

# AC FILTERING

FLA\* RoHS Compliant



The FLA series uses metallized polypropylene dielectric, aluminum can, impregnated with soft PU specially treated to have a very high dielectric strength in operating conditions up to 85°C.

The FLA has been designed with overpressure disconnected device. They are suitable for output AC filtering for power converters, UPS systems, solar inverters and motor drives etc.

## APPLICATIONS

- The FLA capacitor is particularly designed for AC filtering.

## HOT SPOT CALCULATION

See *Hot Spot Temperature*, page 70.

$$\theta_{\text{hot spot}} = \theta_{\text{ambient}} + (P_d + P_t) \times R_{\text{th}}$$

with  $P_d$  (Dielectric losses) =  $Q \times \text{tg}\delta_0$   
 $Q \times \text{tg}\delta_0 \Rightarrow [ \frac{1}{2} \times C_n \times (V_{\text{peak to peak}})^2 \times f ] \times \text{tg}\delta_0$   
 $\text{tg}\delta_0$  (tan delta)  
 For polypropylene,  $\text{tg}\delta_0 = 2 \times 10^{-4}$  for frequencies up to 1MHz and is independent of temperatures.  
 $P_t$  (Thermal losses) =  $R_s \times (I_{\text{rms}})^2$

where  $C_n$  in Farad       $I_{\text{rms}}$  in Ampere       $f$  in Hertz  
 $V$  in Volt               $R_s$  in Ohm               $\theta$  in °C  
 $R_{\text{th}}$  in °C/W

## WORKING TEMPERATURE

According to the power to be dissipated  
 -40°C to +85°C

## LIFETIME EXPECTANCY

One unique feature of this technology (as opposed to aluminum electrolytics) is how the capacitor reacts at the end of its lifetime.

Unlike aluminum electrolytic film capacitors do not have a catastrophic failure mode. Film capacitors simply experience a parametric loss of capacitance of about 5% from initial value, with no risk of short circuit.

The capacitor continues to be functional even after this 5% decrease.

## PACKAGING MATERIAL

- Aluminium can with soft PU

## STANDARDS

IEC 61071-1, IEC 61071-2: Power electronic capacitors  
 EN CYWT2.E514025 Certificate: E514025 (approved by UL)

