



Electronics

RFI Power Line Filters for DC Applications

# DC Series



UL Recognized  
CSA Certified  
TUV Approved

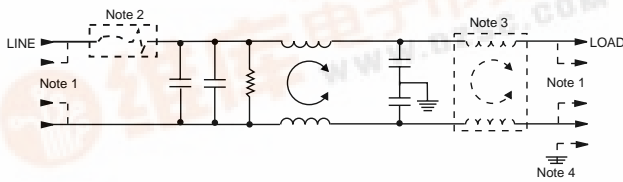
## DC Series

The DC series filters were designed as general purpose line filters for DC applications. They are available with or without circuit breakers for extra protection. They are available with feed-through capacitors for added high frequency performance. The DC series is designed to comply with UL 1283, CSA 22.2 No. 8 and EN60950.

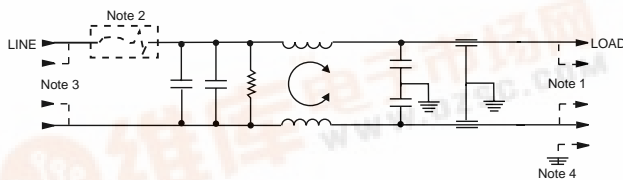
The DC series was developed in response to the increasing demand for DC filtering in the telecom-datacom market. These filters are generally used in central office equipment like switches, routers, and hubs to clean up the 48 VDC power, but are not exclusive to that equipment. They can also be used at the primary input of the DC power supply.

## Electrical Schematics

### Standard Performance Version



### High Frequency Performance Version



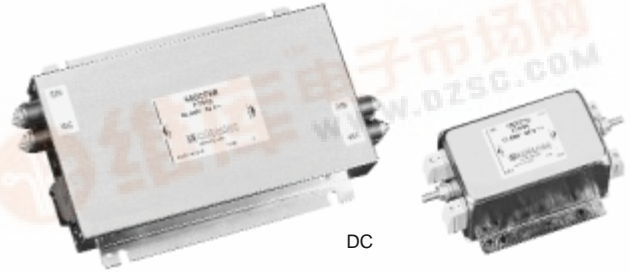
Resistor location for reference only.

**Note 1:** Depicts redundant style 6 terminals.

**Note 2:** Depicts optional circuit breaker.

**Note 3:** For 100 & 125A versions delete second coil.

**Note 4:** Depicts style 10 terminal versions which have separate ground stud.



## Specifications

### Hipot rating (one minute):

line-to-ground	2250 VDC
line-to-line	1450 VDC

### Operating Voltage (max):

80 VDC

### Operating Ambient Temperature Range:

(@ rated current  $I_r$ ) -10°C to +55°C

In an ambient,  $T_a$ , higher than +55°C, the maximum operating current,  $I_o$ , is as follows:  $I_o = I_r \sqrt{\frac{85 - T_a}{30}}$

### Minimum insertion loss in dB:

#### Standard Performance

Line-to-ground in 50 ohm circuit

Current Rating	Frequency-MHz									
	.01	.05	.1	.15	.5	1	3	5	10	30
15A	-	1	12	20	41	45	61	63	47	39
30A	-	4	15	23	47	59	64	56	44	36
60A	-	-	9	17	38	40	59	50	39	34
100A	-	-	10	18	38	39	53	50	35	21
125A	-	-	12	18	30	32	44	49	29	18

Line-to-line in 50 ohm circuit

Current Rating	Frequency-MHz									
	.01	.05	.1	.15	.5	1	3	5	10	30
15A	7	22	27	30	30	36	56	49	38	31
30A	7	22	28	31	32	59	56	51	41	28
60A	15	30	36	40	40	35	60	51	39	32
100A	14	29	35	39	33	30	53	53	41	30
125A	14	24	35	39	40	28	53	60	42	33

### High Frequency Performance ("F" & "BF" Styles)

Line-to-ground in 50 ohm circuit

Current Rating	Frequency-MHz									50	300	
	.01	.05	.1	.15	.5	1	3	5	10	20	300	3000
15A	-	1	12	20	41	45	55	50	45	25	50	30
30A	-	4	15	20	46	58	60	60	48	35	50	30
60A	-	-	9	16	38	42	52	60	48	26	40	30
100A	-	-	9	16	38	42	52	60	42	26	40	30
125A	-	-	9	16	28	34	46	54	34	34	40	30

