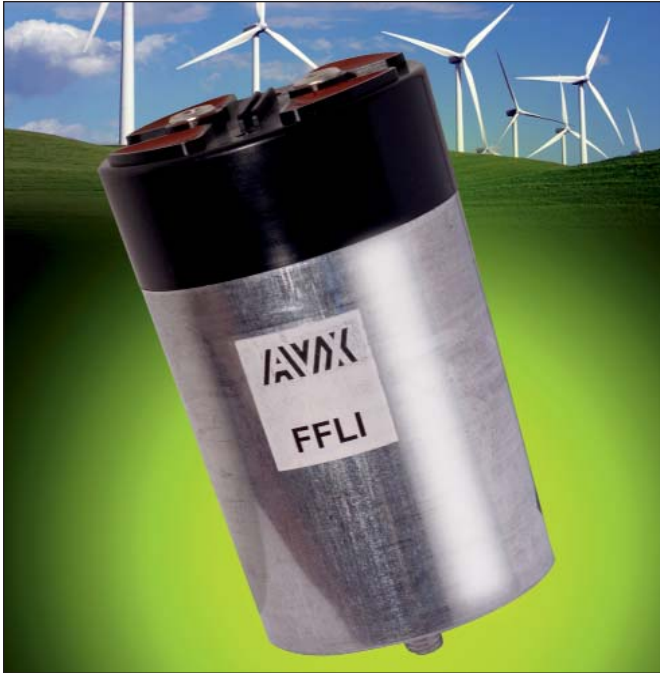


# Capacitors for Power Electronics



FFLI (RoHS Compliant)

DC FILTERING



## USUAL APPLICATIONS

The FFLI capacitor is specifically designed for DC filtering,

## PACKAGING MATERIAL

Aluminium cylindrical case filled thermosetting resin.

Self extinguishing thermosetting resin (V0 : in accordance with UL 94 ; M2F1 : in accordance with NF F 16-101).

Self extinguishing plastic cover (V0 : in accordance with UL 94)  
ROHS components

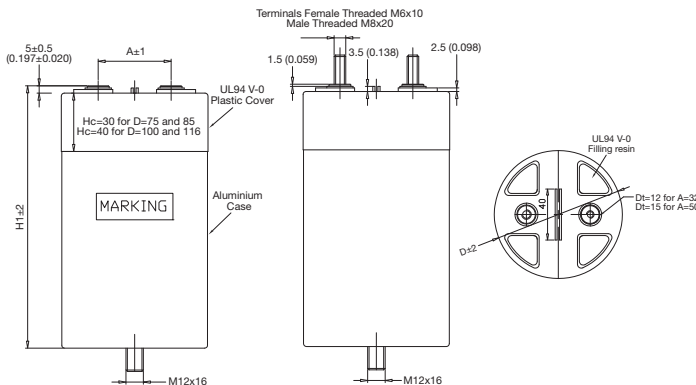
## LIFETIME EXPECTANCY

One unique feature of this technology (as opposed to electrolytics) is how the capacitor reacts at the end of its lifetime. Whereas with an electrolytic there is a strong risk of explosion of the case. However with our line of film capacitors, the capacitor will simply experience at the end of life a loss of capacitance of about 5%, with no risk of explosion.

Please note that this is theoretical, however, as the capacitor continues to be functional even after this 5% decrease.

Expected life time for FFLI range:  
100 000 Hrs /  $U_{n\text{dc}}$  / Hot-spot temperature = 65°C.

## DIMENSIONS



## MARKING

Capacitance value  
Nominal dc voltage  
Maximum rms current  
Batch number  
Coded date according IEC62

Max Torque M6 = 4.5.Nm  
Max Torque M8 = 8.5Nm  
Max Torque M12 = 15Nm

## STANDARDS

IEC 61071: Power electronic capacitors

IEC 60068-1: Environmental testing

IEC 61373: Shocks and vibrations

UL 94: Fire requirements

UL810: Capacitors

## HOT SPOT CALCULATION

See *Hot Spot Temperature*, page 3.