## HOW TO ORDER

**FLA**



**Series**

**A1**



**Case**

A1-A2  
 B1-B4  
 C1  
 D1  
 E1-E8  
 F1-F5  
 G1-G6  
 H1-H2

**6**



**Dielectric**

6 = Polypropylene

**V**



**Voltage**

A = 250V  
 H = 330V  
 L = 450V  
 M = 480V  
 J = 550V  
 R = 600V  
 N = 660V  
 O = 690V

**0606**



**Capacitance**

**EIA Code**  
 0606 = 60uF

**K**



**Tolerances**

J = ±5%  
 K = ±10%

**C**



**Terminal Code**

F = Fast-on terminals  
 H = M8 screw terminals

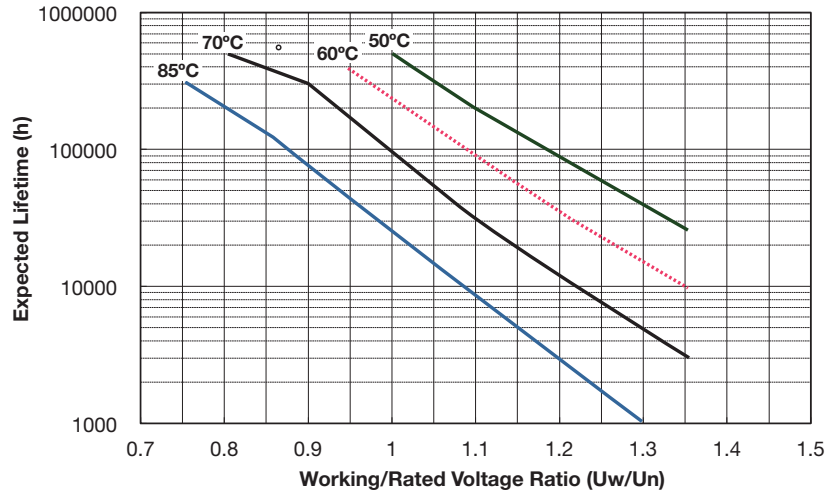


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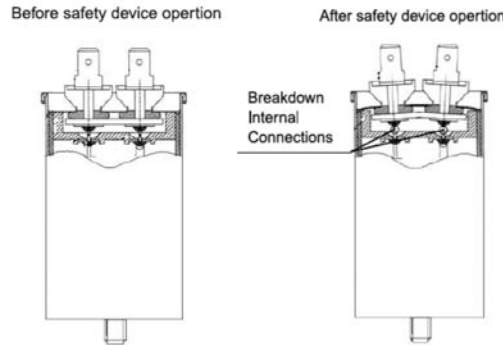
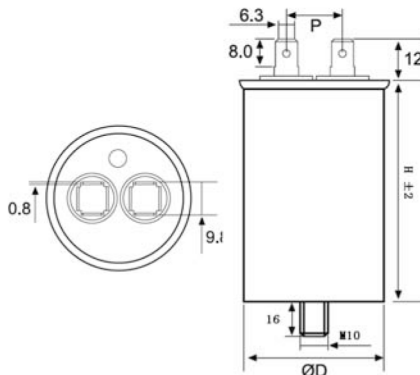
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## LIFETIME EXPECTANCY VS HOT SPOT TEMPERATURE AND VOLTAGE

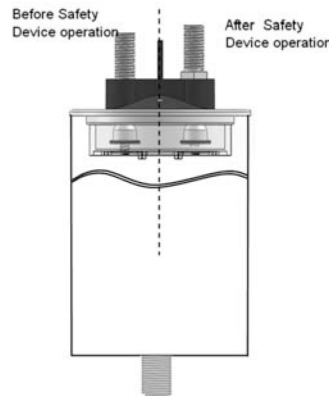
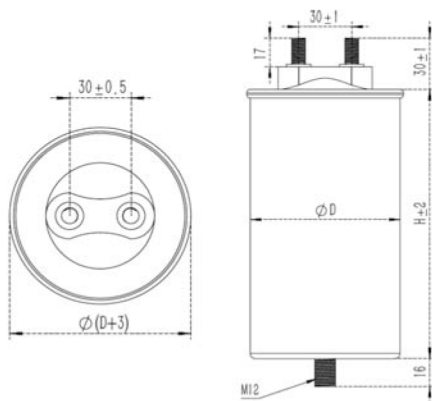
Expected Lifetime Curves (FLA Series)



## GENERAL DESCRIPTION



### Fast-on terminals



### M 8 screw terminals

## DIMENSIONS

Case Ref	OD (mm)	H (mm)
A1	45	100
A2	45	125
B1	50	75
B2	50	100
B3	50	125
B4	50	150
C1	55	125
D1	60	130
E1	63.5	70
E2	63.5	75
E3	63.5	80
E4	63.5	100
E5	63.5	125
E6	63.5	150
E7	63.5	165
E8	63.5	197
F1	75	107
F2	75	122
F3	75	152
F4	75	180
F5	75	197
G1	85	122
G2	85	152
G3	85	180
G4	85	197
G5	85	210
G6	85	247
H1	106	210
H2	106	247

## INSTALLATION TORQUE

Terminals	Torque Nm
Terminals	Torque Nm
M8	6
Stud of Case	Torque Nm
M10	10
M12	15

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## POLYPROPYLENE DIELECTRIC FOR INDUSTRIAL AC FILTERING

These capacitors have been designed principally for high and medium power AC filtering applications.

