

AC Feedthrough Filters - Class Y2

# FFA Series



Component Recognized by  
UL to US and Canadian Requirements

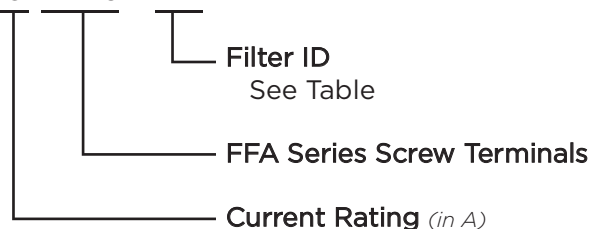


## FFA Series

- AC feedthrough filters
- Current Ratings from 10 to 300A
- Designed to meet the very stringent safety requirements of EN133200 class Y2 including the 5000V pulse test
- Custom versions available

## Ordering Information

10 FFA6 - BA



## Filter Options / Specifications

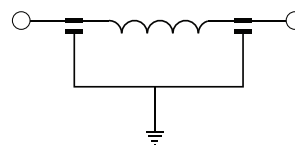
Filter ID	Value (nF)	Inductance (nH)	Max. Leakage Current (mA)*	DC Resistance (mΩ) Max.
BA	2 x 4.7	70	0.9	6
CA	2 x 10	70	1.9	4
CE	2 x 10	140	1.9	7
DG	2 x 22	170	4.2	4
DH	2 x 22	180	4.2	4
GB	2 x 47	80	8.9	3
GJ	2 x 47	210	8.9	9
HC	2 x 100	90	19	2
HD	2 x 100	120	19	1
HF	2 x 100	160	19	< 1
HN	2 x 100	250	19	6
JK	2 x 150	240	29	3
NP	2 x 470	330**	89	< 2
PP	2 x 1000	330	188	< 2

\*@ 250 VAC 60 Hz  
\*\*240 for 100A Version

## Specifications

- Rated Voltage (max):** 250 VAC
- Operating Frequency:** 50/60 Hz
- Rated Current:** 10 to 300A
- Test Voltage (two seconds):** 5000 VDC
- Capacitor Class (EN133200):** Designed to meet Y2
- Pulse Test (EN133200):** 5000V Peak
- Insulation Resistance (within 1 minute):**  
For C < 0.33μF, R > 15000MΩ  
For C > 0.33μF, RC(MΩ\*μF) > 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  
250 & 300A: -40°C to +40°C
- Category Temperature Range:** -40°C to +85°C
- Current Derating Above Ambient:**  
10-100A: For temperature, θ I<sub>θ</sub> = IR √(85-θ)/25  
200A: For temperature, θ I<sub>θ</sub> = IR √(85-θ)/35  
250 & 300A: For temp., θ I<sub>θ</sub> = IR √(85-θ)/45
- Climatic Category:** 40/85/21
- MTBF:** > 5 million hours typical
- Insulating Materials Flammability Rating:** UL94V-0
- Case & Terminal Material:** Nickel Plated Brass

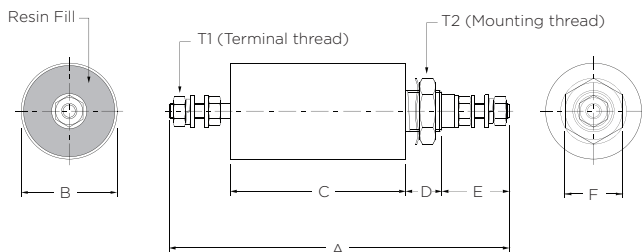
## Electrical Schematic



**AC Feedthrough Filters - Class Y2** (continued)

# FFA Series

## Case Style



### T1 - Terminal Thread

Part No.	Thread	Torque max. in.lb.
10FFA6-BA/CE/CJ	M3	4
16FFA6-CA/DG/HN	M4	11
32FFA6-CA/DH/HN		
63FFA6-GB/JK/NP	M6	22
100FFA6-HC/NP/PP	M8	44
200FFA6-HD/NP/PP	M10	70
250FFA6-HF/NP/PP	M12	97
300FFA6-HF/NP/PP	M16	177

### T2 - Mounting Thread

Part No.	Thread	Torque max. in.lb.
10FFA6-BA/CE/CJ		
16FFA6-CA	M12 x 1	35
32FFA6-CA		
16FFA6-DG/HN		
32FFA6-DH/HN	M16 x 1	62
63FFA6-GB		
63FFA6-JK		
100FFA6-HC	M20 x 1	89
100FFA6-NP		
200FFA6-HD	M24 x 1	124
63FFA6-NP		
100FFA6-PP	M27 x 1.5	142
200FFA6-NP/PP		
250FFA6-HF/NP/PP		
300FFA6-HF/NP/PP	M32 x 1.5	212