For all applications, the hot spot temperature must be lower than 95°C.

$$\theta_{\text{hot spot}} = \theta_{\text{ambient}} + [\text{tg} \delta \cdot Q + R_s \cdot (I_{\text{rms}})^2] \cdot R_{\text{th}}$$

With:

Q : Reactive power in Var

$R_s$  in Ohm

$I_{\text{rms}}$  in Ampere

$R_{\text{th}}$  : Rth ambient / hot spot in °C/W

$\text{tg} \delta \cdot (10^{-4})$  is the tangent of loss angle for polypropylene dielectric. Polypropylene has a constant dielectric loss factor of  $2 \times 10^{-4}$  irrespective of temperature and frequency (up to 1 MHz).

$\theta_{\text{Ambient}}$  : Ambient Temperature in °C

## HOW TO ORDER

**FFLI**

Series

**6**

Dielectric  
6 = Polypropylene

**L**

Voltage Code  
B = 800V  
L = 1000V  
U = 1150V  
Q = 1400V

**0337**

Capacitance Code  
Capacitance Values with 2 significant digits:  
0 + pF code  
0397 = 390µF  
0167 = 160µF  
etc.

**K**

Capacitance Tolerances  
K = ±10%

**--**

Terminal Code  
-- = Male Threaded  
JE = Female Threaded

### ELECTRICAL CHARACTERISTICS

Dry with controlled self-healing metallized polypropylene dielectric.

|                                         |                                                     |
|-----------------------------------------|-----------------------------------------------------|
| Climatic Category                       | 40/95/56 (IEC68)                                    |
| Working temperature                     | -40°C / + 95°C (according to the power dissipated ) |
| Storage temperature                     | -40°C / +85°C                                       |
| Test voltage between terminals          | @ 25°C: 1.5 x U <sub>Ndc</sub> during 10s           |
| Test voltage between terminals and case | @ 25°C: @ 4 kVrms @ 50Hz during 1 min.              |
| Dielectric                              | Polypropylene                                       |

