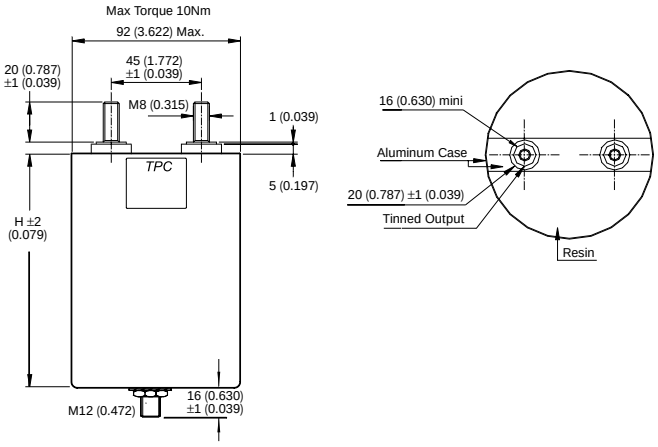
Medium Power Film Capacitors

FFLI Design

DC FILTERING

PACKAGING - also available with female connections

Cylindrical resin-filled aluminum case.



ELECTRICAL CHARACTERISTICS

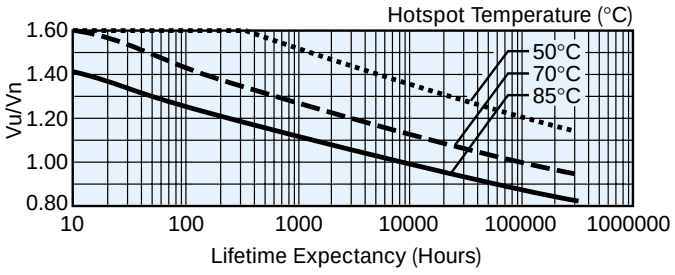
Capacitance range C_n	160µF to 390µF
Tolerance on C_n	±10%
Rated DC voltage $V_n$dc	1000 to 1200 V
Maximum rms current I_{rms} max	60 Arms
Stray inductance L_s	60 nH to 85 nH
Test voltage between terminals @ 25°C	1.5 $V_n$dc 10 s
Test voltage between terminals and case @25°C	4 kVrms @ 50 Hz during 1 min.

POLYPROPYLENE DIELECTRIC

mm (inches)

Capacitance (µF)	Height	I_{rms} (A)	Ls (nH)	Rs (mΩ)	Rth (°C/W)	Weight (kg)	Part Number
$V_n$dc = 1000 V							
390	145 (5.709)	60	85	5.2	2.4	1.2	FFLI6L0397K--
230	97 (3.819)	60	60	3.5	3.1	0.8	FFLI6L0237K--
$V_n$dc = 1200 V							
270	145 (5.709)	60	85	6.1	2.4	1.2	FFLI6U0277K--
160	97 (3.819)	60	60	4.1	3.1	0.8	FFLI6U0167K--

LIFETIME EXPECTANCY



Vu: Operating or working voltage.

GENERAL CHARACTERISTICS

Maximum overvoltage (V_s): V_s = 1.8 $V_n$dc

Voltages and overvoltages withstanding for 100,000 hours at $V_n$dc and 50°C hot spot temperature:

Voltage Value	Duration
V_{dc} = 1.67 x $V_n$dc	≤ 100ms_1 time per day
+V_{dc} = 1.5 x $V_n$dc	5 min._1 time per day
+V_{dc} = 1.3 x $V_n$dc	2.5 hours_1 time per day
+V_{dc} = 1.1 x $V_n$dc	40% of the 0n-load duration
+V_{do} = $V_n$dc	≅50% of the 0n-load duration
Sum	100,000 hours

HOT SPOT CALCULATION

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

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

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

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

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

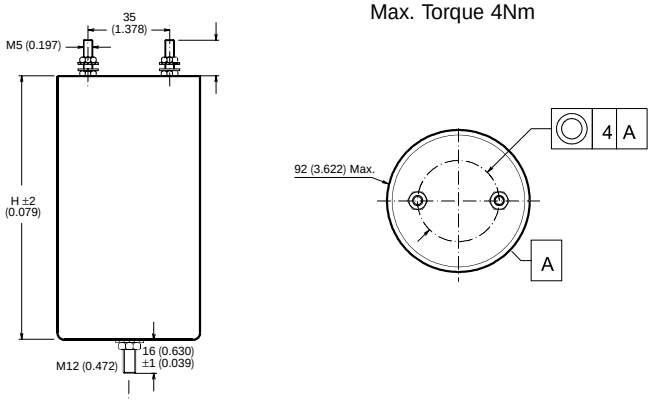
Medium Power Film Capacitors

FFLT Design

DC FILTERING

PACKAGING

Cylindrical resin-filled aluminum case.



