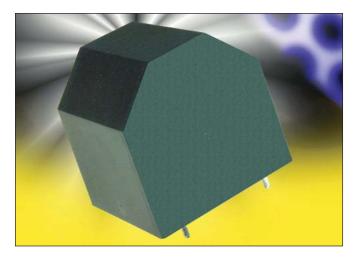
Medium Power Film Capacitors

FFV3 (RoHS Compliant)

DC FILTERING



APPLICATIONS

The FFV3 capacitors are particularly designed for DC filtering, low reactive power.

STANDARDS

IEC 61071-1, IEC 61071-2: Power electronic capacitors

IEC 60384-16: Fixed metallized polypropylene

film dielectric DC capacitors

IEC 60384-16-1: Fixed metallized polypropylene

film dielectric DC capacitors Assessment level E

IEC 60384-17: Fixed metallized polypropylene

film dielectric AC and pulse capacitors

Capacitors

IEC 60384-17-1: Fixed metallized polypropylene

film dielectric AC and pulse

capacitors

Assessment level E

IEC 60384-2: Fixed metallized polyester

capacitors

LIFETIME EXPECTANCY

One unique feature of this technology (as opposed to electrolytics) is how the capacitor reacts at the end of its lifetime. Unlike aluminum, electrolytics film capacitors do not have a catastrophic failure mode. Film capacitors simply experience a parametric loss of capacitance of about 2%, with no risk of short circuit.

Please note that this is theoretical, however, as the capacitor continues to be functional even after this 2% decrease.

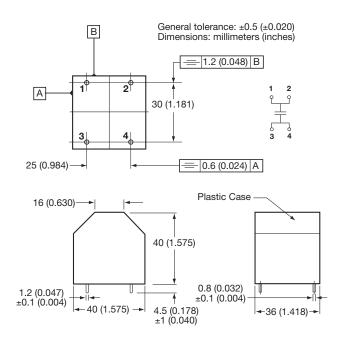
PACKAGING MATERIAL

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

Self-extinguishing thermosetting resin (V0 = in accordance with UL 94; I3F2 = in accordance with NF F 16-101).

The series uses a non-impregnated metallized polypropylene or polyester dielectric, with the controlled self-healing process, specially treated to have a very high dielectric strength in operating conditions up to 105°C.

The FFV3 has been designed for printed circuit board mounting.



HOT SPOT CALCULATION

See Hot Spot Temperature, page 3.

 $\theta_{hot spot} = \theta_{ambient} + (P_d + P_t) \times (R_{th} + 7.4)$

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

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

 \Rightarrow [½ x C_n x (V_{peak to peak})² x f] x tg δ_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. For polyester, $tg\delta_0$ values are shown in graph 4 on page 3.

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

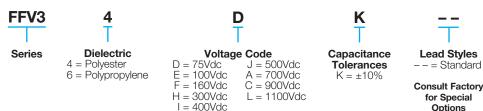


Medium Power Film Capacitors



FFV3 (RoHS Compliant) for Low Voltage Applications

HOW TO ORDER



ELECTRICAL CHARACTERISTICS – POLYESTER DIELECTRIC

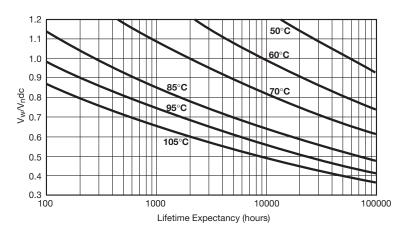
Climatic category	40/105/56 (IEC 60068)
Test voltage between terminals @ 25°C	1.5 x V _n dc during 10s
Test voltage between terminals and case @ 25°C "	@ 4 kVrms @ 50 Hz during 1 min.
Capacitance range C _n	30μF to 160μF
Tolerance on C _n	±10%
Rated DC voltage V _n dc	75 to 400 V
Dielectric	polyester
Max Stray Inductance	15nH

40/105/56 (IEC 60060)

