

Medium Power Film Capacitors



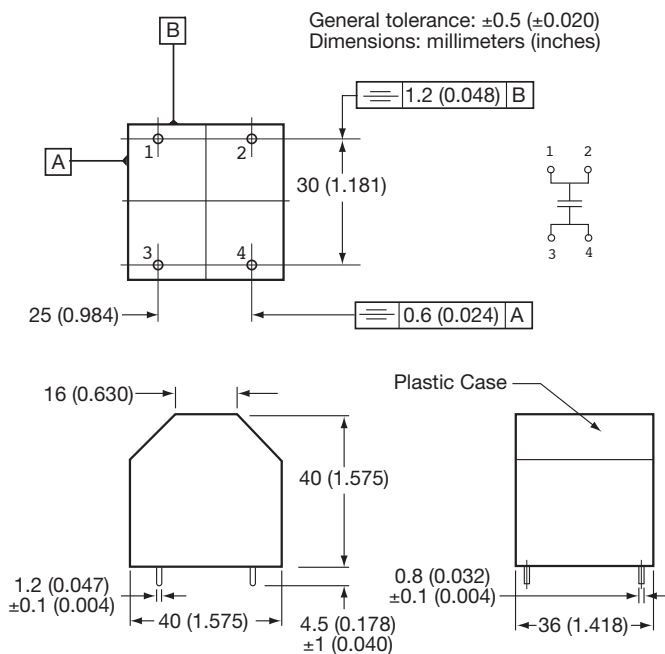
FAV (RoHS Compliant)

TUNING



DIMENSIONS

Case Size 3



APPLICATIONS

High reactive energy tuning for converters.
Protection of semi-conductors.

TECHNOLOGY

Metallized polypropylene film and metal foil.
Dry capacitor.

PACKAGING

Rectangular resin case.
4 leads 1.2 x 0.8mm for printed circuit board mounting.
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).

(Note that FFV3 and FAV3 are in the same packaging.)

STANDARDS

IEC 61071-1: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

HOT SPOT TEMPERATURE CALCULATION

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

with P_d (Dielectric losses) = $Q \times \text{tg}\delta_0$
 $\Rightarrow [\frac{1}{2} \times C \times (V_{\text{peak to peak}})^2 \times \text{fr}] \times 2 \cdot 10^{-4}$
 \Rightarrow Protections applications
 $\Rightarrow (V^2 \times C \times 2 \pi \text{Fr}) \times 2 \cdot 10^{-4}$
 \Rightarrow Tuning applications
 P_c (Joule losses) = $R_s \times (I_{\text{rms}})^2$

where

Q in Var R_s in Ohm R_{th} in °C/W

HOW TO ORDER

FAV

Series

3

Case Size
Case Size 3

6

Dielectric
6 = Polypropylene

K

Voltage Code
K = 600Vdc
B = 800Vdc
L = 1000Vdc
U = 1200Vdc
R = 1500Vdc
N = 2000Vdc

0125

Capacitance Code
0 + pF code
0125 = 1.2 μ F (1200nF)
0105 = 1.0 μ F (1000nF)
0154 = 0.15 μ F (150nF)
etc.

K

Capacitance Tolerances
K = $\pm 10\%$

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Terminal Code
-- = Standard



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ELECTRICAL CHARACTERISTICS

| | |
|---|---|
| Climatic category | 40/085/56 (IEC 60068) |
| Working temperature | hot spot temperature: -40°C to +85°C |
| Hot spot temperature | ≤85°C (must be calculated: see below) |
| Capacitance range C_n | 80 to 1200nF |
| Tolerance | ±10% |
| Rated AC voltage | $V_{nrms} = 300$ to 650 V |
| Rated DC voltage | $V_{ndc} = 600$ to 2000 V |
| Maximum rms current | $I_{rms\ max} = 10$ to 40 Arms |
| Maximum reactive power | $Q\ max = 7$ to 14 kvar |
| Stray inductance | 15 nH |
| Test voltage between terminals | $1.5 \times V_{ndc}$ 10s |
| Withstanding voltage between terminals and case | 3000 V_{rms} 60s |
| Dielectric | Polypropylene |

RATINGS AND PART NUMBER REFERENCE

| Part Number | Capacitance (nF) | $I_{rms\ max}$ (A) | $Q\ max$ (kV) | R_s (mΩ) | L_s (nH) | R_{th} (°C/W) | Typical Weight (g) |
|--|------------------|--------------------|---------------|------------|------------|-----------------|--------------------|
| V_{ndc} 600V V_{rms}: 300V | | | | | | | |
| FAV36K0125K-- | 1200 | 40 | 12 | 0.85 | 5 | 4 | 90 |
| FAV36K0105K-- | 1000 | 32 | 10 | 1 | 5 | 4.1 | 90 |
| V_{ndc} 800V V_{rms}: 400V | | | | | | | |
| FAV36B0804K-- | 800 | 35 | 14 | 0.9 | 5 | 4 | 90 |
| FAV36B0624K-- | 620 | 27 | 11 | 1.1 | 5 | 4.1 | 90 |
| V_{ndc} 1000V V_{rms}: 450V | | | | | | | |
| FAV36L0564K-- | 560 | 30 | 14 | 1 | 5 | 4 | 90 |
| FAV36L0474K-- | 470 | 25 | 12 | 1.2 | 5 | 4.1 | 90 |
| V_{ndc} 1200V V_{rms}: 500V | | | | | | | |
| FAV36U0334K-- | 330 | 21 | 11 | 1.4 | 5 | 4.2 | 90 |
| FAV36U0274K-- | 270 | 17 | 9 | 1.7 | 5 | 4.4 | 90 |
| V_{ndc} 1500V V_{rms}: 600V | | | | | | | |
| FAV36R0184K-- | 180 | 16 | 10 | 1.7 | 5 | 4.4 | 90 |
| FAV36R0154K-- | 150 | 13 | 8 | 2 | 5 | 4.5 | 90 |
| V_{ndc} 2000V V_{rms}: 650V | | | | | | | |
| FAV36N0124K-- | 120 | 15 | 10 | 1.7 | 5 | 4.6 | 90 |
| FAV36N0104K-- | 100 | 12 | 8 | 1.9 | 5 | 4.9 | 90 |
| FAV36N0803K-- | 80 | 10 | 7 | 2 | 5 | 5.2 | 90 |

LIFETIME EXPECTANCY