Line-to-line in 50 ohm circuit

Current Rating	Frequency-MHz									
	.01	.05	.1	.15	.5	1	3	5	10	20
15A	7	22	27	30	30	50	60	60	60	36
30A	7	22	27	30	33	56	60	60	60	40
60A	15	30	36	40	37	26	46	54	48	30
100A	14	29	35	39	33	30	56	53	41	30
125A	14	29	35	39	40	28	53	60	42	33



# DC Series

## Cutout Dimensions

Part Number	A	B	C	D	E	F	Fig.
	$\pm.005$ $\pm.13$	$\pm.005$ $\pm.13$	$\pm.005$ $\pm.13$	$\pm.005$ $\pm.13$	$\pm.005$ $\pm.13$	$\pm.005$ $\pm.13$	
15DCB6(F)	1.375 34.93	1.249 31.72	3.472 88.19	—	—	—	1
15DCB6B(F)	1.500	0.781	1.308	3.472	1.375	1.249	2
15DCF6B	38.10	19.84	33.22	88.19	34.93	31.72	
15DCB10(F)	1.250 31.75	1.000 25.40	3.472 88.19	—	—	—	1
15DCB10B(F)	1.500	0.781	1.308	3.472	1.250	1.000	2
15DCF10B	38.10	19.84	33.22	88.19	31.75	25.40	
30DCB6(F)	1.375 34.93	1.249 31.72	3.472 88.19	—	—	—	1
30DCB6B(F)	1.500	0.781	1.308	3.472	1.375	1.249	2
30DCF6B	38.10	19.84	33.22	88.19	34.93	31.72	
30DCB10(F)	1.250 31.75	1.000 25.40	3.472 88.19	—	—	—	1
30DCB10B(F)	1.500	0.781	1.308	3.472	1.250	1.000	2
30DCF10B	38.10	19.84	33.22	88.19	31.75	25.40	
60DCB6(F)	1.375 34.93	1.249 31.72	3.472 88.19	—	—	—	1
60DCB6B(F)	1.500	0.781	1.308	3.472	1.375	1.249	2
60DCF6B	38.10	19.84	33.22	88.19	34.93	31.72	
60DCB10(F)	1.674 42.52	1.010 25.65	3.443 87.45	—	—	—	1
60DCB10B(F)	1.500	0.781	1.308	3.443	1.674	1.010	2
60DCF10B	38.10	19.84	33.22	87.45	42.52	25.65	
100DCB6(F)	1.700 43.18	1.549 39.34	3.472 88.19	—	—	—	1
100DCB6B(F)	1.700	1.549	4.222	—	—	—	3
100DCB10(F)	1.954 49.63	1.500 38.10	2.803 71.20	—	—	—	1
100DCB10B(F)	1.954	1.500	4.295	—	—	—	3
100DCF6B	1.700	1.549	4.222	—	—	—	3
100DCF10B	1.954	1.500	4.295	—	—	—	3
125DCB6(F)	1.700 43.18	1.549 39.34	3.472 88.19	—	—	—	1
125DCB6B(F)	1.700	1.549	4.222	—	—	—	3
125DCB10(F)	2.250 57.15	1.590 40.39	2.725 69.22	—	—	—	1
125DCB10B(F)	2.250	1.590	4.147	—	—	—	3
125DCF6B	1.700	1.549	4.222	—	—	—	3
125DCF10B	2.250	1.590	2.725	—	—	—	3

## Recommended Panel Cutouts

Fig. 1 (Viewed from filter side)

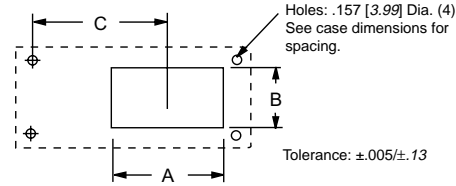


Fig. 2 (Viewed from filter side)

