Hz: 0.25mA
  - @ 250VAC 50Hz: 0.45mA
  - @ 115VAC 60Hz: 2 $\mu$ A\*
  - @ 250VAC 50Hz: 5 $\mu$ A\*
- Hipot Rating (one minute)
  - Line to Ground: 2250VDC
  - Line to Line: 1450VDC
- Temperature Range: -25C to +85C

\* Medical application

## MECHANICAL DIMENSIONS (Unit: mm)

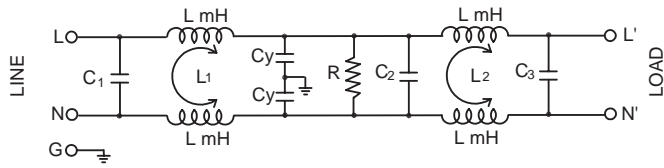


CASE CODE	DIMENSIONS					
	A	B	C	D	E	F
C1	51.5	48.3	29.2	70.4	60.5	20
C2	65.5	52.8	38.6	84.8	74.7	28.6
C3	100	86.4	38.6	119.8	110.7	28.4

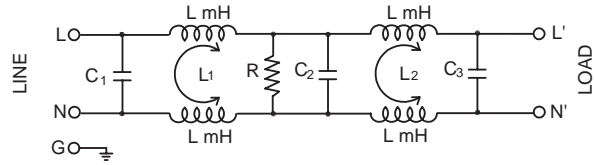
Specifications subject to change without notice. Dimensions (mm).

# PEM Series

## SCHEMATIC 1; CASE C1, C2



## SCHEMATIC 1M; CASE C1, C2



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	Cy (pF)	L1, 2 (mH x 2)
PEM01Q-1-AC1	1	2.2M	0.1	3300	3.7
PEM02Q-1-AC1	2				2.4
PEM03Q-1-AC1	3				1.8
PEM05Q-1-AC1	5				0.9
PEM06Q-1-AC1	6				0.7
PEM10Q-1-AC1	10				0.3
PEM03Q-1-AC2	3				1.7
PEM05Q-1-AC2	5				1.6
PEM10Q-1-AC2	10				1.0
PEM15Q-1-AC2	15				0.9
PEM20Q-1-AC2	20	0.5			
PEM04Q-1-BC2	4	330K	0.47	4700	12

### Component Table Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	L1, 2 (mH x 2)
PEM01Q-1M-AC1	1	2.2M	0.1	3.7
PEM02Q-1M-AC1	2			2.4
PEM03Q-1M-AC1	3			1.8
PEM05Q-1M-AC1	5			0.9
PEM06Q-1M-AC1	6			0.7
PEM10Q-1M-AC1	10			0.3
PEM03Q-1M-AC2	3			1.7
PEM05Q-1M-AC2	5			1.6
PEM10Q-1M-AC2	10			1.0
PEM15Q-1M-AC2	15			0.9
PEM20Q-1M-AC2	20	0.5		
PEM04Q-1M-BC2	4	330K	0.47	12

### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM01Q-1-AC1	33	74	92	69	58	45	3	76	122	82	64	30
PEM02Q-1-AC1	49	71	80	63	55	44	1	56	81	84	69	40
PEM03Q-1-AC1	42	63	76	65	57	44	5	63	99	77	62	31
PEM05Q-1-AC1	28	50	59	75	61	50	5	62	93	75	62	33
PEM06Q-1-AC1	24	44	53	88	62	49	7	44	81	69	57	35
PEM10Q-1-AC1	30	52	61	66	55	46	6	47	82	74	61	36
PEM03Q-1-AC2	38	60	71	65	57	46	6	66	97	77	63	31
PEM05Q-1-AC2	38	60	71	65	57	46	2	57	92	77	64	34
PEM10Q-1-AC2	34	61	71	66	58	48	4	51	86	77	64	37
PEM15Q-1-AC2	31	52	61	63	56	41	8	44	80	76	64	38
PEM20Q-1-AC2	17	43	54	65	56	39	13	22	69	70	59	39
PEM04Q-1-BC2	75	89	78	64	55	45	79	94	97	76	56	30

