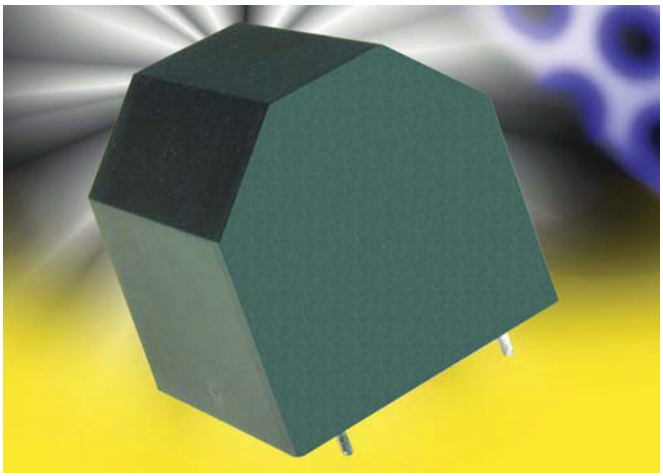
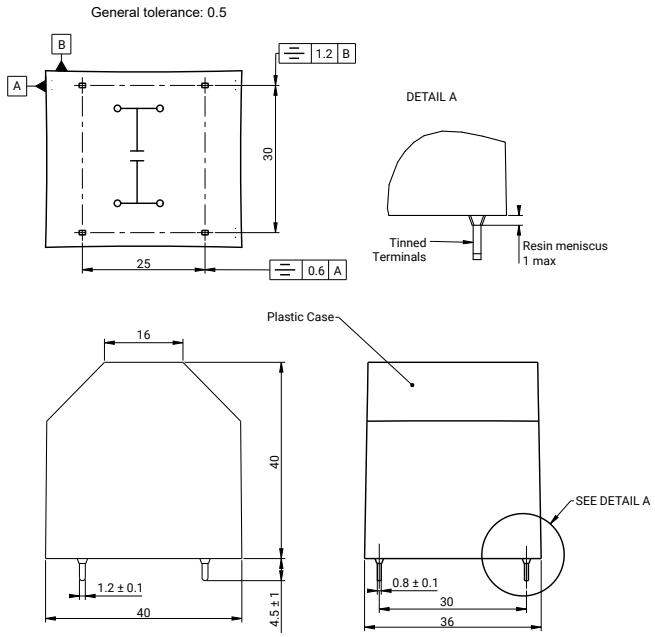
DC FILTERING

FFV3* RoHS Compliant



The series uses a 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. This is a dry solution for polypropylene and dry or wet for polyester. The FFV3 has been designed for printed circuit board mounting.



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
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).

HOT SPOT TEMPERATURE CALCULATION

$\Theta_{hot\ spot} = \Theta_{ambient} + (P_d + P_j) \times (R_{th} + 7.4)$ or
$\Theta_{hot\ spot} = \Theta_{case} + (P_d + P_j) \times R_{th}$

Dielectric losses = $P_d = Q \times tg\delta_0$

$P_d = [1/2 \times Cn \times (V_{peak\ to\ peak})^2 \times f\ ] \times tg\delta_0$
for polypropylene $tg\delta_0 = 2.10^{-4}$
for polyester $tg\delta_0$ value is shown in graph 4 page 3

Joules losses $P_j = R_s \times I_{rms}^2$

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	R_{th} : R_{th} case/hot spot in °C/W	

DC FILTERING

FFV3* for Low Voltage Applications RoHS Compliant

HOW TO ORDER

FFV3	4	D	K	––
Series	Dielectric	Voltage Code	Capacitance Tolerances	Lead Styles
	4 = Polyester 6 = Polypropylene	D = 75Vdc E = 100Vdc F = 160Vdc H = 300Vdc I = 400Vdc J = 525Vdc A = 720Vdc C = 900Vdc L = 1100Vdc	K = ±10%	– – = Standard Consult Factory for Special Options

RoHS COMPLIANT

ELECTRICAL CHARACTERISTICS – POLYESTER DIELECTRIC

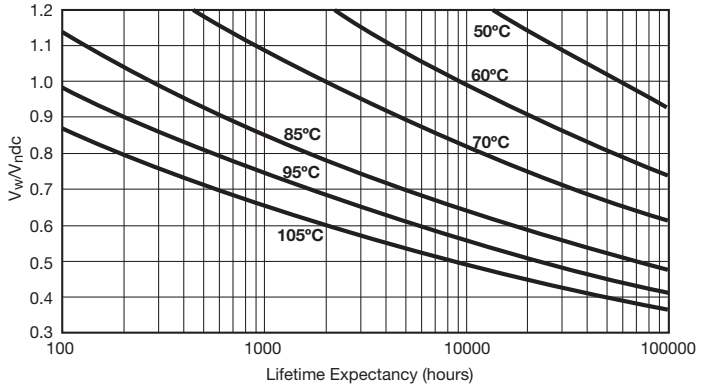
Items	Characteristics
Climatic category	40/105/56 (IEC 60068)
Test voltage between terminals @ 25°C	1.5 x $V_n$dc during 10s
Test voltage between terminals and case @ 25°C "	@ 4 kVrms @ 50 Hz during 1 min.
Capacitance range C_n	30µF to 160µF
Tolerance on C_n	±10%
Rated DC voltage $V_n$dc	75 to 400 V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