ELECTRICAL CHARACTERISTICS

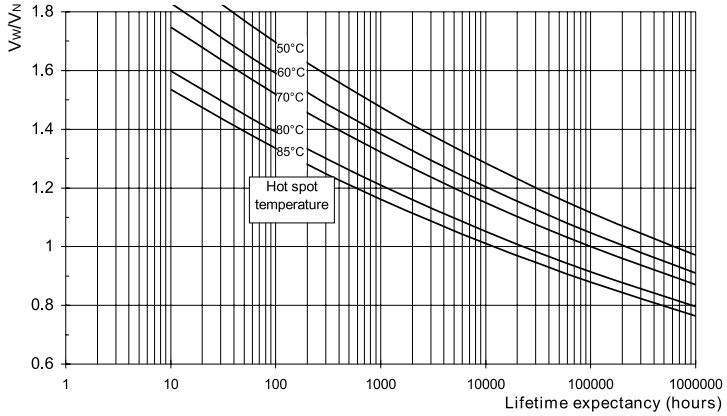
Capacitance range C_n	160µF to 600µF
Tolerance on C_n	±10%
Rated DC voltage $V_n$dc	600 to 900 V
Maximum rms current I_{rms} max	40 Arms
Stray inductance L_s	60 nH to 85 nH
Test voltage between terminals @ 25°C	1.5 $V_n$dc 10 s
Test voltage between terminals and case @25°C	2.5 kVrms @ 50 Hz during 1 min.

POLYPROPYLENE DIELECTRIC

mm (inches)

Capacitance (µF)	Height	I_{rms} (A)	Ls (nH)	Rs (mΩ)	Rth (°C/W)	Weight (kg)	Part Number
$V_n$dc = 600 V							
600	145 (5.709)	40	85	2.7	2.4	1.2	FFLT6K0607K--
350	97 (3.819)	40	60	2	3.1	0.8	FFLT6K0357K--
$V_n$dc = 750 V							
390	145 (5.709)	40	85	3.1	2.4	1.2	FFLT6A0397K--
230	97 (3.819)	40	60	2.2	3.1	0.8	FFLT6A0237K--
$V_n$dc = 900 V							
270	145 (5.709)	40	85	3.6	2.4	1.2	FFLT6C0277K--
160	97 (3.819)	40	60	2.5	3.1	0.8	FFLT6C0167K--

LIFETIME EXPECTANCY



GENERAL CHARACTERISTICS

Climatic category 40/85/56 (IEC 68)

Maximum overvoltage	Peak value	Maximum duration
	2 $V_n$dc	100 ms 1 time per week
	1.5 $V_n$dc	100 ms 1 time per day
	1.3 $V_n$dc	1 min 1 time per day
	1.1 $V_n$dc	1 h 1 time per day

STANDARDS

IEC 1071-1
IEC 1071-2: Power electronic capacitors
IEC 68-1: Environmental testing
IEC 77: Rules for electric traction equipment
UL 94: Fire requirements
NF F 16-101
NF F 16-102: Fire and smoke requirements

HOT SPOT CALCULATION

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

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

$\Rightarrow [\ ½ \times C_n \times (V_{peak\ to\ peak})^2 \times f\ ] \times (2 \times 10^{-4})$

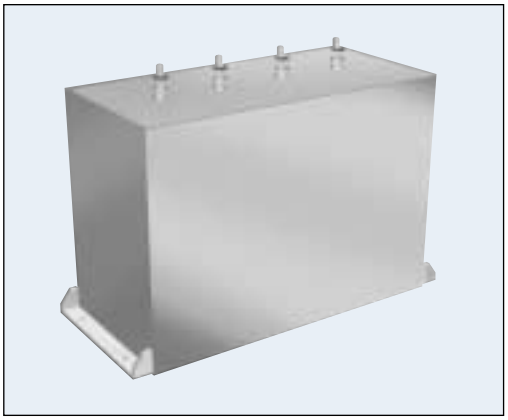
P_t (Thermal losses) $= R_s \times (I_{rms})^2$