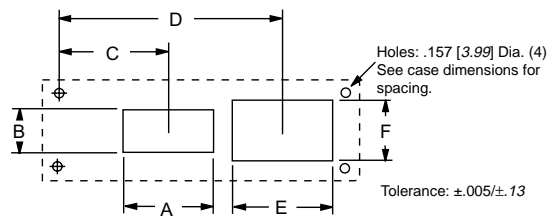
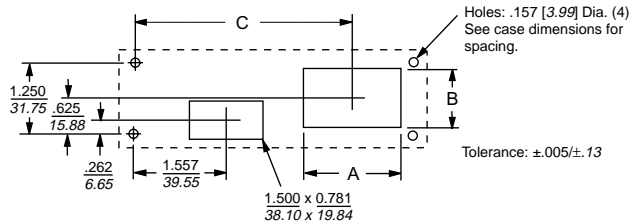
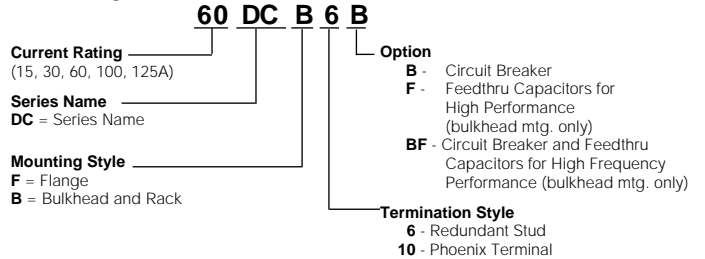


Fig.3 (Viewed from filter side)



## Ordering Information



## Part Numbers

Standard Performance		High Performance	
15DCF6	15DCB6B	15DCB10	15DCB10F
30DCF6	30DCB6B	30DCB10	30DCB10F
60DCF6	60DCB6B	60DCB10	60DCB10F
100DCF6	100DCB6B	100DCB10	100DCB10F
125DCF6	125DCB6B	125DCB10	125DCB10F
15DCF6B	15DCF10	15DCB10B	15DCB6BF
30DCF6B	30DCF10	30DCB10B	30DCB6BF
60DCF6B	60DCF10	60DCB10B	60DCB6BF
100DCF6B	100DCF10	100DCB10B	100DCB6BF
125DCF6B	125DCF10	125DCB10B	125DCB6BF
15DCB6	15DCF10B		15DCB10BF
30DCB6	30DCF10B		30DCB10BF
60DCB6	60DCF10B		60DCB10BF
100DCB6	100DCF10B		100DCB10BF
125DCB6	125DCF10B		125DCB10BF

# DC Series

## Terminations

### Style 6 (15, 30 & 60A)

Supplied with #10-32 redundant studs - 0.625 [15.88] spacing like polarity, 0.750 [19.05] spacing opposing polarity.  
Torque Spec: 27±3 in-lb.

### Style 10 (15 & 30A)

PHOENIX CONTACT  
P/N VDFK4  
Accepts 12 AWG stranded wire  
Wire Strip Length: 0.315 [8.0]  
Torque Spec: 5.5 - 7.0 in-lb.  
Ground Stud 8-32

### Style 10 (100A)

PHOENIX CONTACT  
P/N HDFK 25-VP  
Accepts 4 AWG stranded wire  
Wire Strip Length: 0.748 [19.0]  
Torque Spec: 35.4 - 39.9 in-lb.  
Ground Stud 1/4 - 20

### Style 6 (100 & 125A)

Supplied with 1/4-20 redundant studs - 0.750 [19.05] spacing like polarity, 1.000 [25.4] spacing opposing polarity.  
Torque Spec: 56±2 in-lb.

### Style 10 (60A)

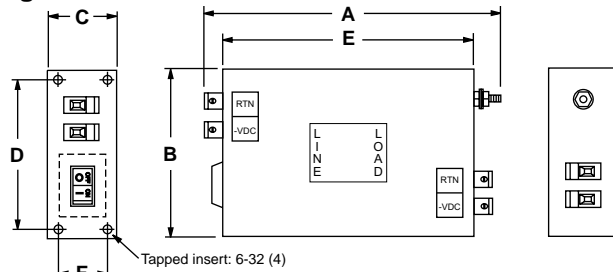
PHOENIX CONTACT  
P/N HDFK 16-VP  
Accepts 6 AWG stranded wire  
Wire Strip Length: 0.630 [16.0]  
Torque Spec: 17.7 - 21.2 in-lb.  
Ground Stud 10-32