### ELECTRICAL CHARACTERISTICS

Climatic category	40/85/56 (IEC 60068)
Test voltage between terminals @ 25°C	2.15 x V <sub>rms</sub>
Capacitance range C <sub>n</sub>	10µF to 600µF
Capacitance Tolerances:	±5%, ±10%
Rated AC Voltage:	V <sub>rms</sub> 250V to 690V
Dielectric:	Polypropylene
Lifetime (ΔC/C < 5%):	100,000hrs @ U <sub>f</sub> & 70°C

### RATINGS AND PART NUMBER REFERENCE – POLYPROPYLENE DIELECTRIC

Cap (µF)	Rated Voltage (V)	Part No.	Case Code	OD ±2 (mm)	H ±2 (mm)	V/µs (Volt/sec)	I Peak (A)	I rms (A)	R <sub>s</sub> (mΩ)	ESL (nH)	Rth (°C/W)	Packaging Method	
												Qty	Box Dimension (mm)
<b>V<sub>rms</sub> = 250V Voltage Code: A</b>													
60.0	250	FLAB26A0606KF	B2	50.0	100.0	16.7	999.0	16.0	6.2	175.0	7.6	20	375*285*235
80.0	250	FLAB26A0806KF	B2	50.0	100.0	16.7	1332.0	16.0	5.6	175.0	8.4	20	375*285*235
100.0	250	FLAB36A0107KF	B3	50.0	125.0	12.6	1260.0	16.0	7.5	175.0	6.3	20	375*285*235
120.0	250	FLAC16A0127KF	C1	55.0	125.0	12.6	1512.0	16.0	7.1	175.0	6.6	20	375*285*235
150.0	250	FLAD16A0157KF	D1	60.0	130.0	12.6	1890.0	18.5	7.5	175.0	4.7	20	375*285*235
150.0	250	FLAF26A0157KH	F2	75.0	122.0	10.8	1620.0	28.0	3.0	190.0	5.1	10	375*285*235
175.0	250	FLAE56A1756KF	E5	63.5	125.0	12.6	2205.0	20.0	7.5	180.0	4.0	12	375*285*235
200.0	250	FLAE76A0207KF	E7	63.5	165.0	11.3	2268.0	20.0	7.5	180.0	4.0	12	375*285*365
200.0	250	FLAG16A0207KH	G1	85.0	122.0	11.7	2340.0	40.0	2.5	200.0	3.0	8	375*285*235
230.0	250	FLAF36A0237KH	F3	75.0	152.0	8.6	1987.2	35.0	3.5	190.0	2.8	10	375*285*365
250.0	250	FLAF36A0257KH	F3	75.0	152.0	8.6	2160.0	32.0	3.6	190.0	3.3	10	375*285*365
300.0	250	FLAF46A0307KH	F4	75.0	180.0	8.6	2592.0	40.0	2.1	190.0	3.6	10	375*285*365
350.0	250	FLAG36A0357KH	G3	85.0	180.0	10.4	3622.5	44.0	1.9	200.0	3.3	8	375*285*365
400.0	250	FLAG36A0407KH	G3	85.0	180.0	10.4	4140.0	45.0	1.8	200.0	3.3	8	375*285*365
500.0	250	FLAG56A0507KH	G5	85.0	210.0	10.8	5400.0	50.0	2.3	220.0	2.1	8	375*285*365
600.0	250	FLAG66A0607KH	G6	85.0	247.0	8.0	4806.0	45.0	2.2	200.0	2.7	8	375*285*365
