



# Medium Power Film Capacitors

## FFLC (RoHS Compliant)

DC FILTERING

### DC FILTERING



### APPLICATIONS

FFLC series is specifically designed for DC filtering, low reactive power.

### PACKAGING MATERIAL

Non-painted rectangular resin filled aluminum case  
 FFLC capacitors meet the level 2 requirement of flammability standard NF F 16 102.

4 x M10 terminals\*

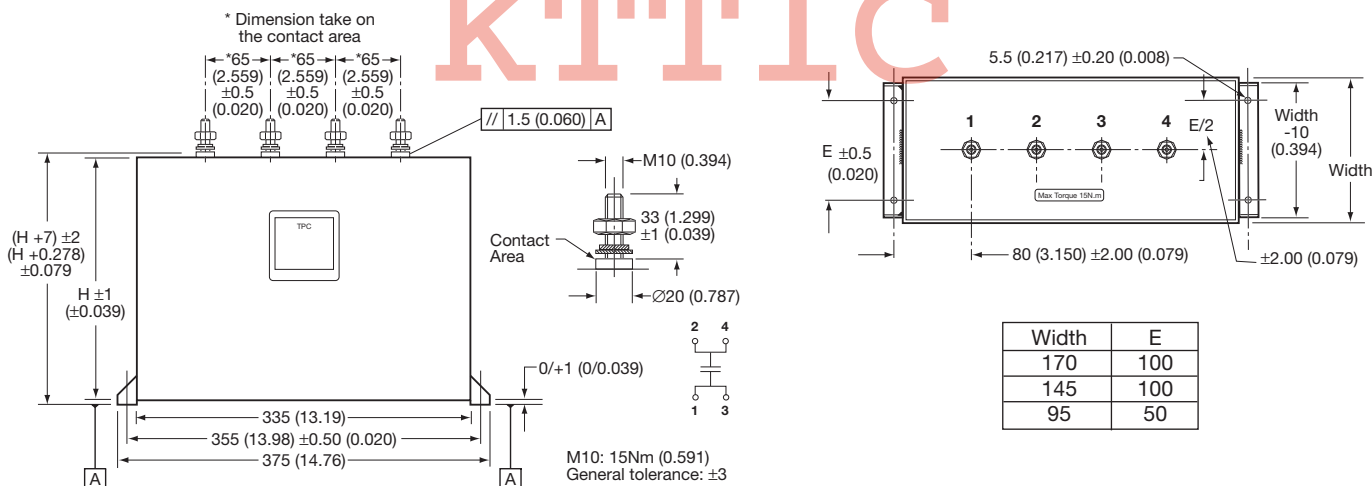
**NEW** Available with M10 X 12 female terminal upon request

### STANDARDS

- IEC 61071-1: Power electronic capacitors
- IEC 61071-2: Power electronic capacitors
- IEC 60068-1: Environmental testing
- IEC 60077: Rules for electric traction equipment
- UL 94: Fire requirements
- NF F 16-101
- NF F 16-102: Fire and smoke requirements
- IEC 61881: Railway applications, rolling stock equipment, capacitors for power electronics

### DIMENSIONS

Terminal Code -- for male threaded  
 Terminal Code JE for female threaded



### HOW TO ORDER

- FFLC**  
Series
- 6**  
Dielectric  
6 = Polypropylene
- A**  
Voltage Code  
A = 680Vdc  
L = 1000Vdc  
U = 1200Vdc
- 8807**  
Capacitance Code  
4 digit pF code 1st  
3 digits are capacitance,  
last digit is multiplier, e.g.  
8807 = 8800µF  
5067 = 5060µF  
2247 = 2240µF  
etc.
- K**  
Capacitance Tolerances  
K = ±10%
- Terminal Code  
-- = Male Terminal  
JE = Female Terminal



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### ELECTRICAL CHARACTERISTICS

Climatic Category	40/85/56 (IEC 60068)	
Test Voltage Between Terminals	@ 25°C: 1.5 x U <sub>N,dc</sub> for 10s	
Test Voltage Between Terminals and Case	@ 25°C: @ 4 kVrms @ 50Hz for 1 min.	
Capacitance range C <sub>n</sub>	1120µF to 8800µF (other values available upon request)	
Tolerance on C <sub>n</sub>	±10%	
Rated DC voltage V <sub>n,dc</sub>	680 to 1200 V	
FFLC overvoltage:	(V <sub>s</sub> ): V <sub>s</sub> = 2 V <sub>n,dc</sub> and limited at 1800V	
Maximum overvoltage	Peak value	Maximum duration
	1.67 V <sub>n,dc</sub>	100 ms 1 time per week
	1.25 V <sub>n,dc</sub>	100 ms 1 time per day
	1.1 V <sub>n,dc</sub>	1 min 1 time per day
Maximum rms current I <sub>rms</sub> max	140 Arms to 300 Arms	
Stray inductance L <sub>s</sub> *	28 nH to 40 nH	
Dielectric	Polypropylene	

