

Medium Power Film Capacitors

FLC (RoHS Compliant)



PACKAGING MATERIAL

- Self-extinguishing plastic case (V₀ = in accordance with UL 94) filled thermosetting resin.
- Self-extinguishing thermosetting resin (V₀ = in accordance with UL 94).

STANDARDS

- IEC 61071-1, IEC 61071-2: Power electronic capacitors
- IEC 60384-17: Fixed metallized polypropylene film dielectric AC and pulse capacitors
- IEC 60384-17-1: Fixed metallized polypropylene film dielectric AC and pulse capacitors Assessment level E

The FLC series uses a non-impregnated metallized polypropylene dielectric specially treated to have a very high dielectric strength in operating conditions up to 85°C. The FLC has been designed for printed circuit board mounting. They are suitable for output AC filtering for power converters, UPS systems, solar inverters and motor drives etc.

APPLICATIONS

- The FLC capacitor is particularly designed for AC filtering.

HOT SPOT CALCULATION

See *Hot Spot Temperature*, page 2.

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

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

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

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

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.

HOW TO ORDER

FLC	A	6	V	0225	K	2	C	
Series	Case	Dielectric	Voltage	Cap µF Code	Tolerances	Lead Type	Lead Length	
	A I B J C K D L E M F N G O H	6 = Polypropylene	H = 300V I = 350V A = 250V	0225 = 2.5µF 0106 = 10µF	J = ±5% K = ±10%	2 = 2 Leads 4 = 4 Leads	C = 5mm L = 15mm	



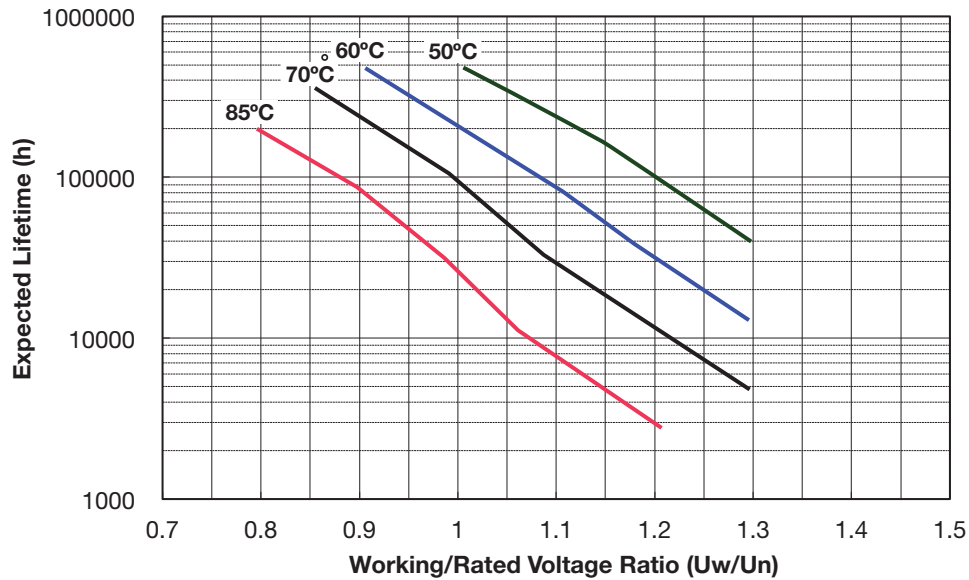
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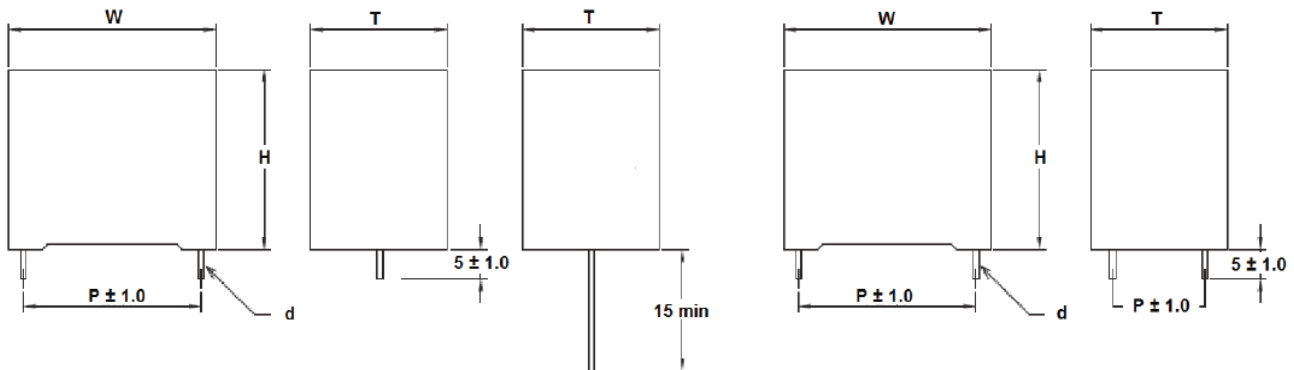
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LIFETIME EXPECTANCY VS HOT SPOT TEMPERATURE AND VOLTAGE