<b>V<sub>rms</sub> = 330V Voltage Code: H</b>													
50.0	330	FLAB26H0506KF	B2	50.0	100.0	16.7	832.5	16.0	8.7	175.0	5.4	20	375*285*235
60.0	330	FLAB36H0606KF	B3	50.0	125.0	12.6	756.0	16.0	8.2	175.0	5.7	20	375*285*235
100.0	330	FLAD16H0107KF	D1	60.0	130.0	12.6	1260.0	16.0	8.0	175.0	5.9	20	375*285*235
100.0	330	FLAF26H0107KH	F2	75.0	122.0	13.1	1305.0	25.0	3.4	190.0	5.6	10	375*285*235
120.0	330	FLAD16H0127KF	D1	60.0	130.0	7.2	864.0	18.5	7.4	175.0	4.7	20	375*285*235
150.0	330	FLAE66H0157KF	E6	63.5	150.0	8.7	1309.5	20.0	6.8	175.0	4.4	12	375*285*235
150.0	330	FLAF36H0157KH	F3	75.0	152.0	9.0	1350.0	25.0	4.4	190.0	4.4	10	375*285*235
175.0	330	FLAE76H1756KF	E7	63.5	165.0	8.6	1496.3	20.0	6.8	175.0	4.4	12	375*285*365
200.0	330	FLAF46H0207KH	F4	75.0	180.0	13.1	2610.0	35.0	3.7	190.0	2.6	10	375*285*365
200.0	330	FLAG26H0207KH	G2	85.0	152.0	13.1	2610.0	35.0	3.3	200.0	3.0	8	375*285*235
250.0	330	FLAF46H0257KH	F4	75.0	180.0	8.6	2137.5	40.0	2.1	190.0	3.6	10	375*285*365
300.0	330	FLAG36H0307KH	G3	85.0	180.0	13.1	3915.0	40.0	2.0	200.0	3.8	8	375*285*365
350.0	330	FLAG56H0357KH	G5	85.0	210.0	13.1	4567.5	40.0	1.9	200.0	3.9	8	375*285*365
400.0	330	FLAG66H0407KH	G6	85.0	247.0	8.1	3240.0	45.0	2.5	200.0	2.4	8	375*285*365
450.0	330	FLAG66H0457KH	G6	85.0	247.0	8.1	3645.0	45.0	2.2	200.0	2.7	8	375*285*365
<b>V<sub>rms</sub> = 450V Voltage Code: L</b>													
20.0	450	FLAB16L0206KF	B1	50.0	75.0	35.0	700.0	12.0	9.5	175.0	8.8	20	375*285*235
30.0	450	FLAB26L0306KF	B2	50.0	100.0	23.3	700.0	12.0	9.2	175.0	9.1	20	375*285*235
33.0	450	FLAB26L0336KF	B2	50.0	100.0	21.2	700.0	16.0	7.2	175.0	6.5	12	375*285*235
40.0	450	FLAB26L0406KF	B2	50.0	100.0	13.5	540.0	16.0	8.2	175.0	5.7	20	375*285*235
50.0	450	FLAB36L0506KF	B3	50.0	125.0	10.8	540.0	16.0	8.7	175.0	5.4	20	375*285*235
50.0	450	FLAF16L0506KH	F1	75.0	107.0	17.1	855.0	25.0	7.1	190.0	2.7	10	375*285*235
70.0	450	FLAE56L0706KF	E5	63.5	125.0	13.0	907.0	20.0	6.8	175.0	4.4	12	375*285*235