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

Medium Power Film Capacitors

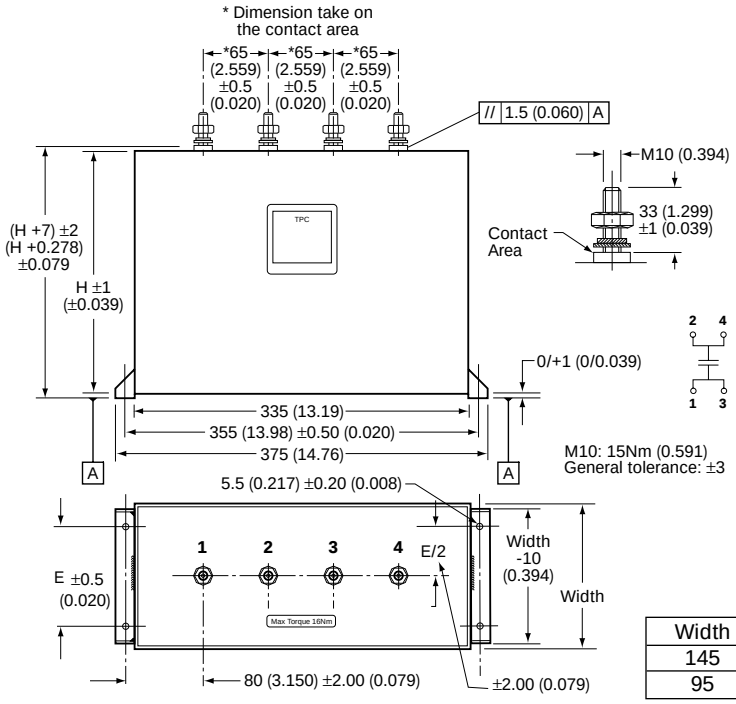
FFLC/FFLP Design

DC FILTERING



PACKAGING

Non-painted rectangular resin filled aluminum case 4 x M10 terminals.



Width	E
145	100
95	50

ELECTRICAL CHARACTERISTICS

Capacitance range C_n	1120µF to 6600µF (other values available upon request)
Tolerance on C_n	±10%
Rated DC voltage $V_n$dc	600 to 1100 V
Maximum rms current I_{rms} max	170 Arms to 300 Arms
Stray inductance L_s	28 nH to 38 nH

POLYPROPYLENE DIELECTRIC

Dimensions: millimeters (inches)

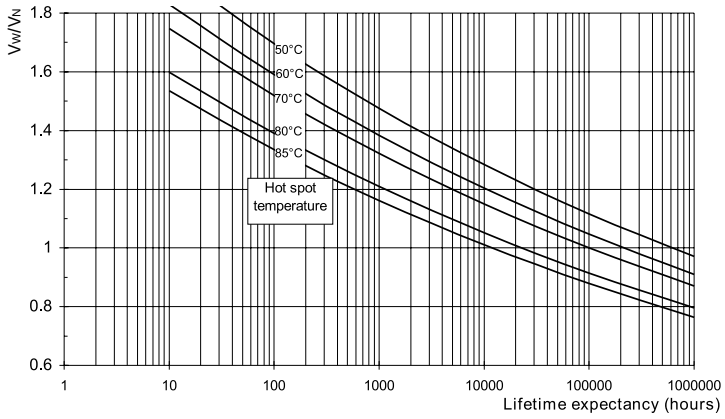
Capacitance (µF)	Height	Width	I_{rms} (A)	Ls (nH)	Rs (mΩ)	Rth (°C/W)	Weight (kg)	Part Number
$V_n$dc = 600 V								
6600	240 (9.449)	145 (5.709)	300	38	0.19	2.2	15.5	FFLP6K6607K--
4200	170 (6.693)	145 (5.709)	200	30	0.28	3.3	11.3	FFLP6K4207K--
$V_n$dc = 900 V*								
4300	240 (9.449)	145 (5.709)	300	38	0.52	1.1	15.5	FFLC6C4307K--
2730	170 (6.693)	145 (5.709)	170	30	0.75	1.6	11.3	FFLC6C2737K--
2530	240 (9.449)	95 (3.740)	300	35	0.36	0.8	10.3	FFLC6C2537K--
1600	170 (6.693)	95 (3.740)	170	28	0.51	1.2	7.3	FFLC6C1607K--
$V_n$dc = 1100 V**								
3000	240 (9.449)	145 (5.709)	300	38	0.60	1.1	15.5	FFLC6L3007K--
1900	170 (6.693)	145 (5.709	170	30	0.87	1.6	11.3	FFLC6L1907K--
1750	240 (9.449)	95 (3.740)	300	35	0.41	0.8	10.3	FFLC6L1757K--
1120	170 (6.693)	95 (3.740)	170	28	0.59	1.2	7.3	FFLC6L1127K--

*Available at 1000 VDC upon request
**Available at 1200 VDC upon request

Medium Power Film Capacitors

FFLC/FFLP Design

LIFETIME EXPECTANCY



GENERAL CHARACTERISTICS

Climatic category 40/85/56 (IEC 68)

FFLC overvoltage: (V_s): $V_s = 2\ V_n dc$

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 1071-1
IEC 1071-2: Power electronic capacitors
IEC 68-1: Environmental testing
IEC 77: Rules for electric traction equipment
UL 94: Fire requirements
NF F 16-101
NF F 16-102: Fire and smoke requirements

HOT SPOT CALCULATION

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

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

$\Rightarrow [\ ½ \times C_n \times (V_{peak\ to\ peak})^2 \times f\ ] \times (2 \times 10^{-4})$

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

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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Kyocera AVX:

FFLI6L0397K--