### RATINGS AND PART NUMBER REFERENCE

| Part Number                  | Capacitance (μF) | D           | H1          | A          | I <sub>rms</sub> (A) | I <sup>2</sup> t (A²s) | L <sub>s</sub> max. (nH) | R <sub>s</sub> (mΩ) | R <sub>th</sub> (°C/W) | Typical Weight (g) |
|------------------------------|------------------|-------------|-------------|------------|----------------------|------------------------|--------------------------|---------------------|------------------------|--------------------|
| <b>U<sub>Ndc</sub> 800V</b>  |                  |             |             |            |                      |                        |                          |                     |                        |                    |
| FFLI6B0297K--                | 290              | 75 (2.953)  | 105 (4.134) | 32 (1.260) | 50                   | 13                     | 60                       | 4.1                 | 4.1                    | 600                |
| FFLI6B0397K--                | 390              | 85 (3.346)  | 105 (4.134) | 32 (1.260) | 62                   | 23                     | 60                       | 2.9                 | 3.6                    | 700                |
| FFLI6B0507K--                | 500              | 75 (2.953)  | 155 (6.102) | 32 (1.260) | 45                   | 13                     | 85                       | 5.6                 | 3.6                    | 850                |
| FFLI6B0687K--                | 680              | 85 (3.346)  | 155 (6.102) | 32 (1.260) | 53                   | 24                     | 85                       | 4.3                 | 3.3                    | 1100               |
| FFLI6B0817K--                | 810              | 85 (3.346)  | 180 (7.087) | 32 (1.260) | 50                   | 23                     | 100                      | 5.1                 | 3.1                    | 1300               |
| FFLI6B1007K--                | 1000             | 100 (3.937) | 155 (6.102) | 50 (13.78) | 65                   | 52                     | 85                       | 3.2                 | 3.0                    | 1500               |
| FFLI6B1207K--                | 1200             | 100 (3.937) | 180 (7.087) | 50 (13.78) | 61                   | 52                     | 100                      | 3.7                 | 2.9                    | 1800               |
| FFLI6B1357K--                | 1350             | 116 (4.567) | 155 (6.102) | 50 (13.78) | 77                   | 95                     | 85                       | 2.5                 | 2.6                    | 2000               |
| FFLI6B1607K--                | 1600             | 116 (4.567) | 180 (7.087) | 50 (13.78) | 72                   | 93                     | 100                      | 3.0                 | 2.6                    | 2400               |
| FFLI6B1907K--                | 1900             | 116 (4.567) | 240 (9.449) | 50 (13.78) | 110                  | 300                    | 140                      | 1.4                 | 2.4                    | 3200               |
| FFLI6B2407K--                | 2400             | 116 (4.567) | 290 (11.42) | 50 (13.78) | 100                  | 300                    | 170                      | 1.6                 | 2.2                    | 3900               |
| FFLI6B3007K--                | 3000             | 116 (4.567) | 340 (13.39) | 50 (13.78) | 100                  | 320                    | 200                      | 1.9                 | 2.0                    | 4500               |
| <b>U<sub>Ndc</sub> 1000V</b> |                  |             |             |            |                      |                        |                          |                     |                        |                    |
| FFLI6L0197K--                | 190              | 75 (2.953)  | 105 (4.134) | 32 (1.260) | 46                   | 8                      | 60                       | 4.5                 | 4.1                    | 600                |
| FFLI6L0267K--                | 260              | 85 (3.346)  | 105 (4.134) | 32 (1.260) | 56                   | 15                     | 60                       | 3.4                 | 3.6                    | 700                |
| FFLI6L0337K--                | 330              | 75 (2.953)  | 155 (6.102) | 32 (1.260) | 40                   | 8                      | 85                       | 6.8                 | 3.6                    | 850                |
| FFLI6L0457K--                | 450              | 85 (3.346)  | 155 (6.102) | 32 (1.260) | 48                   | 16                     | 85                       | 5.2                 | 3.3                    | 1100               |
| FFLI6L0547K--                | 540              | 85 (3.346)  | 180 (7.087) | 32 (1.260) | 45                   | 16                     | 100                      | 6.1                 | 3.1                    | 1300               |
| FFLI6L0657K--                | 650              | 100 (3.937) | 155 (6.102) | 50 (13.78) | 60                   | 33                     | 85                       | 3.8                 | 3.0                    | 1500               |
| FFLI6L0787K--                | 780              | 100 (3.937) | 180 (7.087) | 50 (13.78) | 55                   | 33                     | 100                      | 4.5                 | 2.9                    | 1800               |
| FFLI6L0907K--                | 900              | 116 (4.567) | 155 (6.102) | 50 (13.78) | 72                   | 64                     | 85                       | 2.9                 | 2.6                    | 2000               |
| FFLI6L1107K--                | 1100             | 116 (4.567) | 180 (7.087) | 50 (13.78) | 68                   | 66                     | 100                      | 3.4                 | 2.6                    | 2400               |
| FFLI6L1307K--                | 1300             | 116 (4.567) | 240 (9.449) | 50 (13.78) | 100                  | 210                    | 140                      | 1.5                 | 2.4                    | 3200               |
| FFLI6L1607K--                | 1600             | 116 (4.567) | 290 (11.42) | 50 (13.78) | 95                   | 200                    | 170                      | 1.9                 | 2.2                    | 3900               |