Expected Lifetime Curves (FLC Series)



GENERAL DESCRIPTION



DIMENSIONS

Two Terminal Version

AVX Case Ref	W (mm)	H (mm)	T (mm)	P (mm)	d (mm)
A	32	22	13	27.5	0.8
B	32	28	14	27.5	0.8
C	32	33	18	27.5	0.8
D	42.5	40	20	37.5	1.0
E	42.5	43	28	37.5	1.0
F	42.5	44	24	37.5	1.0
G	42.5	45	30	37.5	1.2
H	57.5	45	30	52.5	1.2
I	57.5	50	35	52.5	1.2

Four Terminal Version

AVX Case Ref	W (mm)	H (mm)	T (mm)	P (mm)	P1 (mm)	d (mm)
J	42.5	40	20	37.5	10.2	1.2
K	42.5	43	28	37.5	10.2	1.2
L	42.5	44	24	37.5	10.2	1.2
M	42.5	45	30	37.5	20.3	1.2
N	57.5	45	30	52.5	20.3	1.2
O	57.5	50	35	52.5	20.3	1.2



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ELECTRICAL CHARACTERISTICS

Climatic category	40/85/56 (IEC 60068)
Test voltage between terminals @ 25°C	2.15 x V _{rms}
Capacitance range C _n	1.0µF to 50µF
Capacitance Tolerances:	±5%, ±10%
Rated AC Voltage:	V _{rms} 250V to 350V
Dielectric:	Polypropylene
Insulation Resistance:	> 3,000MΩ µF/C after 1 minute electrification @ 100 Vdc & 25°C
Lifetime (ΔC/C < 5%):	100,000hrs @ U _r & 70°C