### RATINGS AND PART NUMBER REFERENCE

Part Number	Capacitance (µF)	Height mm (in)	Width mm (in)	I <sub>rms</sub> (A)	L <sub>s</sub> * (nH)	R <sub>s</sub> (mΩ)	R <sub>th</sub> (°C/W)	Typical Weight (g)
<b>U<sub>N,dc</sub> 680 V (Voltage Code A)</b>								
FFLC6A8807K--	8800	240 (9.449)	170 (6.693)	220	40	0.58	1.2	18000
FFLC6A7157K--	7150	240 (9.449)	145 (5.709)	230	38	0.50	1.2	13200
FFLC6A6507K--	6500	240 (9.449)	145 (5.709)	210	38	0.55	1.3	15500
FFLC6A5607K--	5600	170 (6.693)	170 (6.693)	140	35	0.88	1.8	15500
FFLC6A4557K--	4550	170 (6.693)	145 (5.709)	150	30	0.77	1.8	11300
FFLC6A4187K--	4180	240 (9.449)	95 (3.740)	300	35	0.34	1.0	10300
FFLC6A2667K--	2660	170 (6.693)	95 (3.740)	170	28	0.49	1.6	7300
<b>U<sub>N,dc</sub> 1000 V (Voltage Code L)</b>								
FFLC6L5067K--	5060	240 (9.449)	170 (6.693)	250	40	0.61	1.2	17200
FFLC6L3207K--	3200	170 (6.693)	170 (6.693)	150	35	0.89	1.9	12400
FFLC6L4307K--	4300	240 (9.449)	145 (5.709)	300	38	0.52	1.1	15500
FFLC6L2737K--	2730	170 (6.693)	145 (5.709)	170	30	0.75	1.6	11300
FFLC6L2537K--	2530	240 (9.449)	95 (3.740)	300	35	0.36	0.8	10300
FFLC6L1607K--	1600	170 (6.693)	95 (3.740)	170	28	0.51	1.2	7300
<b>U<sub>N,dc</sub> 1200 V (Voltage Code U)</b>								
FFLC6U3527K--	3520	240 (9.449)	170 (6.693)	250	40	0.71	1.2	18800
FFLC6U2247K--	2240	170 (6.693)	170 (6.693)	150	35	1.1	1.9	12700
FFLC6U3007K--	3000	240 (9.449)	145 (5.709)	300	38	0.60	1.1	15500
FFLC6U1907K--	1900	170 (6.693)	145 (5.709)	170	30	0.87	1.6	11300
FFLC6U1757K--	1750	240 (9.449)	95 (3.740)	300	35	0.41	0.8	10300
FFLC6U1127K--	1120	170 (6.693)	95 (3.740)	170	28	0.59	1.2	7300

\*Very low stray inductance for high frequency applications on request.

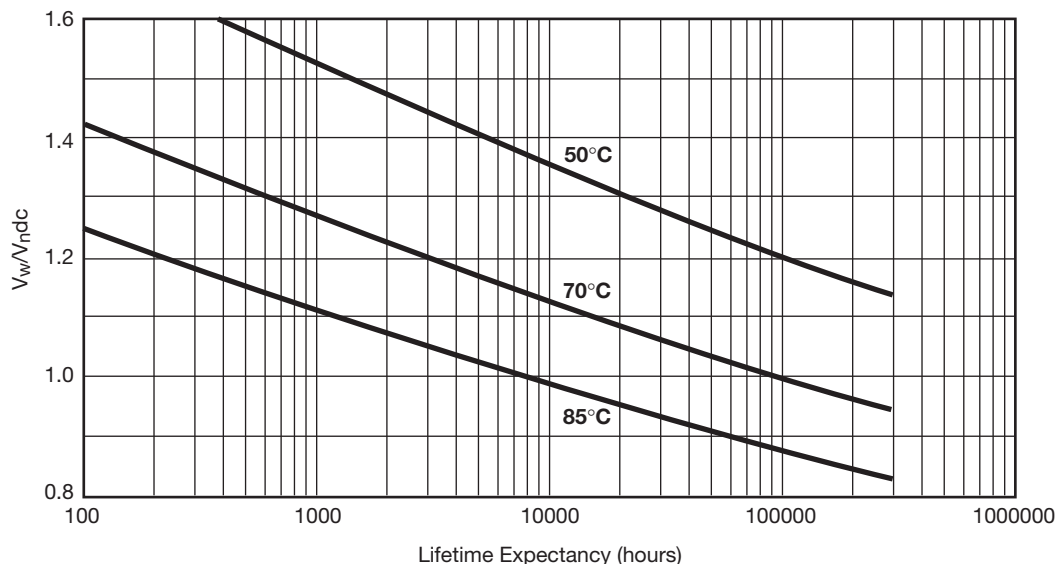
Dimensions millimeters (inches)

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## LIFETIME EXPECTANCY vs HOT SPOT TEMPERATURE AND VOLTAGE



V<sub>w</sub>: permanent working or operating DC-voltage.

### HOT SPOT CALCULATION

See *Hot Spot Temperature*, page 3.

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

with  $P_d$  (Dielectric losses) =  $Q \times \text{tg}\delta_0$

$$\Rightarrow \left[ \frac{1}{2} \times C_n \times (V_{\text{peak to peak}})^2 \times f \right] \times (2 \times 10^{-4})$$

$$P_t \text{ (Thermal losses)} = R_s \times (I_{\text{rms}})^2$$

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

KTTIC