### Medical Applications

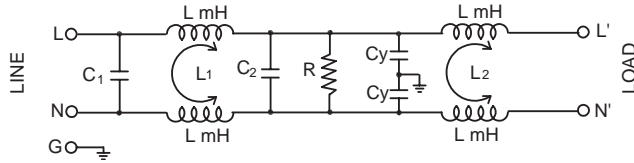
Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM01Q-1M-AC1	36	40	41	38	32	19	10	69	99	82	64	28
PEM02Q-1M-AC1	31	35	37	35	31	19	7	62	99	79	63	29
PEM03Q-1M-AC1	26	31	32	34	32	25	2	57	88	78	65	37
PEM05Q-1M-AC1	25	29	31	33	34	23	7	46	82	75	63	37
PEM06Q-1M-AC1	24	28	29	30	30	26	9	41	78	75	62	38
PEM10Q-1M-AC1	15	24	26	27	26	22	14	19	56	69	58	36
PEM03Q-1M-AC2	24	27	29	31	30	26	3	60	91	76	65	36
PEM05Q-1M-AC2	24	27	30	32	30	27	3	59	91	75	63	38
PEM10Q-1M-AC2	24	29	37	32	31	27	9	42	28	75	63	39
PEM15Q-1M-AC2	25	29	30	31	30	24	8	44	81	75	63	36
PEM20Q-1M-AC2	21	26	29	29	28	27	13	22	69	71	60	40
PEM04Q-1M-BC2	47	49	47	35	29	12	79	97	101	79	60	31

Replace "Q" with PS for screw terminals

# PEM Series

## SCHEMATIC 2; CASE C2



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1,2 (uF)	Cy (pF)	L1,2 (mH x 2)
PEM03Q-2-CC2	3	2.2M	0.33	3300	10

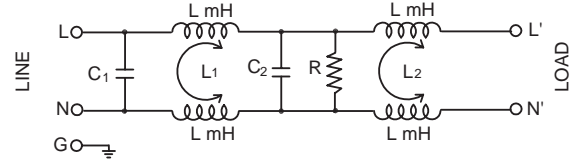
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-2-CC2	70	98	81	64	60	47	43	77	87	63	51	33

Replace "Q" with PS for screw terminals

## SCHEMATIC 2M; CASE C2



### Component Table Medical Applications

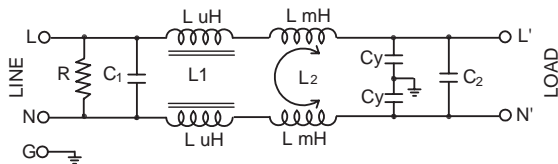
PDI P/N	Current Rating (A)	R (Ohms)	Cx 1,2 (uF)	L1,2 (mH x 2)
PEM03Q-2M-CC2	3	2.2M	0.33	10

### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-2M-CC2	43	47	49	37	35	33	46	84	87	63	51	35

## SCHEMATIC 3; CASE C1, C2, C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1,2 (uF)	Cy (pF)	L1 (uH x 2)	L2 (mH x 2)
PEM03Q-3-DC1	3	330K	0.22	4700	30	1.0
PEM06Q-3-DC2	6				70	1.7
PEM10Q-3-DC2	10				40	1.2
PEM03Q-3-DC3	3				30	1.0

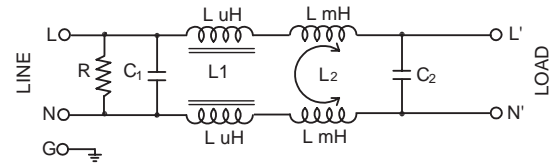
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-3-DC1	21	30	37	53	55	37	6	50	72	68	56	32
PEM06Q-3-DC2	25	32	39	55	56	35	24	61	83	70	68	33
PEM10Q-3-DC2	25	36	45	55	55	39	14	26	39	63	61	35
PEM03Q-3-DC3	21	30	37	54	59	41	7	50	71	66	56	31

Replace "Q" with PS for screw terminals

## SCHEMATIC 3M; CASE C1, C2, C3



### Component Table Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1,2 (uF)	L1 (uH x 2)	L2 (mH x 2)
PEM03Q-3M-DC1	3	330K	0.22	30	1.0
PEM06Q-3M-DC2	6			70	1.7
PEM10Q-3M-DC2	10			40	1.2
PEM03Q-3M-DC3	3			30	1.0

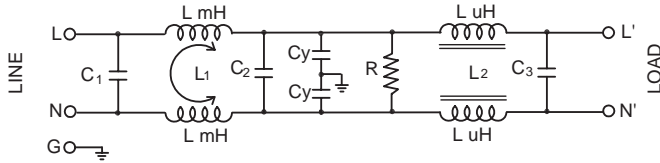
### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-3M-DC1	23	27	29	30	29	25	4	51	72	75	63	39
PEM06Q-3M-DC2	25	29	30	32	31	25	20	58	79	74	62	35
PEM10Q-3M-DC2	24	32	33	32	30	23	10	54	76	74	62	35
PEM03Q-3M-DC3	23	28	32	34	30	25	4	51	75	78	64	39