### Style 10 (125A)

PHOENIX CONTACT  
P/N HDFK-50-VP  
Accepts 1 AWG stranded wire  
Wire Strip Length: 0.945 [24.0]  
Torque Spec: 35.4 - 39.9 in-lb.  
Ground Stud 1/4 - 20

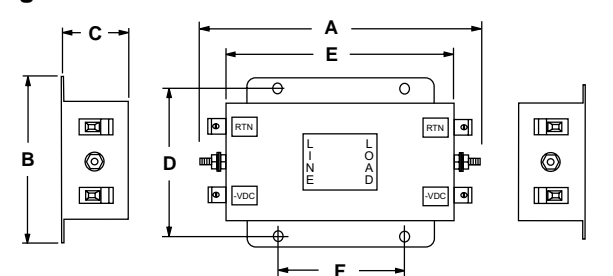
## Case Styles

Figure 4



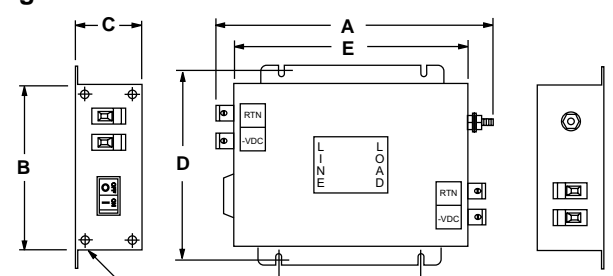
Note: Delete circuit breaker for DCB10 models.

Figure 5



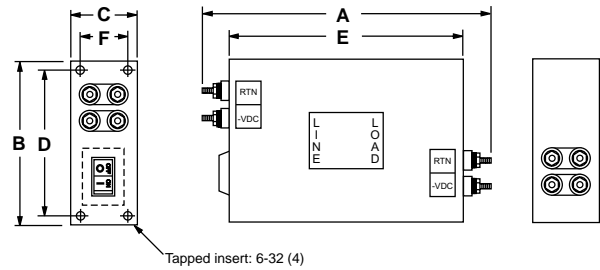
Typical dimensions:  
Mounting Holes: .156 x .203 [4.0 x 5.2] Dia. (4)

Figure 6



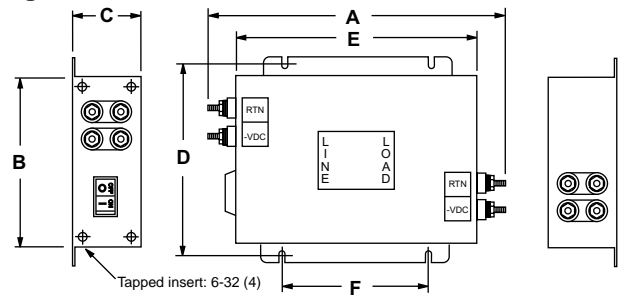
Typical dimensions:  
Mounting Slots: .260 x .39 [6.6 x 9.9] (4)

Figure 7



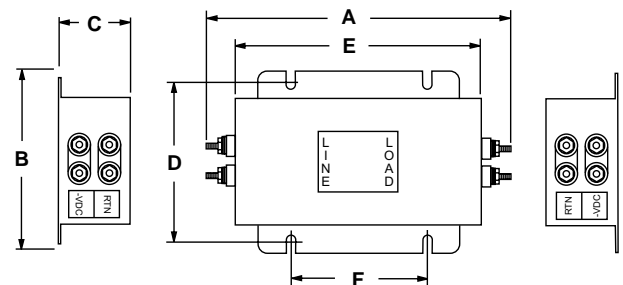
Note: Delete circuit breaker for DCB6 models.

Figure 8



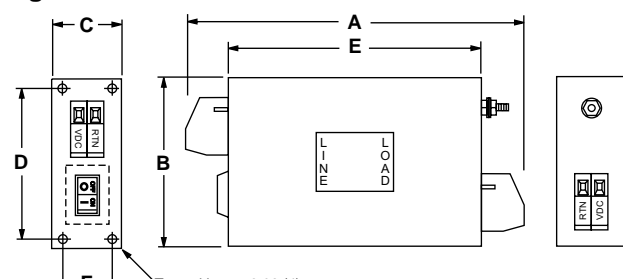
Typical dimensions:  
Mounting Slots: .260 x .39 [6.6 x 9.9] (4)

Figure 9



Typical dimensions:  
Mounting Slots: .260 x .39 [6.6 x 9.9] (4)  
Mounting Holes: .203 x .156 [5.2 x 4.0] (4)  
Note: 15A & 30A versions come with mounting holes in place of mounting slots.