| FFLI6L2007K--                | 2000             | 116 (4.567) | 340 (13.39) | 50 (13.78) | 95                   | 200                    | 200                      | 2.2                 | 2.0                    | 4500               |
| <b>U<sub>Ndc</sub> 1150V</b> |                  |             |             |            |                      |                        |                          |                     |                        |                    |
| FFLI6U0157K--                | 150              | 75 (2.953)  | 105 (4.134) | 32 (1.260) | 44                   | 6                      | 60                       | 5.0                 | 4.1                    | 600                |
| FFLI6U0207K--                | 200              | 85 (3.346)  | 105 (4.134) | 32 (1.260) | 53                   | 11                     | 60                       | 3.9                 | 3.6                    | 700                |
| FFLI6U0267K--                | 260              | 75 (2.953)  | 155 (6.102) | 32 (1.260) | 39                   | 7                      | 85                       | 7.4                 | 3.6                    | 850                |
| FFLI6U0357K--                | 350              | 85 (3.346)  | 155 (6.102) | 32 (1.260) | 45                   | 12                     | 85                       | 5.9                 | 3.3                    | 1100               |
| FFLI6U0437K--                | 430              | 85 (3.346)  | 180 (7.087) | 32 (1.260) | 43                   | 12                     | 100                      | 6.8                 | 3.1                    | 1300               |
| FFLI6U0537K--                | 530              | 100 (3.937) | 155 (6.102) | 50 (13.78) | 57                   | 27                     | 85                       | 4.1                 | 3.0                    | 1500               |
| FFLI6U0637K--                | 630              | 100 (3.937) | 180 (7.087) | 50 (13.78) | 53                   | 27                     | 100                      | 4.9                 | 2.9                    | 1800               |
| FFLI6U0727K--                | 720              | 116 (4.567) | 155 (6.102) | 50 (13.78) | 69                   | 51                     | 85                       | 3.2                 | 2.6                    | 2000               |
| FFLI6U0867K--                | 860              | 116 (4.567) | 180 (7.087) | 50 (13.78) | 64                   | 50                     | 100                      | 3.8                 | 2.6                    | 2400               |
| FFLI6U1007K--                | 1000             | 116 (4.567) | 240 (9.449) | 50 (13.78) | 95                   | 160                    | 140                      | 1.7                 | 2.4                    | 3200               |
| FFLI6U1307K--                | 1300             | 116 (4.567) | 290 (11.42) | 50 (13.78) | 90                   | 160                    | 170                      | 2.0                 | 2.2                    | 3900               |
| FFLI6U1607K--                | 1600             | 116 (4.567) | 340 (13.39) | 50 (13.78) | 90                   | 160                    | 200                      | 2.3                 | 2.0                    | 4500               |
| <b>U<sub>Ndc</sub> 1400V</b> |                  |             |             |            |                      |                        |                          |                     |                        |                    |
| FFLI6Q1056K--                | 105              | 75 (2.953)  | 105 (4.134) | 32 (1.260) | 41                   | 5                      | 60                       | 5.8                 | 4.1                    | 600                |
| FFLI6Q0147K--                | 140              | 85 (3.346)  | 105 (4.134) | 32 (1.260) | 50                   | 8                      | 60                       | 4.5                 | 3.6                    | 700                |
| FFLI6Q1856K--                | 185              | 75 (2.953)  | 155 (6.102) | 32 (1.260) | 35                   | 5                      | 85                       | 8.8                 | 3.6                    | 850                |
| FFLI6Q0257K--                | 250              | 85 (3.346)  | 155 (6.102) | 32 (1.260) | 42                   | 9                      | 85                       | 6.7                 | 3.3                    | 1100               |
| FFLI6Q0307K--                | 300              | 85 (3.346)  | 180 (7.087) | 32 (1.260) | 40                   | 9                      | 100                      | 7.9                 | 3.1                    | 1300               |
| FFLI6Q0367K--                | 360              | 100 (3.937) | 155 (6.102) | 50 (13.78) | 52                   | 18                     | 85                       | 4.8                 | 3.0                    | 1500               |
| FFLI6Q0447K--                | 440              | 100 (3.937) | 180 (7.087) | 50 (13.78) | 50                   | 19                     | 100                      | 5.6                 | 2.9                    | 1800               |
| FFLI6Q0507K--                | 500              | 116 (4.567) | 155 (6.102) | 50 (13.78) | 65                   | 36                     | 85                       | 3.7                 | 2.6                    | 2000               |
| FFLI6Q0607K--                | 600              | 116 (4.567) | 180 (7.087) | 50 (13.78) | 60                   | 35                     | 100                      | 4.3                 | 2.6                    | 2400               |
| FFLI6Q0707K--                | 700              | 116 (4.567) | 240 (9.449) | 50 (13.78) | 90                   | 120                    | 140                      | 1.9                 | 2.4                    | 3200               |
| FFLI6Q0907K--                | 900              | 116 (4.567) | 290 (11.42) | 50 (13.78) | 90                   | 120                    | 170                      | 2.3                 | 2.2                    | 3900               |
| FFLI6Q1107K--                | 1100             | 116 (4.567) | 340 (13.39) | 50 (13.78) | 85                   | 120                    | 200                      | 2.7                 | 2.0                    | 4500               |

\*Change "--" to "JE" for female terminals

Dimensions millimeters (inches)