RATINGS AND PART NUMBER REFERENCE - POLYESTER DIELECTRIC

Part Number	Capacitance (µF)	I _{rms max.} (A)	(I2t) _{10 shots} (A ² s)	(I2t) _{1000 shots} (A ² s)	$ m m{R_s}$ (m Ω)	R _{th} (°C/W)	Typical Weight (g)	
V _n dc = 75 V Vrms = 45 v max Voltage Code: D								
FFV34D0137K	130	23	370	37	0.56	5.60	90	
FFV34D0167K	160	28	560	56	0.47	5.00	90	
V _n dc = 100 V Vrms = 60 v max Voltage Code: E								
FFV34E0806K	80	19	250	25	0.67	6.16	90	
FFV34E0107K	100	24	390	39	0.55	5.42	90	
V _n dc = 160 V Vrms = 75 v max Voltage Code: F								
FFV34F0556K	55	17	180	18	0.77	6.56	90	
FFV34F0656K	65	20	260	26	0.66	5.97	90	
V _n dc = 300 V Vrms = 90 v max Voltage Code: H								
FFV34H0406K	40	20	150	15	2.80	9.58	90	
FFV34H0506K	50	26	230	23	2.25	8.46	90	
V _n dc = 400 V Vrms = 105 v max Voltage Code: I								
FFV34I0306K	30	17	110	11	2.93	9.92	90	
FFV34I0406K	40	23	200	20	2.21	8.41	90	

LIFETIME EXPECTANCY vs V_W/V_n AND HOT SPOT TEMPERATURE POLYESTER DIELECTRIC



Vw = Permanent working or operating DC voltage.



Medium Power Film Capacitors



FFV3 (RoHS Compliant) DC for Medium and High Voltage Applications

DC FILTERING

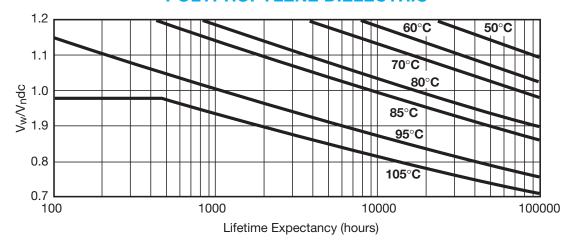
ELECTRICAL CHARACTERISTICS - POLYPROPYLENE DIELECTRIC

Climatic category	40/105/56 (IEC 60068)
Test voltage between terminals @ 25°C	1.5 x V _n dc during 10s
Test voltage between terminals and case @ 25°C "	@ 4 kVrms @ 50 Hz during 1 min.
Capacitance range C _n	6μF to 25μF
Tolerance on C _n	±10%
Rated DC voltage V _n dc	500 to 1100 V
Dielectric	polypropylene
Max Stray Inductance	15nH

RATINGS AND PART NUMBER REFERENCE - POLYESTER DIELECTRIC

Part Number	Capacitance (µF)	I _{rms max.} (A)	(I ² t) _{10 shots} (A ² s)	(I ² t) _{1000 shots} (A ² s)	$\mathbf{R_s}$ (m Ω)	R _{th} (°C/W)	Typical Weight (g)	
V _n dc = 500 V Vrms = 105 v max Voltage Code: J								
FFV36J0206K	20	27	3200	320	5.88	3.53	90	
FFV36J0256K	25	33	5000	500	4.72	3.14	90	
	V _n dc = 700 V Vrms = 120 v max Voltage Code: A							
FFV36A0146K	14	21	2000	200	7.34	3.73	90	
FFV36A0206K	20	30	4200	420	5.15	3.05	90	
V _n dc = 900 V Vrms = 150 v max Voltage Code: C								
FFV36C0106K	10	19	1600	160	8.21	3.37	90	
FFV36C0136K	13	25	2800	280	6.33	2.91	90	
V _n dc = 1100 V Vrms = 180 v max Voltage Code: L								
FFV36L0605K	6	13	800	80	11.4	3.71	90	
FFV36L0905K	9	20	1900	190	7.61	2.92	90	

LIFETIME EXPECTANCY vs V_W/V_n AND HOT SPOT TEMPERATURE POLYPROPYLENE DIELECTRIC



Vw = Permanent working or operating DC voltage.