RATINGS AND PART NUMBER REFERENCE – POLYPROPYLENE DIELECTRIC

TWO TERMINAL

Cap (µF)	Rated Voltage (V)	AVX Part Number	Case Code	W ±0.50 (mm)	H ±0.50 (mm)	T ±0.50 (mm)	P ±1.00 (mm)	d ±0.50 (mm)	V/µs (Volt/sec)	I Peak (A)	I rms (A)	R _s (mΩ)	ESL (nH)	Rth (°C/W)	Packaging Method	
V_{rms} = 250V Voltage Code: A															Box Qty (mm)	Dimensions
2.2	250	FLCA6A0225K2C	A	32.0	22	13.0	27.5	0.8	25.0	55.0	4.0	17.0	24.0	36.8	130	350*170*80
3.3	250	FLCB6A0335K2C	B	32.0	28	14.0	27.5	0.8	25.0	82.5	6.0	11.6	24.0	23.9	110	350*170*80
5.0	250	FLCC6A0505K2C	C	32.0	33	18.0	27.5	0.8	25.0	125	8.0	8.0	27.0	19.5	95	350*170*80
10.0	250	FLCD6A0106K2C	D	42.5	40	20.0	37.5	1.0	17.0	170	11.0	7.4	30.0	11.2	56	350*170*80
18.0	250	FLCE6A0186K2C	E	42.5	43	28.0	37.5	1.0	17.0	306	12.0	4.0	30.0	17.4	35	350*170*80
20.0	250	FLCG6A0206K2C	G	42.5	45	30.0	37.5	1.2	17.0	340	14.0	3.8	33.0	13.4	44	350*170*80
25.0	250	FLCH6A0256K2C	H	57.5	45	30.0	52.5	1.2	11.0	275	17.0	6.5	35.0	5.3	25	350*170*80
30.0	250	FLCI6A0306K2C	I	57.5	50	35.0	52.5	1.2	11.0	330	20.0	5.4	38.0	4.6	20	350*170*80
40.0	250	FLCI6A0406K2C	I	57.5	50	35.0	52.5	1.2	11.0	440	19.0	5.8	38.0	4.8	20	350*170*80
50.0	250	FLCI6A0506K2C	I	57.5	50	35.0	52.5	1.2	12.0	600	21.0	5.5	38.0	4.1	20	350*170*80
V_{rms} = 300V Voltage Code: H																
1.5	300	FLCA6H0155K2C	A	32.0	22	13.0	27.5	0.8	28.0	42.0	4.0	21.2	24.0	29.5	130	350*170*80
2.5	300	FLCB6H0255K2C	B	32.0	28	14.0	27.5	0.8	28.0	70.0	6.0	14.4	24.0	19.3	110	350*170*80
3.3	300	FLCC6H0335K2C	C	32.0	33	18.0	27.5	0.8	28.0	92.4	8.0	10.6	27.0	14.7	95	350*170*80
10.0	300	FLCF6H0106K2C	F	42.5	44	24.0	37.5	1.0	19.0	190	12.0	6.0	30.0	11.6	42	350*170*80
12.0	300	FLCE6H0126K2C	E	42.5	43	28.0	37.5	1.0	19.0	228	12.0	5.0	30.0	13.9	35	350*170*80
15.0	300	FLCG6H0156K2C	G	42.5	45	30.0	37.5	1.2	19.0	285	12.0	4.2	33.0	16.5	44	350*170*80
20.0	300	FLCH6H0206K2C	H	57.5	45	30.0	52.5	1.2	13.0	260	16.0	6.8	35.0	5.7	25	350*170*80
25.0	300	FLCI6H0256K2C	I	57.5	50	35.0	52.5	1.2	13.0	325	19.0	5.4	38.0	5.1	20	350*170*80
V_{rms} = 350V Voltage Code: I																
1.0	350	FLCA6I0105K2C	A	32.0	22	13.0	27.5	0.8	35.0	35.0	4.0	23.5	24.0	26.6	130	350*170*80
1.8	350	FLCB6I0185K2C	B	32.0	28	14.0	27.5	0.8	35.0	63.0	6.0	16.5	24.0	16.8	110	350*170*80
2.5	350	FLCC6I0255K2C	C	32.0	33	18.0	27.5	0.8	35.0	87.5	8.0	11.3	27.0	13.8	95	350*170*80
7.5	350	FLCF6I0755K2C	F	42.5	44	24.0	37.5	1.0	24.0	180	10.0	7.5	30.0	13.3	42	350*170*80
9.0	350	FLCE6I0905K2C	E	42.5	43	28.0	37.5	1.0	24.0	216	10.0	6.2	30.0	16.1	35	350*170*80
10.0	350	FLCG6I0106K2C	G	42.5	45	30.0	37.5	1.2	24.0	240	10.0	4.8	33.0	20.8	44	350*170*80
12.0	350	FLCH6I0126K2C	H	57.5	45	30.0	52.5	1.2	17.0	204	17.0	6.5	35.0	5.3	25	350*170*80
20.0	350	FLCI6I0206K2C	I	57.5	50	35.0	52.5	1.2	17.0	340	20.0	5.8	38.0	4.3	20	350*170*80