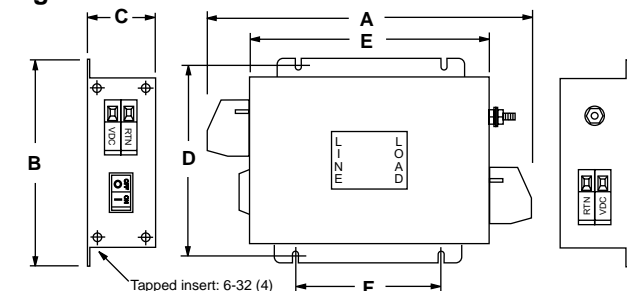
Figure 10



Note: Delete circuit breaker for DCB10 models

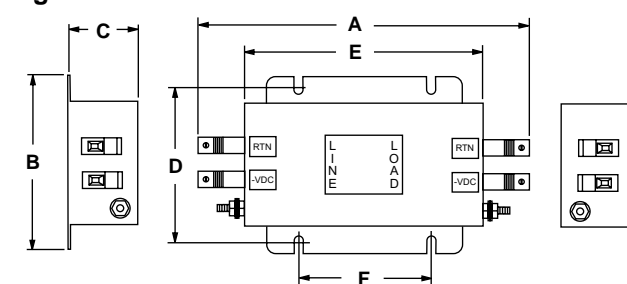
# DC Series

Figure 11



Typical dimensions:  
Mounting Slots: .260 x .39 [6.6 x 9.9] (4)

Figure 12



Typical dimensions:  
Mounting Slots: .260 x .39 [6.6 x 9.9] (4)

## Case Dimensions

Part Number	A (max)	B (max)	C (max)	D $\pm 0.020$ $\pm .51$	E (max)	F $\pm 0.020$ $\pm .51$	Fig.
15DCB6(F)	5.69	5.06	1.48	4.50	4.06	0.950	7
	144.5	128.5	37.6	114.30	103.1	24.13	
15DCB6B(F)	7.69	5.06	1.48	4.50	6.06	0.950	7
	195.3	128.5	37.6	114.30	153.9	24.13	
15DCB10(F)	5.06	5.06	1.48	4.50	4.06	0.950	4
	128.5	128.5	37.6	114.30	103.1	24.13	
15DCB10B(F)	7.06	5.06	1.48	4.50	6.06	0.950	4
	179.3	128.5	37.6	114.30	153.9	24.13	
15DCF6	5.33	3.10	1.78	2.677	3.70	2.000	9
	135.4	78.7	45.2	68.00	94.0	50.80	
15DCF6B(F)	7.69	5.06	1.48	5.740	6.06	3.520	8
	195.3	128.5	37.6	145.80	153.9	89.41	
15DCF10	4.75	3.10	1.78	2.677	3.70	2.000	5
	120.7	78.7	45.2	68.0	94.0	50.80	
15DCF10B(F)	7.06	5.06	1.48	5.740	6.06	3.520	6
	179.3	128.5	37.6	145.80	153.9	89.41	
30DCB6(F)	7.69	5.06	1.48	4.50	6.06	0.950	7
	195.3	128.5	37.6	114.30	153.9	24.13	
30DCB6B(F)	8.69	5.06	1.48	4.50	7.06	0.950	7
	220.7	128.5	37.6	114.30	179.3	24.13	
30DCB10(F)	7.06	5.06	1.48	4.50	6.06	0.950	4
	179.3	128.5	37.6	114.30	153.9	24.13	
30DCB10B(F)	8.06	5.06	1.48	4.50	7.06	0.950	4
	204.7	128.5	37.6	114.30	179.3	24.13	
30DCF6	6.19	3.96	2.18	3.500	4.56	2.000	9
	157.2	100.6	55.4	88.90	115.8	50.80	

