# TUNING

## FAV* RoHS Compliant

## APPLICATIONS

• High Reactive Energy Tuning for Convertors

• Protection of Semi-Conductors

## TECHNOLOGY

Metallized polypropylene film and metal foil.

Dry or wet solution for voltages from 1200Vdc.

## PACKAGING

Rectangular resin case.

4 leads 1.2 x 0.8mm for printed circuit board mounting.

Self-extinguishing plastic case (V-0 = in accordance with UL 94; certified classification according to EN 45545-2) filled thermosetting resin.

Self-extinguishing thermosetting resin (V-0 = in accordance with UL 94; certified classifications according to EN 45545-2).

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

## STANDARDS

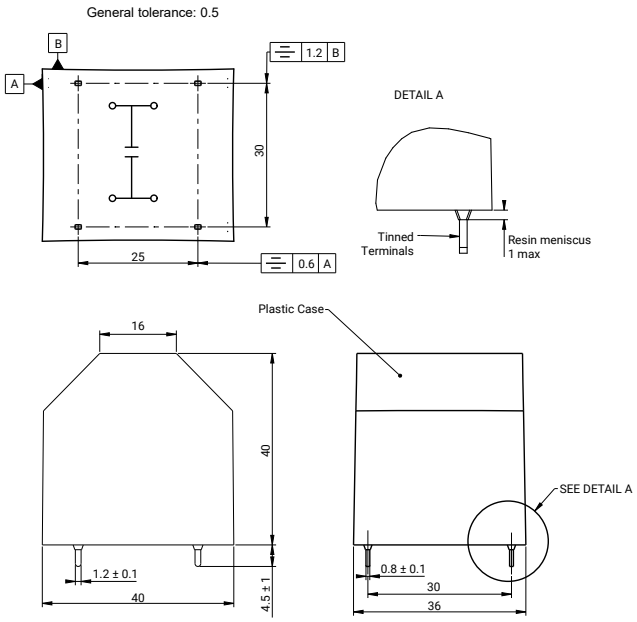
IEC 61071: Capacitors for power electronics

IEC 60068-1: Environmental testing - Part 1: general and guidance

UL 94: Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

## DIMENSIONS

### Case Size 3




## HOT SPOT TEMPERATURE CALCULATION

Total losses are calculated as follows: $P_t = P_j + P_d$

Joule losses: $P_j = R_s \times (I_{rms})^2$

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

- Q (reactive power) = $\frac{(I_{rms})^2}{C2\pi f}$ for a waveform of f frequency

- $tg\delta_0 = 2 \times 10^{-4}$ (dielectric losses of polypropylene)

Hot spot temperature will be:

$\Theta_{HS} = \Theta_{case} + (P_j + P_d) \times R_{th}$

or

$\Theta_{HS} = \Theta_{amb} + (P_j + P_d) \times (R_{th} + 7.4)$

## HOW TO ORDER

| FAV | 3 | 6 | K | 0125 | K | –– |
|---|---|---|---|---|---|---|
| **Series** | **Case Size**<br>Case Size 3 | **Dielectric**<br>6 = Polypropylene | **Voltage Code**<br>K = 600Vdc<br>B = 800Vdc<br>L = 1000Vdc<br>U = 1200Vdc<br>R = 1500Vdc<br>N = 2000Vdc | **Capacitance Code**<br>0 + pF code<br>0125 = 1.2µF (1200nF)<br>0105 = 1.0µF (1000nF)<br>0154 = 0.15µF (150nF)<br>etc. | **Capacitance Tolerances**<br>K = ±10% | **Terminal Code**<br>– – = Standard |

RoHS COMPLIANT



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## ELECTRICAL CHARACTERISTICS

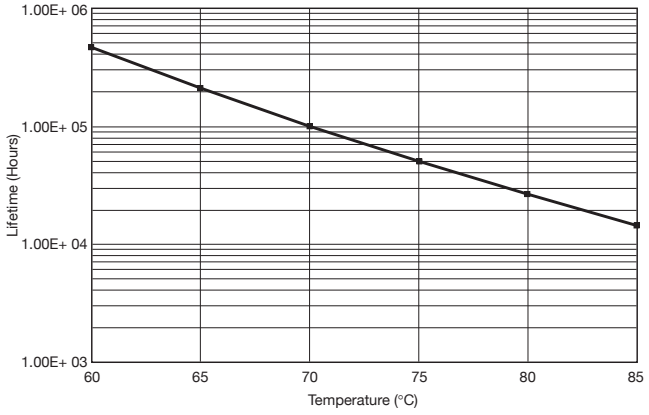
| | |
|---|---|
| **Climatic category** | 40/085/56 (IEC 60068) |
| **Working temperature** | hot spot temperature: -40°C to +85°C |
| **Hot spot temperature** | ≤85°C (must be calculated: see below) |
| **Capacitance range $C_n$** | 80 to 1200nF |
| **Tolerance** | ±10% |
| **Rated AC voltage** | $V_n$rms = 300 to 650 V |
| **Rated DC voltage** | $V_n$dc = 600 to 2000 V |
| **Maximum rms current** | Irms max = 10 to 40 Arms |
| **Maximum reactive power** | Q max = 7 to 14 kvar |
| **Stray inductance** | 15 nH |
| **Test voltage between terminals** | 1.5 x $V_n$dc 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) | Rs (mΩ) | Ls (nH) | Rth (°C/W) | Typical Weight (g) |
|---|---|---|---|---|---|---|---|
| **$V_n$dc 600V Vrms: 300V** | | | | | | | |
| FAV36K0125K-- | 1200 | 40 | 12 | 0.85 | 5 | 4 | 90 |
| FAV36K0105K-- | 1000 | 32 | 10 | 1 | 5 | 4.1 | 90 |
| **$V_n$dc 800V Vrms: 400V** | | | | | | | |
| FAV36B0804K-- | 800 | 35 | 14 | 0.9 | 5 | 4 | 90 |
| FAV36B0624K-- | 620 | 27 | 11 | 1.1 | 5 | 4.1 | 90 |
| **$V_n$dc 1000V Vrms: 450V** | | | | | | | |
| FAV36L0564K-- | 560 | 30 | 14 | 1 | 5 | 4 | 90 |
| FAV36L0474K-- | 470 | 25 | 12 | 1.2 | 5 | 4.1 | 90 |
| **$V_n$dc 1200V Vrms: 500V** | | | | | | | |
| *FAV36U0334K-- | 330 | 21 | 11 | 1.4 | 5 | 4.2 | 90 |
| *FAV36U0274K-- | 270 | 17 | 9 | 1.7 | 5 | 4.4 | 90 |
| **$V_n$dc 1500V Vrms: 600V** | | | | | | | |
| *FAV36R0184K-- | 180 | 16 | 10 | 1.7 | 5 | 4.4 | 90 |
| *FAV36R0154K-- | 150 | 13 | 8 | 2 | 5 | 4.5 | 90 |
| **$V_n$dc 2000V Vrms: 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 |

*Silicone oil could resweat in very low quantity (< 0.0X ml) without effect on reliability.

## LIFETIME EXPECTANCY





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