\* Insert K for 10% capacitance tolerance (standard); J (+5%) and M (+20%) tolerances available on request.  
 Values outside this standard range may be available – please contact KYOCERA AVX for any special requirements.  
 KYOCERA AVX reserves the right to supply capacitors to a tighter capacitance tolerance or higher voltage rating, in the same case size.

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## RATINGS AND PART NUMBER REFERENCE – POLYPROPYLENE DIELECTRIC

Cap (µF)	Rated Voltage (V)	Part No.	Case Code	OD ±2 (mm)	H ±2 (mm)	V/µs (Volt/sec)	I Peak (A)	I rms (A)	R <sub>s</sub> (mΩ)	ESL (nH)	Rth (°C/W)	Packaging Method	
												Qty	Box Dimension (mm)
80.0	450	FLAE56L0806KF	E5	63.5	125.0	11.3	907.2	20.0	6.8	175.0	4.4	12	375*285*235
90.0	450	FLAE56L0906KF	E5	63.5	125.0	11.3	1020.6	20.0	6.8	175.0	4.4	12	375*285*365
100.0	450	FLAF36L0107KH	F3	75.0	152.0	10.8	1080.0	40.0	2.8	190.0	2.7	10	375*285*365
150.0	450	FLAG26L0157KH	G2	85.0	152.0	13.1	1957.5	40.0	2.3	200.0	3.3	8	375*285*365
200.0	450	FLAG56L0207KH	G5	85.0	210.0	13.5	2700.0	50.0	2.0	220.0	2.4	6	375*285*365
250.0	450	FLAG66L0257KH	G6	85.0	247.0	8.1	2025.0	45.0	2.8	200.0	2.1	8	375*285*365
300.0	450	FLAG66L0307KH	G6	85.0	247.0	8.0	2403.0	50.0	2.4	220.0	2.0	6	375*285*365
<b>V<sub>rms</sub> = 480V Voltage Code: M</b>													
20.0	480	FLAE16M0206KF	E1	63.5	70.0	37.5	750.0	16.0	5.2	175.0	9.0	12	375*285*235
25.0	480	FLAE36M0256KF	E3	63.5	80.0	30.0	750.0	16.0	6.3	175.0	7.4	12	375*285*235
30.0	480	FLAE36M0306KF	E3	63.5	80.0	25.0	750.0	16.0	5.8	175.0	8.1	12	375*285*235
40.0	480	FLAE46M0406KF	E4	63.5	100.0	21.3	850.0	16.0	7.9	175.0	5.9	12	375*285*235
50.0	480	FLAE46M0506KF	E4	63.5	100.0	17.0	850.0	20.0	7.2	175.0	4.2	12	375*285*235
50.0	480	FLAF16M0506KH	F1	75.0	107.0	19.0	950.0	25.0	3.8	190.0	5.1	10	375*285*235
60.0	480	FLAF26M0606KH	F2	75.0	122.0	17.6	1053.0	25.0	3.8	190.0	5.1	10	375*285*235
70.0	480	FLAF36M0706KH	F3	75.0	152.0	22.5	1575.0	40.0	2.1	190.0	3.6	10	375*285*235
80.0	480	FLAF36M0806KH	F3	75.0	152.0	15.3	1224.0	40.0	1.9	190.0	3.9	10	375*285*235
100.0	480	FLAF56M0107KH	F5	75.0	197.0	17.1	1710.0	40.0	2.8	190.0	2.7	10	375*285*365
150.0	480	FLAG46M0157KH	G4	85.0	197.0	17.1	2565.0	45.0	2.3	200.0	2.6	8	375*285*365
200.0	480	FLAG66M0207KH	G6	85.0	247.0	13.1	2610.0	45.0	2.8	200.0	2.1	8	375*285*365
250.0	480	FLAG66M0257KH	G6	85.0	247.0	11.7	2925.0	45.0	2.8	200.0	2.1	8	375*285*365
<b>V<sub>rms</sub> = 550V Voltage Code: J</b>													
20.0	550	FLAB26J0206KF	B2	50.0	100.0	30.0	600.0	12.0	8.0	175.0	10.4	20	375*285*235
30.0	550	FLAB36J0306KF	B3	50.0	125.0	25.0	750.0	12.0	8.6	175.0	9.7	20	375*285*235
40.0	550	FLAC16J0406KF	C1	55.0	125.0	18.8	750.0	12.0	7.9	175.0	10.5	20	375*285*235