* 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 AVX for any special requirements.
 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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FOUR TERMINAL

Cap (µF)	Rated Voltage (V)	AVX Part Number	Case Code	W ±0.50 (mm)	H ±0.50 (mm)	T ±0.50 (mm)	P ±1.00 (mm)	P1 ±1.00 (mm)	d ±0.50 (mm)	V/µs (Volt/sec)	I Peak (A)	I rms (A)	R _s (mΩ)	ESL (nH)	Rth (°C/W)	Packaging Method	
V_{rms} = 250V Voltage Code: A																	
																Box Qty (mm)	Dimensions
10.0	250	FLCJ6A0106K4C	J	42.5	40	20.0	37.5	10.2	1.2	17.0	170.0	12.0	6.9	30.0	10.1	56	350*170*80
18.0	250	FLCK6A0186K4C	K	42.5	43	28.0	37.5	10.2	1.2	17.0	306.0	13.0	3.5	30.0	16.9	35	350*170*80
20.0	250	FLCM6A0206K4C	M	42.5	45	30.0	37.5	20.3	1.2	17.0	340.0	15.0	3.3	33.0	13.5	44	350*170*80
25.0	250	FLCN6A0256K4C	N	57.5	45	30.0	52.5	20.3	1.2	11.0	275.0	18.0	6.0	35.0	5.1	25	350*170*80
30.0	250	FLCN6A0306K4C	N	57.5	45	30.0	52.5	20.3	1.2	11.0	330.0	21.0	4.9	35.0	4.6	20	350*170*80
40.0	250	FLCO6A0406K4C	O	57.5	50	35.0	52.5	20.3	1.2	11.0	440.0	20.0	5.3	38.0	4.7	20	350*170*80
50.0	250	FLCO6A0506K4C	O	57.5	50	35.0	52.5	20.3	1.2	12.0	600.0	22.0	5.0	38.0	4.1	20	350*170*80
V_{rms} = 300V Voltage Code: H																	
10.0	300	FLCL6H0106K4C	L	42.5	44	24.0	37.5	10.2	1.2	19.0	190.0	13.0	5.5	30.0	10.8	42	350*170*80
12.0	300	FLCK6H0126K4C	K	42.5	43	28.0	37.5	10.2	1.2	19.0	228.0	13.0	4.5	30.0	13.1	35	350*170*80
15.0	300	FLCM6H0156K4C	M	42.5	45	30.0	37.5	20.3	1.2	19.0	285.0	13.0	3.8	33.0	15.6	44	350*170*80
20.0	300	FLCN6H0206K4C	N	57.5	45	30.0	52.5	20.3	1.2	13.0	260.0	17.0	6.3	35.0	5.5	25	350*170*80
25.0	300	FLCO6H0256K4C	O	57.5	50	35.0	52.5	20.3	1.2	13.0	325.0	20.0	4.9	38.0	5.1	20	350*170*80
V_{rms} = 350V Voltage Code: I																	
7.5	350	FLCL6I0755K4C	L	42.5	44	24.0	37.5	10.2	1.2	24.0	180.0	11.0	7.0	30.0	11.8	42	350*170*80
9.0	350	FLCK6I0905K4C	K	42.5	43	28.0	37.5	10.2	1.2	24.0	216.0	11.0	5.7	30.0	14.5	35	350*170*80
10.0	350	FLCM6I0106K4C	M	42.5	45	30.0	37.5	20.3	1.2	24.0	240.0	11.0	4.3	33.0	19.2	44	350*170*80
12.0	350	FLCN6I0126K4C	N	57.5	45	30.0	52.5	20.3	1.2	17.0	204.0	18.0	6.0	35.0	5.1	25	350*170*80
20.0	350	FLCO6I0206K4C	O	57.5	50	35.0	52.5	20.3	1.2	17.0	340.0	21.0	5.3	38.0	4.3	20	350*170*80

* 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 AVX for any special requirements.
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