RATINGS AND PART NUMBER REFERENCE – POLYESTER DIELECTRIC

Part Number	Capacitance (µF)	$I_{rms\ max.}$ (A)	I^2t_{10} shots (A^2s)	$I^2t_{1000\ shots}$ (A^2s)	R_s (mΩ)	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	5.6	90
FFV34D0167K--	160	28	560	56	0.47	5	90
$V_n$dc = 100 V Vrms = 60 v max Voltage Code: E							
FFV34E0806K--	80	19	250	25	0.67	6.2	90
FFV34E0107K--	100	24	390	39	0.55	5.4	90
$V_n$dc = 160 V Vrms = 75 v max Voltage Code: F							
FFV34F0556K--	55	17	180	18	0.77	6.6	90
FFV34F0656K--	65	20	260	26	0.66	6	90
$V_n$dc = 300 V Vrms = 90 v max Voltage Code: H							
FFV34H0406K--	40	20	150	15	2.80	9.6	90
FFV34H0506K--	50	26	230	23	2.25	8.5	90
$V_n$dc = 400 V Vrms = 105 v max Voltage Code: I							
FFV34I0306K--*	30	17	110	11	2.93	9.9	90
FFV34I0406K--*	40	23	200	20	2.21	8.4	90

(*) Polyester dielectric film wet silicone

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



Vw = Permanent working or operating DC voltage.

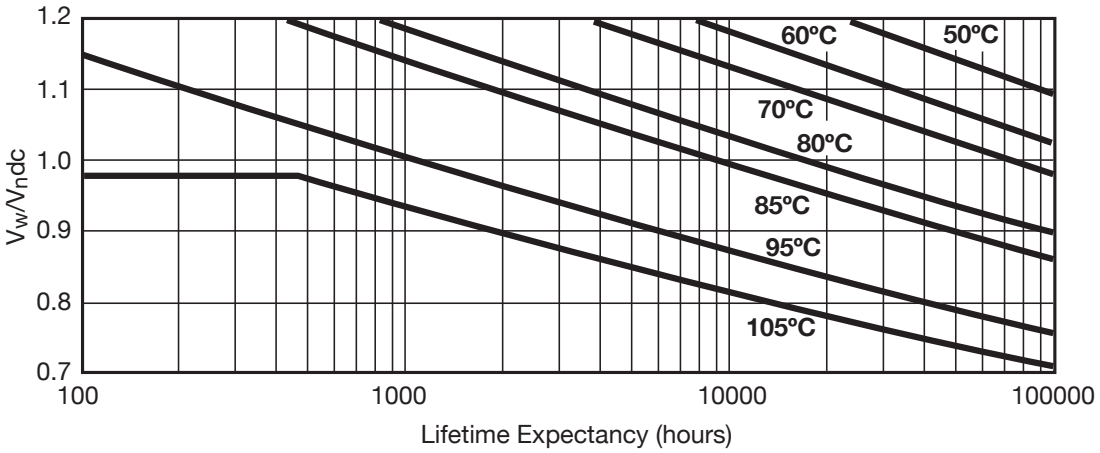
DC FILTERING ELECTRICAL CHARACTERISTICS – POLYPROPYLENE DIELECTRIC

Items	Characteristics
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 – POLYPROPYLENE DIELECTRIC

Part Number	Capacitance (µF)	$I_{rms\ max.}$ (A)	I^2t_{10} shots (A^2s)	$I^2t_{1000\ shots}$ (A^2s)	R_s (mΩ)	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	3.5	90
FFV36J0256K--	25	33	5000	500	4.72	3.1	90
$V_n$dc = 700 V Vrms = 120 v max Voltage Code: A							
FFV36A0146K--	14	21	2000	200	7.34	3.7	90
FFV36A0206K--	20	30	4200	420	5.15	3.1	90
$V_n$dc = 900 V Vrms = 150 v max Voltage Code: C							
FFV36C0106K--	10	19	1600	160	8.21	3.4	90
FFV36C0136K--	13	25	2800	280	6.33	2.9	90
$V_n$dc = 1100 V Vrms = 180 v max Voltage Code: L							
FFV36L0605K--	6	13	800	80	11.4	3.7	90
FFV36L0905K--	9	20	1900	190	7.61	2.9	90

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



Vw = Permanent working or operating DC voltage.