50.0	550	FLAD16J0506KF	D1	60.0	130.0	17.0	850.0	18.5	7.2	175.0	4.9	20	375*285*235
70.0	550	FLAE76J0706KF	E7	63.5	165.0	12.9	900.0	20.0	5.4	175.0	5.6	12	375*285*365
80.0	550	FLAF46J0806KH	F4	75.0	180.0	22.5	1800.0	30.0	3.0	190.0	4.4	10	375*285*365
100.0	550	FLAG36J0107KH	G3	85.0	180.0	28.2	2821.0	40.0	2.8	200.0	2.7	8	375*285*365
125.0	550	FLAG36J1256KH	G3	85.0	180.0	22.6	2821.0	40.0	2.4	200.0	3.1	8	375*285*365
150.0	550	FLAG66J0157KH	G6	85.0	247.0	21.4	3217.0	45.0	2.6	200.0	2.3	8	375*285*365
200.0	550	FLAG66J0207KH	G6	85.0	247.0	16.1	3217.0	45.0	2.4	200.0	2.5	8	375*285*365
250.0	550	FLAH26J0257KH	H2	106.0	247.0	14.0	3500.0	50.0	2.8	240.0	1.7	6	375*285*365
300.0	550	FLAH26J0307KH	H2	106.0	247.0	11.7	3500.0	50.0	2.7	240.0	1.8	6	375*285*365
<b>V<sub>rms</sub> = 600V Voltage Code: R</b>													
10.0	600	FLAB16R0106KF	B1	50.0	75.0	35.0	350.0	6.5	9.5	160.0	29.9	30	375*285*235
20.0	600	FLAB36R0206KF	B3	50.0	125.0	25.0	500.0	12.0	8.4	160.0	9.9	20	375*285*235
25.0	600	FLAB36R0256KF	B3	50.0	125.0	20.0	500.0	12.0	8.4	160.0	9.9	20	375*285*235
25.0	600	FLAE46R0256KF	E4	63.5	100.0	24.0	600.0	18.0	7.6	175.0	4.9	12	375*285*235
30.0	600	FLAE46R0306KF	E4	63.5	100.0	20.0	600.0	18.0	7.6	175.0	4.9	12	375*285*235
35.0	600	FLAE56R0356KF	E5	63.5	125.0	20.0	700.0	18.0	7.2	175.0	5.1	12	375*285*235
40.0	600	FLAE56R0406KF	E5	63.5	125.0	17.5	700.0	20.0	5.8	175.0	5.2	12	375*285*235
45.0	600	FLAE56R0456KF	E5	63.5	125.0	15.6	700.0	20.0	5.8	175.0	5.2	12	375*285*235
50.0	600	FLAE66R0506KF	E6	63.5	150.0	17.0	850.0	20.0	5.4	175.0	5.6	12	375*285*235
<b>V<sub>rms</sub> = 660V Voltage Code: N</b>													
10.0	660	FLAA16N0106KF	A1	45.0	100.0	40.0	400.0	6.5	9.5	160.0	29.9	30	375*285*235
10.0	660	FLAB16N0106KF	B1	50.0	75.0	55.0	550.0	8.0	8.5	160.0	22.1	20	375*285*235
12.0	660	FLAA16N0126KF	A1	45.0	100.0	35.0	420.0	6.5	9.5	160.0	29.9	30	375*285*235
15.0	660	FLAA26N0156KF	A2	45.0	125.0	28.0	420.0	6.5	9.5	160.0	29.9	30	375*285*235
15.0	660	FLAB26N0156KF	B2	50.0	100.0	36.7	550.0	8.0	8.5	160.0	22.1	20	375*285*235
18.0	660	FLAA26N0186KF	A2	45.0	125.0	25.0	450.0	6.5	9.5	160.0	29.9	30	375*285*235
18.0	660	FLAE26N0186KF	E2	63.5	75.0	36.1	650.0	12.0	7.8	175.0	10.7	12	375*285*235
20.0	660	FLAB36N0206KF	B3	50.0	125.0	27.5	550.0	12.0	7.8	175.0	10.7	20	375*285*235
20.0	660	FLAE26N0206KF	E2	63.5	75.0	32.5	650.0	12.0	7.8	175.0	10.7	12	375*285*235
25.0	660	FLAB46N0256KF	B4	50.0	150.0	22.0	550.0	12.0	7.8	175.0	10.7	20	375*285*235
25.0	660	FLAE46N0256KF	E4	63.5	100.0	26.0	650.0	16.0	7.0	175.0	6.7	12	375*285*235
30.0	660	FLAE56N0306KF	E5	63.5	125.0	25.0	750.0	16.0	7.0	175.0	6.7	12	375*285*235
35.0	660	FLAE56N0356KF	E5	63.5	125.0	21.4	750.0	16.0	7.0	175.0	6.7	12	375*285*235