## Case Dimensions (cont'd)

Part Number	A (max)	B (max)	C (max)	D $\pm 0.020$ $\pm .51$	E (max)	F $\pm 0.020$ $\pm .51$	Fig.
30DCF6B	8.690	5.000	1.480	5.740	7.060	4.520	8
	220.73	127.00	37.6	145.80	179.3	114.81	
30DCF10	5.560	3.960	2.180	3.500	4.560	2.000	5
	141.2	100.58	55.4	88.90	115.8	50.80	
30DCF10B	8.060	5.060	1.480	5.740	7.060	4.520	6
	204.7	128.52	37.6	145.80	179.3	114.81	
60DCB6(F)	8.690	5.060	1.480	4.500	7.060	0.950	7
	220.73	128.52	37.6	114.30	179.3	24.13	
60DCB6B(F)	10.690	5.060	1.480	4.500	9.060	0.950	7
	271.5	128.52	37.6	114.30	230.1	24.13	
60DCB10(F)	9.750	5.060	1.480	4.500	7.060	0.950	10
	247.7	128.52	37.6	114.30	179.3	24.13	
60DCB10B(F)	11.750	5.060	1.480	4.500	9.060	0.950	10
	298.5	128.52	37.6	114.30	230.1	24.13	
60DCF6	7.560	5.480	2.550	4.920	5.940	2.756	9
	192.0	139.2	64.8	124.97	150.9	70.00	
60DCF6B	10.690	5.060	1.480	5.740	9.060	6.520	8
	271.5	128.52	37.6	145.80	230.1	165.61	
60DCF10	8.560	5.480	2.550	4.920	5.940	2.576	12
	217.4	139.2	64.8	124.97	150.9	65.43	
60DCF10B	11.750	5.060	1.480	5.740	9.060	6.520	11
	298.5	128.5	37.6	145.80	230.1	165.61	
100DCB6(F)	10.310	5.060	1.780	4.500	8.060	1.250	7
	261.9	128.5	45.2	114.30	204.7	31.75	
100DCB6B(F)	12.310	6.060	1.780	5.500	10.060	1.250	7
	312.7	153.9	45.2	139.7	255.5	31.75	
100DCB10(F)	11.130	5.060	1.780	4.500	8.060	1.250	10
	282.6	128.5	45.2	114.30	204.7	31.75	
100DCB10B(F)	13.130	6.060	1.780	5.500	10.060	1.250	10
	333.5	153.9	45.2	139.7	255.5	31.75	
100DCF6	10.600	6.300	2.520	5.700	8.460	4.520	9
	269.2	160.0	64.0	144.78	214.9	114.81	
100DCF6B	12.310	6.060	1.780	6.740	10.060	7.520	8
	312.7	153.9	45.2	171.2	255.5	191.01	
100DCF10	11.500	6.300	2.520	5.700	8.460	4.520	12
	292.1	160.0	64.0	144.78	214.9	114.81	
100DCF10B	13.130	6.060	1.780	6.740	10.060	7.520	11
	333.5	153.9	45.2	171.2	255.5	191.01	
125DCB6(F)	10.310	5.060	1.780	4.500	8.060	1.250	7
	261.9	128.5	45.2	114.30	204.7	31.75	
125DCB6B(F)	12.310	6.060	1.780	5.500	10.060	1.250	7
	312.7	153.9	45.2	139.7	255.5	31.75	
125DCB10(F)	11.500	5.060	1.780	4.500	8.060	1.250	10
	292.1	128.5	45.2	114.30	204.7	31.75	
125DCB10B(F)	13.500	6.060	1.780	5.500	10.060	1.250	10
	342.9	153.9	45.2	139.7	255.5	31.75	
125DCF6	10.600	6.300	2.520	5.700	8.460	4.520	9
	269.2	160.0	64.0	144.78	214.9	114.81	
125DCF6B	12.310	6.060	1.780	6.740	10.060	7.520	8
	312.7	153.9	45.2	171.2	255.5	191.01	
125DCF10	11.860	6.300	2.520	5.700	8.460	4.520	12
	301.2	160.0	64.0	144.78	214.9	114.81	
125DCF10B	13.500	6.060	1.780	6.740	10.060	7.520	11
	342.9	153.9	45.2	171.2	255.5	191.01	

DC Filters