# PEM Series

## SCHEMATIC 4; CASE C1, C2, C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	Cy (pF)	L1 (mH x 2)	L2 (uH x 2)
PEM03Q-4-DC1	3	330K	0.22	4700	1.0	30
PEM06Q-4-DC2	6				1.7	70
PEM10Q-4-DC2	10				1.2	40
PEM03Q-4-DC3	3				1.0	30

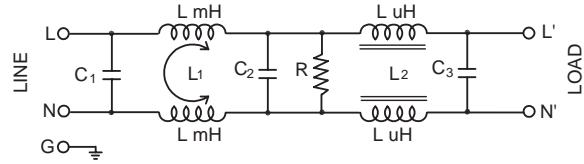
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz					Diff. mode(L-L) MHz						
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-4-DC1	8	69	92	66	54	31	27	45	54	81	61	49
PEM06Q-4-DC2	38	62	74	67	58	58	13	72	106	74	61	36
PEM10Q-4-DC2	34	61	71	66	58	48	4	51	86	77	64	37
PEM03Q-4-DC3	26	45	54	78	60	50	8	69	92	66	54	31

Replace "Q" with PS for screw terminals

## SCHEMATIC 4M; CASE C1, C2, C3



### Component Table Medical Applications

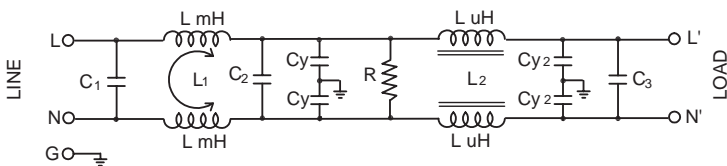
PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	L1 (mH x 2)	L2 (uH x 2)
PEM03Q-4M-DC1	3	330K	0.22	1.0	30
PEM06Q-4M-DC2	6			1.7	70
PEM10Q-4M-DC2	10			1.2	40
PEM03Q-4M-DC3	3			1.0	30

### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz					Diff. mode(L-L) MHz						
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-4M-DC1	23	28	30	31	29	24	5	60	93	71	60	34
PEM06Q-4M-DC2	25	29	30	31	30	25	21	74	99	75	63	38
PEM10Q-4M-DC2	25	32	33	32	29	23	15	63	89	74	62	33
PEM03Q-4M-DC3	23	28	36	33	30	24	7	61	88	75	68	34

## SCHEMATIC 5; CASE C1, C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	Cy (pF)	L1 (mH x 2)	L2 (uH x 2)
PEM03Q-5-DC1	3	330K	0.22	4700	1.0	30
PEM20Q-5-DC3	20	330K	0.22	4700	1.0	30

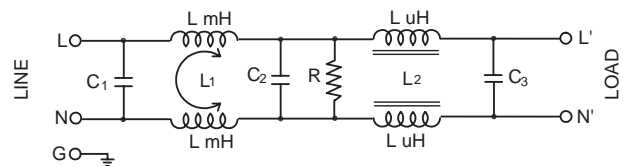
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz					Diff. mode(L-L) MHz						
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-5-DC1	27	50	64	69	61	43	9	70	95	65	50	25
PEM20Q-5-DC3	27	50	64	69	61	43	9	70	100	68	53	24

Replace "Q" with PS for screw terminals

## SCHEMATIC 5M; CASE C1, C3



### Component Table Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1, 2, 3 (uF)	L1 (mH x 2)	L2 (uH x 2)
PEM03Q-5M-DC1	3	330K	0.22	1.0	30
PEM20Q-5M-DC3	20	330K	0.22	1.0	30

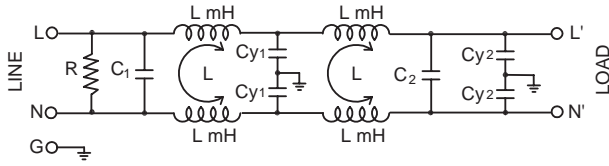
### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz					Diff. mode(L-L) MHz						
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM03Q-5M-DC1	22	28	30	31	30	25	5	59	103	75	62	37
PEM20Q-5M-DC3	22	28	30	31	31	24	6	59	98	75	64	38

# PEM Series

## SCHEMATIC 6; CASE C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	Cx 1 (uF)	Cx 2 (uF)	Cy 1 (pF)	Cy 2 (pF)	L1 (mHx2)	L2 (mHx2)
PEM06Q-6-EC3	6	2.2M	0.68	0.47	4700	2200	0.8	2.8

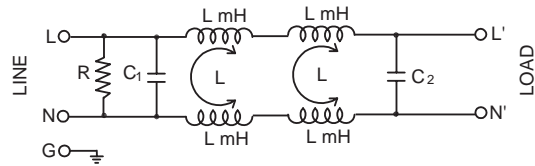
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM06Q-6-EC3	27	50	64	69	61	43	9	70	95	65	50	25