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The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at [www.avx.com/disclaimer/](http://www.avx.com/disclaimer/) by reference and should be reviewed in full before placing any order.

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## RATINGS AND PART NUMBER REFERENCE – POLYPROPYLENE DIELECTRIC

Cap (µF)	Rated Voltage (V)	Part No.	Case Code	OD ±2 (mm)	H ±2 (mm)	V/µs (Volt/sec)	I Peak (A)	I rms (A)	R <sub>s</sub> (mΩ)	ESL (nH)	Rth (°C/W)	Packaging Method	
												Qty	Box Dimension (mm)
40.0	660	FLAE66N0406KF	E6	63.5	150.0	22.5	900.0	16.0	7.0	175.0	6.7	12	375*285*235
45.0	660	FLAE66N0456KF	E6	63.5	150.0	20.0	900.0	16.0	6.8	175.0	6.9	12	375*285*235
50.0	660	FLAE66N0506KF	E8	63.5	194.0	20.0	1000.0	18.0	6.0	175.0	6.2	12	375*285*365
<b>V<sub>rms</sub> = 690V Voltage Code: 0</b>													
10.0	690	FLAB36O0106KF	B3	50.0	125.0	75.0	750.0	12.0	8.9	175.0	9.4	20	375*285*235
15.0	690	FLAB36O0156KF	B3	50.0	125.0	50.0	750.0	12.0	8.3	175.0	10.0	20	375*285*235
20.0	690	FLAE56R0206KF	E5	63.5	125.0	45.0	900.0	16.0	6.5	175.0	7.2	12	375*285*235
30.0	690	FLAE56O0306KF	E5	63.5	125.0	30.0	900.0	16.0	6.5	175.0	7.2	12	375*285*365
40.0	690	FLAF46O0406KH	F4	75.0	180.0	28.8	1150.0	25.0	5.8	190.0	3.3	10	375*285*365
50.0	690	FLAF46O0506KH	F4	75.0	180.0	23.0	1150.0	25.0	5.4	190.0	3.6	10	375*285*365
70.0	690	FLAG56O0706KH	G5	85.0	210.0	18.0	1260.0	40.0	3.4	200.0	2.2	8	375*285*365
85.0	690	FLAG56O0856KH	G5	85.0	210.0	18.0	1530.0	50.0	3.0	220.0	1.6	6	375*285*365
100.0	690	FLAH16O0107KH	H1	106.0	210.0	18.0	1800.0	50.0	2.7	240.0	1.8	6	375*285*365
125.0	690	FLAH26O1256KH	H2	106.0	247.0	12.5	1563.0	50.0	2.6	220.0	1.8	6	375*285*365
150.0	690	FLAH26O0157KH	H2	106.0	247.0	12.5	1875.0	50.0	2.4	240.0	2.0	6	375*285*365
170.0	690	FLAH26O0177KH	H2	106.0	247.0	12.5	2125.0	50.0	2.2	240.0	2.2	6	375*285*365

\* Insert K for 10% capacitance tolerance (standard); J (+5%) and M (+20%) tolerances available on request.  
 Values outside this standard range may be available – please contact KYOCERA AVX for any special requirements.  
 KYOCERA AVX reserves the right to supply capacitors to a tighter capacitance tolerance or higher voltage rating, in the same case size.