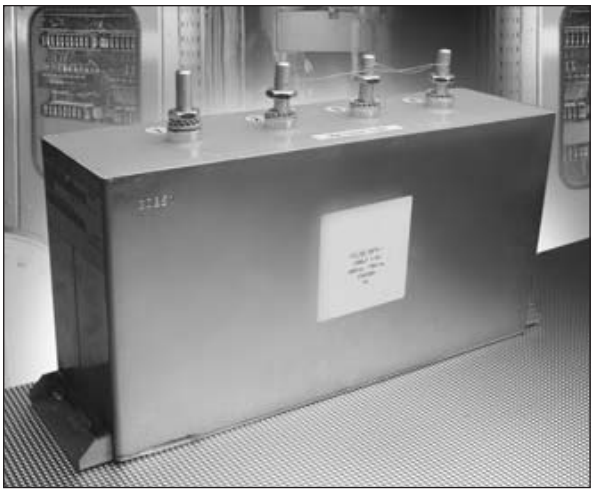
Medium Power Film Capacitors

FFLC Design

DC FILTERING



APPLICATIONS

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

PACKAGING

Rectangular resin filled aluminum case.

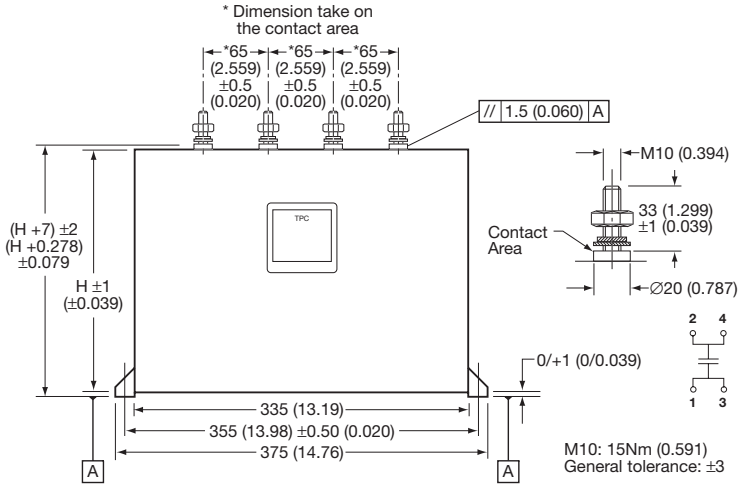
FFLC capacitors meet the level 2 requirement of the fire behavior standard NF F 16 102.

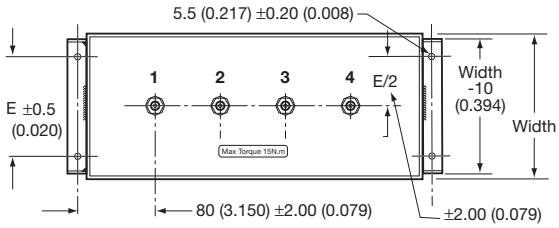
PRESENTATION

Non-painted rectangular resin filled aluminium case

4 x M10 terminals*

NEW *Available with M10 X 12 female terminal upon request (last codification digit "--" become in that case "JE")*





Width	E
170	100
145	100
95	50

ELECTRICAL CHARACTERISTICS

Climatic Category	40/85/56 (IEC 60068)
Test Voltage Between Terminals	@ 25°C: 1.5 x $U_N$dc during 10s
Test Voltage Between Terminals and Case (Type test for FFLB, routine test for FFLC)	@ 25°C: @ 4 kVrms @ 50Hz during 1 min.

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ELECTRICAL CHARACTERISTICS

Capacitance range C_n	1120µF to 8800µF (other values available upon request)
Tolerance on C_n	±10%
Rated DC voltage $V_n$dc	680 to 1200 V
Maximum rms current I_{rms} max	140 Arms to 300 Arms
Stray inductance L_s*	28 nH to 40 nH

