Catalog: 1654001 Issue Date: 06.2011

#### DC Feedthrough Filters - Class Y4

## **FFD Series**



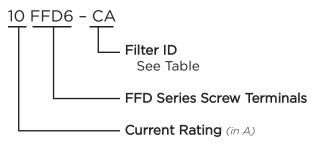
Component Recognized by UL to US and Canadian Requirements



#### **FFD Series**

- DC feedthrough filters
- Current ratings from 10 to 200A
- Designed to meet the very stringent safety requirements of EN133200 class Y4 including the 2500V pulse test
- Custom versions available

## **Ordering Information**



## Filter Options / Specifications

Filter ID	Value (nF)	Inductance	DC Resistance
Filter ID	Value (nF)	(nH)	(m $\Omega$ ) Max.
CA	2 x 10	70	6
HB	2 x 100	80	3
HE	2 x 100	140	8
NC	2 x 470	90	2
ND	2 x 470	120	1
NH	2 x 470	180	3
PK	2 x 1000	240	2
RP	2 x 4700	330	2

## **Specifications**

Rated Voltage (max): 130 VDC
Rated Current: 10 to 200A
Test Voltage (two seconds): 2500 VDC
Capacitor Class (EN133200): Designed to meet Y4
Pulse Test (EN133200): 2500V Peak

Insulation Resistance (within 1 minute):

For C < 0.33 $\mu$ F, R> 15000M $\Omega$  For C > 0.33 $\mu$ F, RC(M $\Omega^*\mu$ F)>5000s

Operating Ambient Temperature Range (at rated current I<sub>r</sub>):

10 to 100A: -40°C to +60°C 200A: -40°C to +50°C

Category Temperature Range: -40°C to +85°C

**Current Derating Above Ambient:** 

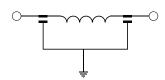
10-100A: For temperature,  $\theta$  I<sub> $\theta$ </sub> = IR  $\sqrt{(85-\theta)/25}$  200A: For temperature,  $\theta$  I<sub> $\theta$ </sub> = IR  $\sqrt{(85-\theta)/35}$ 

Climatic Category: 40/85/21

MTBF: > 5 million hours typical Insulating Materials Flammability Rating: UL94V-0

Case & Terminal Material: Nickel Plated Brass

#### **Electrical Schematic**





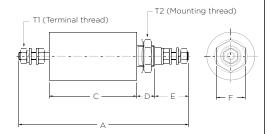
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## DC Feedthrough Filters - Class Y4 (continued)

# **FFD Series**

## **Case Style**





#### T1 - Terminal Thread

Part No.	Thread	Torque max. in.lb.
10FFD6-CA/HE	M3	4
16FFD6-CA/HE 32FFD6-CA/HE	M4	11
63FFD6-HB/NH	M6	22
100FFD6-NC/PK	M8	44
200FFD6-ND/RP	M10	70

## **T2 - Mounting Thread**

Part No.	Thread	Torque max. in.lb.
10FFD6-CA/HE 16FFD6-CA/HE 32FFD6-CA/HE	M12 x 1	35
63FFD6-HB/NH	M20 x 1	89
100FFD6-NC/PK	M24 x 1	124
200FFD6-ND/RP	M27 x 1.5	142

## **Case Dimensions**

	Α	В	С	D	Ε	F
Part No.	± .04 1	± .02 0.5	± .08 2	± .04 1	± .08 2	(max)
10FFD6-CA	<b>3.54</b> 90	<b>0.79</b> 20	<b>1.93</b> 49	<b>0.47</b> 12	<b>0.63</b> 16	<b>0.67</b> 17
16FFD6-CA 32FFD6-CA	<b>3.86</b> 98	<b>0.79</b> 20	<b>2.09</b> 53	<b>0.47</b> 12	<b>0.71</b> 18	<b>0.67</b> 17
63FFD6-HB	<b>6.30</b> 160	<b>0.98</b> 25	<b>3.70</b> 94	<b>0.55</b> 14	<b>1.02</b> 26	<b>0.87</b> 22
100FFD6-NC	<b>7.24</b> 184	<b>1.26</b> 32	<b>4.09</b> 104	<b>0.63</b> 16	<b>1.26</b> 32	<b>1.06</b> 27
200FFD6-ND	<b>8.23</b> 209	<b>1.50</b> 38	<b>4.41</b> 112	<b>0.75</b> 19	<b>1.57</b> 40	<b>1.06</b> 27
10FFD6-HE	<b>5.12</b> 130	<b>0.79</b> 20	<b>3.50</b> 89	<b>0.47</b> 12	<b>0.63</b> 16	<b>0.67</b> 17
16FFD6-HE 32FFD6-HE	<b>5.47</b> 139	<b>0.79</b> 20	<b>3.70</b> 94	<b>0.47</b> 12	<b>0.71</b> 18	<b>0.67</b> 17
63FFD6-NH	<b>6.81</b> <i>173</i>	<b>1.26</b> 32	<b>4.13</b> 105	<b>0.63</b> 16	<b>1.02</b> 26	<b>1.06</b> 27
100FFD6-PK	<b>8.98</b> <i>173</i>	<b>1.50</b> 32	<b>5.71</b> 105	<b>0.75</b> 16	<b>1.26</b> 26	<b>1.06</b> 27
200FFD6-RP	<b>10.98</b> 279	<b>2.13</b> 54	<b>7.17</b> 182	<b>0.75</b> 19	<b>1.57</b> 40	<b>1.57</b> 40

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## 13306

# **FFD Series**

## **Available Part Numbers**

Standard Performance	High Performance		
10FFD6-CA	10FFD6-HE		
16FFD6-CA	16FFD6-HE		
32FFD6-CA	32FFD6-HE		
63FFD6-HB	63FFD6-NH		
100FFD6-NC	100FFD6-PK		
200FFD6-ND	200FFD6-RP		

## **Performance Data**

 $\textbf{Typical Insertion Loss} - \mathsf{Line} \ \mathsf{to} \ \mathsf{Ground in} \ \mathsf{50} \ \mathsf{Ohm} \ \mathsf{circuit}$ 

Filter	Frequency – MHz							
ID	0.01	0.03	0.1	0.3	1	10	100	1000
CA	-	-	2	4	10	23	65	100
HB	2	4	10	18	27	62	95	100
HE	2	4	10	18	27	67	95	100
NC	7	14	23	30	32	70	100	100
ND	7	14	23	30	32	70	100	100
NH	7	14	23	31	35	75	100	100
PK	14	21	30	34	53	75	100	100
RP	20	32	40	52	85	100	100	100