## Case Dimensions

Part No.	A	B	C	D	E	F
	$\frac{\pm .04}{1}$	$\frac{\pm .02}{0.5}$	$\frac{\pm .08}{2}$	$\frac{\pm .04}{1}$	$\frac{\pm .08}{2}$	(max)
10FFA6-BA	<b>3.86</b> 98	<b>0.79</b> 20	<b>2.24</b> 57	<b>0.47</b> 12	<b>0.63</b> 16	<b>0.67</b> 17
16FFA6-CA	<b>4.17</b>	<b>0.79</b>	<b>2.40</b>	<b>0.47</b>	<b>0.71</b>	<b>0.67</b>
32FFA6-CA	106	20	61	12	18	17
63FFA6-GB	<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
100FFA6-HC	<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
200FFA6-HD	<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
300FFA6-HF	<b>7.87</b> 200	<b>2.13</b> 54	<b>3.66</b> 93	<b>0.75</b> 19	<b>1.81</b> 46	<b>1.57</b> 40
10FFA6-CE	<b>4.21</b> 107	<b>0.79</b> 20	<b>2.60</b> 66	<b>0.47</b> 12	<b>0.63</b> 16	<b>0.67</b> 17
16FFA6-DG	<b>4.57</b>	<b>0.98</b>	<b>2.72</b>	<b>0.55</b>	<b>0.71</b>	<b>0.87</b>
32FFA6-DH	116	25	69	14	18	22
63FFA6-JK	<b>6.81</b> 173	<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
100FFA6-NP	<b>8.98</b> 228	<b>1.50</b> 38	<b>5.71</b> 145	<b>0.75</b> 19	<b>1.26</b> 32	<b>1.06</b> 27
200FFA6-NP	<b>9.57</b> 243	<b>2.13</b> 54	<b>5.75</b> 146	<b>0.75</b> 19	<b>1.57</b> 40	<b>1.57</b> 40
250FFA6-NP	<b>10.51</b>	<b>2.13</b>	<b>6.30</b>	<b>0.75</b>	<b>1.81</b>	<b>1.57</b>
300FFA6-HN	267	54	160	19	46	40
10FFA6-GJ	<b>5.51</b> 140	<b>0.79</b> 20	<b>3.90</b> 99	<b>0.47</b> 12	<b>0.63</b> 16	<b>0.67</b> 17
16FFA6-HN	<b>5.83</b>	<b>0.98</b>	<b>3.98</b>	<b>0.55</b>	<b>0.71</b>	<b>0.87</b>
32FFA6-HN	148	25	101	14	18	22
63FFA6-NP	<b>7.44</b> 189	<b>2.13</b> 54	<b>4.65</b> 118	<b>0.75</b> 19	<b>1.02</b> 26	<b>1.57</b> 40
100FFA6-PP	<b>8.94</b> 227	<b>2.13</b> 54	<b>5.67</b> 144	<b>0.75</b> 19	<b>1.26</b> 32	<b>1.57</b> 40
200FFA6-PP	<b>9.57</b> 243	<b>2.13</b> 54	<b>5.75</b> 146	<b>0.75</b> 19	<b>1.57</b> 40	<b>1.57</b> 40
250FFA6-PP	<b>10.51</b>	<b>2.13</b>	<b>6.3</b>	<b>0.75</b>	<b>1.81</b>	<b>1.57</b>
300FFA6-PP	267	54	160	19	46	40

Dimensions are in inches and millimeters unless otherwise specified. Values in italics are metric equivalents. Dimensions are shown for reference purposes only. Specifications subject to change.

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**AC Feedthrough Filters - Class Y2** *(continued)*

# FFA Series

## Available Part Numbers

Standard Performance	High Performance	Extended Performance
10FFA6-BA	10FFA6-CE	10FFA6-GJ
16FFA6-CA	16FFA6-DG	16FFA6-HN
32FFA6-CA	32FFA6-DH	32FFA6-HN
63FFA6-GB	63FFA6-JK	63FFA6-NP
100FFA6-HC	100FFA6-NP	100FFA6-PP
200FFA6-HD	200FFA6-NP	200FFA6-PP
250FFA6-HF	250FFA6-NP	250FFA6-PP
300FFA6-HF	300FFA6-NP	300FFA6-PP

## Performance Data

### Typical Insertion Loss – Line to Ground in 50 Ohm circuit

Filter ID	Frequency – MHz								
	0.01	0.03	0.1	0.3	1	10	100	1000	
BA	-	-	-	-	4	18	80	100	
CA	-	-	2	4	10	22	65	100	
CE	-	-	2	3	10	28	65	100	
DG	-	-	3	7	15	40	72	100	
DH	-	-	3	7	15	40	72	100	
GB	-	-	6	11	21	50	85	100	
GJ	-	-	5	12	21	60	90	100	
HC	-	2	10	18	27	60	100	100	
HD	-	2	10	18	27	60	100	100	
HF	-	2	10	18	27	60	100	100	
HN	2	4	10	17	24	75	90	100	
JK	3	8	15	21	28	72	100	100	
NP	7	15	24	31	44	80	100	100	
PP	12	20	29	33	56	80	100	100	

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