FFLC

Part Number	Capacitance (µF)	Height mm (in)	Width mm (in)	Irms (A)	Ls* (nH)	Rs (mΩ)	Rth (°C/W)	Weight (kg)
U_N dc: 680 V								
FFLC6A8807K--	8800	240 (9.449)	170 (6.693)	220	40	0.58	1.2	18
FFLC6A7157K--	7150	240 (9.449)	145 (5.709)	230	38	0.50	1.2	13.2
FFLC6A6507K--	6500	240 (9.449)	145 (5.709)	210	38	0.55	1.3	15.5
FFLC6A5607K--	5600	170 (6.693)	170 (6.693)	140	35	0.88	1.8	15.5
FFLC6A4557K--	4550	170 (6.693)	145 (5.709)	150	30	0.77	1.8	11.3
FFLC6A4187K--	4180	240 (9.449)	95 (3.740)	300	35	0.34	1.0	10.3
FFLC6A2667K--	2660	170 (6.693)	95 (3.740)	170	28	0.49	1.6	7.3
U_N dc: 1000 V								
FFLC6L5067K--	5060	240 (9.449)	170 (6.693)	250	40	0.61	1.2	17.2
FFLC6L3207K--	3200	170 (6.693)	170 (6.693)	150	35	0.89	1.9	12.4
FFLC6L4307K--	4300	240 (9.449)	145 (5.709)	300	38	0.52	1.1	15.5
FFLC6L2737K--	2730	170 (6.693)	145 (5.709)	170	30	0.75	1.6	11.3
FFLC6L2537K--	2530	240 (9.449)	95 (3.740)	300	35	0.36	0.8	10.3
FFLC6L1607K--	1600	170 (6.693)	95 (3.740)	170	28	0.51	1.2	7.3
U_N dc : 1200 V								
FFLC6U3527K--	3520	240 (9.449)	170 (6.693)	250	40	0.71	1.2	18.8
FFLC6U2247K--	2240	170 (6.693)	170 (6.693)	150	35	1.1	1.9	12.7
FFLC6U3007K--	3000	240 (9.449)	145 (5.709)	300	38	0.60	1.1	15.5
FFLC6U1907K--	1900	170 (6.693)	145 (5.709)	170	30	0.87	1.6	11.3
FFLC6U1757K--	1750	240 (9.449)	95 (3.740)	300	35	0.41	0.8	10.3
FFLC6U1127K--	1120	170 (6.693)	95 (3.740)	170	28	0.59	1.2	7.3

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

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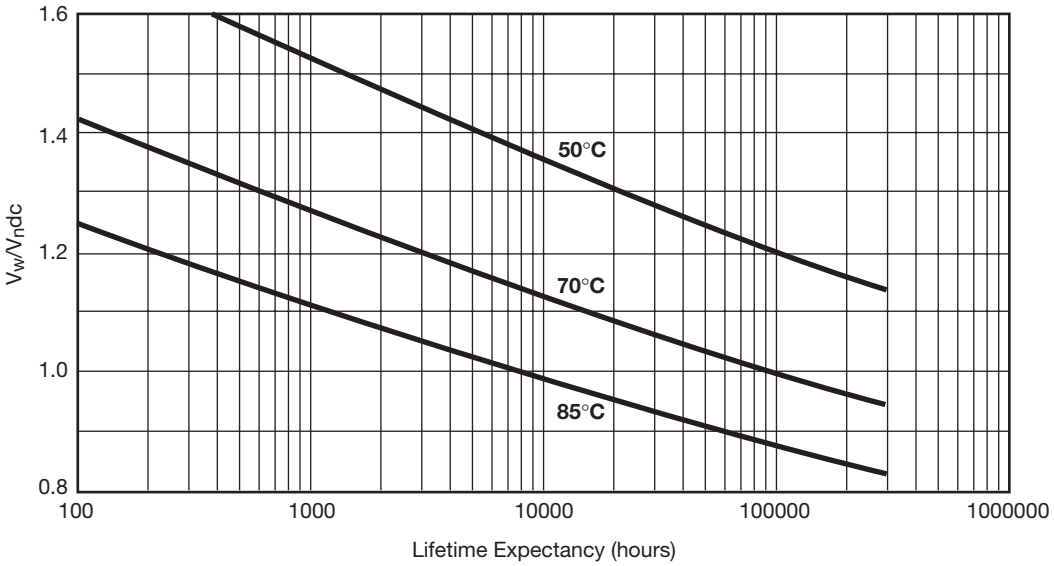
LIFETIME EXPECTANCY vs HOT SPOT TEMPERATURE AND VOLTAGE



V_W: permanent working or operating DC-voltage.

ELECTRICAL CHARACTERISTICS

Climatic category 40/85/56 (IEC 60068)

FFLC overvoltage: (V_S): V_S = 2 $V_n$dc and limited at 2100V

Maximum overvoltage	Peak value	Maximum duration
	1.67 $V_n$dc	100 ms 1 time per week
	1.25 $V_n$dc	100 ms 1 time per day
	1.1 $V_n$dc	1 min 1 time per day

Test voltage between terminals @ 25°C
1.5 x $V_n$dc for 10s

Test voltage between terminals and case @ 25°C
@ 4 kVrms @ 50 Hz for 1 min.

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

HOT SPOT CALCULATION

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

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

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

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

where C_n in Farad, I_{rms} in Ampere, f in Hertz
V in Volt, R_s in Ohm, θ in °C
R_{th} in °C/W