Replace "Q" with PS for screw terminals

## SCHEMATIC 6M; CASE C3



### Component Table Medical Applications

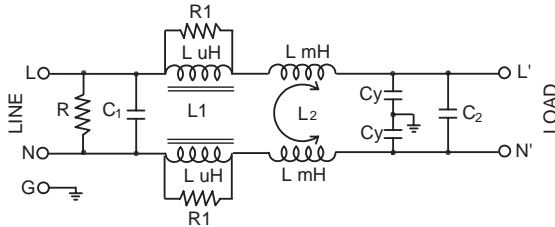
PDI P/N	Current Rating (A)	R (Ohms)	Cx 1 (uF)	Cx 2 (uF)	L1 (mHx2)	L2 (mHx2)
PEM06Q-6M-EC3	6	2.2M	0.68	0.47	0.8	2.8

### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM06Q-6M-EC3	28	32	34	33	31	24	46	82	96	74	61	33

## SCHEMATIC 7; CASE C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	R1 (Ohms)	Cx 1 (uF)	Cx 2 (uF)	Cy 1,2 (pF)	L1 (uHx2)	L2 (mHx2)
PEM20Q-7-FC3	20	330K	330	0.47	0.22	4700	30	0.9

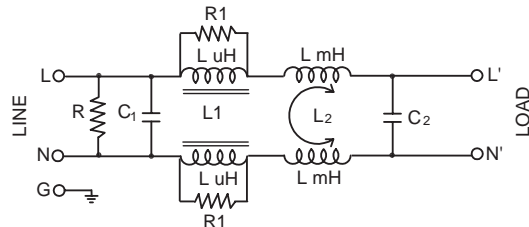
### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM20Q-7-FC3	22	30	36	52	52	35	21	62	87	69	58	35

Replace "Q" with PS for screw terminals

## SCHEMATIC 7M; CASE C3



### Component Table Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	R1 (Ohms)	Cx 1 (uF)	Cx 2 (uF)	L1 (uHx2)	L2 (mHx2)
PEM20Q-7M-FC3	20	330K	330	0.47	0.22	30	0.9

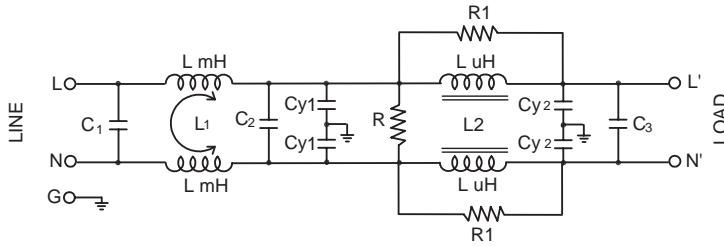
### Medical Applications

Insertion loss in dB (50 Ohm circuit)

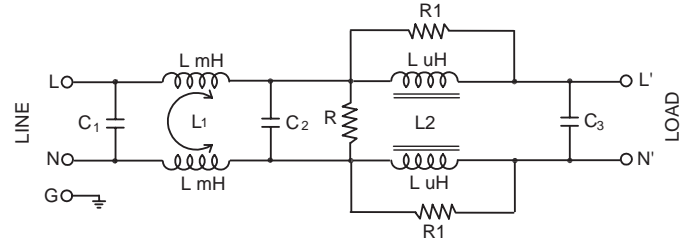
PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM20Q-7M-FC3	22	28	30	31	29	24	16	59	81	73	62	37

# PEM Series

## SCHEMATIC 8; CASE C3



## SCHEMATIC 8M; CASE C3



### Component Table Non-Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	R1 (Ohms)	Cx 1, 2 (uF)	Cx 3 (uF)	Cy 1, 2 (pF)	L1 (mH x 2)	L2 (uH x 2)
PEM20Q-8-GC3	20	330K	300	0.22	0.47	4700	1.7	30

### Component Table Medical Applications

PDI P/N	Current Rating (A)	R (Ohms)	R1 (Ohms)	Cx 1, 2 (uF)	Cx 3 (uF)	L1 (mH x 2)	L2 (uH x 2)
PEM20Q-8M-GC3	20	330K	300	0.22	0.47	1.7	30

### Non-Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM20Q-8-GC3	38	58	71	63	56	49	45	79	88	62	50	29

### Medical Applications

Insertion loss in dB (50 Ohm circuit)

PDI P/N	Comm. Mode(L-G) MHz						Diff. mode(L-L) MHz					
	.15	.5	1	5	10	30	.15	.5	1	5	10	30
PEM20Q-8M-GC3	23	28	30	31	29	23	27	75	94	71	59	34

Replace "Q" with PS for screw terminals