

FAV RANGE

Capacitor for Power Electronics

Preliminary data sheet



FAV

Applications

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

Technology

Metallized polypropylene film and metal foil .
Dry capacitor .

Presentation

Rectangular resin case .
4 leads 1.2 x 1.0 mm for printed circuit board mounting .

Electrical characteristics

Climatic category : 40/085/56 (IEC 68) .
Working temperature : hot spot temperature : - 40 to + 85°C .
hot spot temperature 85°C (must be calculated : see page up) .

Capacitance range : C = 80 to 1200nF .
Tolerance : $\pm 10\%$.

Rated ac voltage : $U_{nrms} = 300$ to 650 V .
Rated dc voltage : $U_{ndc} = 600$ 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 : $1.5 \times U_{ndc}$ 10 s .
Withstanding voltage between terminals and case : 3000 Vrms 60 s .

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Standards

IEC 1071-1, IEC 1071-2 : Power electronic capacitors .

IEC 68 -1 : Environmental testing .

IEC 77 : Rules for electric traction equipment .

UL 94 : fire requirements .

Hot spot temperature calculation

Hot spot = $\theta_{case} + (P_d + P_c) \times R_{th}$.

with

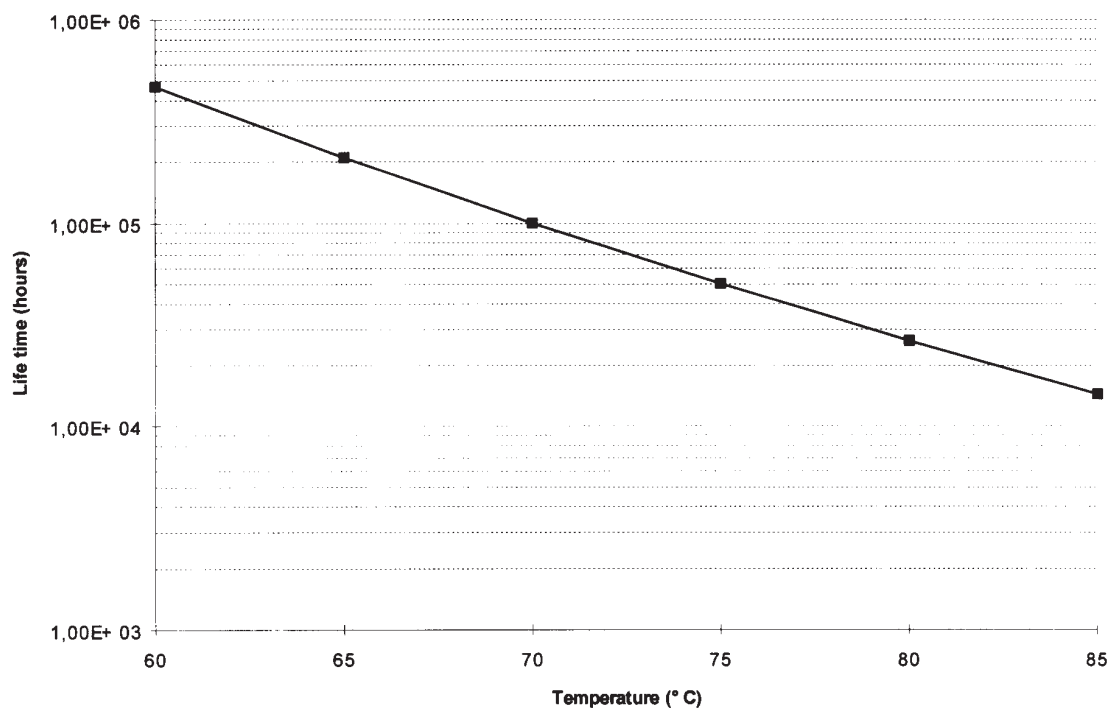
θ_{case} = temperature measured at the 2/3 of the height.

P_d (Dielectric losses) = $Q \times \text{tg}\delta_0 \Rightarrow [1/2 \times C \times (U_{\text{peak to peak}})^2 \times Fr] \times 2 \times 10^{-4} \Rightarrow$ Protections applications.

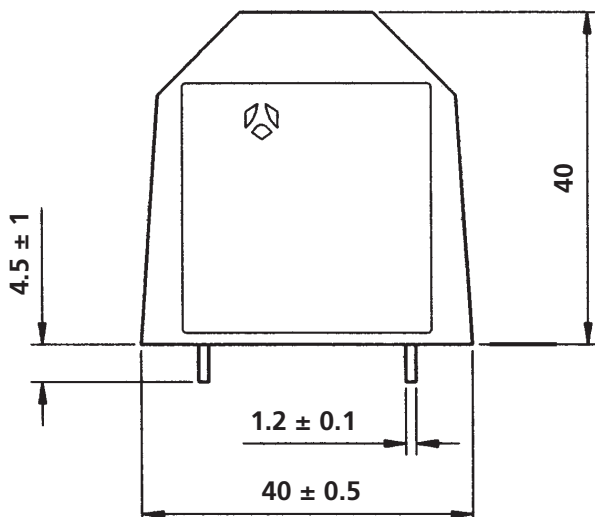
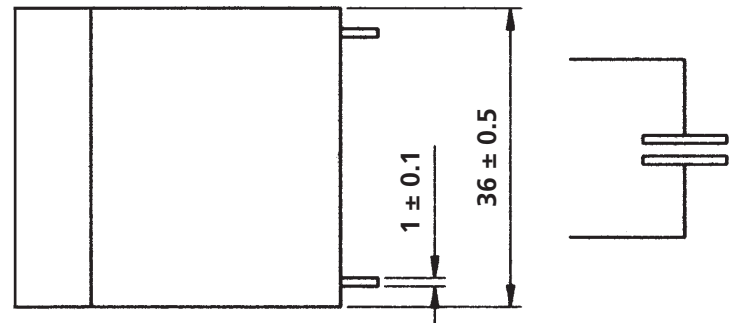
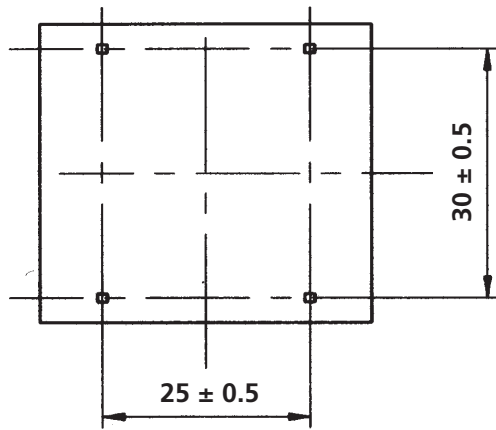
P_c (Joule losses) = $R_s \times (I_{rms})^2 \Rightarrow (U^2 C 2 \pi Fr) \times 2 \times 10^{-4} \Rightarrow$ Tuning applications.

Life time expectancy

Life time expectancy function of hot spot temperature



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Undc : 600 V Urms : 300 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
1200	40	12	0.85	5	4	FAV36K0125K--
1000	32	10	1	5	4.1	FAV36K0105K--

Undc : 800 V Urms : 400 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
800	35	14	0.9	5	4	FAV36B0804K--
620	27	11	1.1	5	4.1	FAV36B0624K--

Undc : 1000 V Urms : 450 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
560	30	14	1	5	4	FAV36L0564K--
470	25	12	1.2	5	4.1	FAV36L0474K--

Undc : 1200 V Urms : 500 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
330	21	11	1.4	5	4.2	FAV36U0334K--
270	17	9	1.7	5	4.4	FAV36U0274K--

Undc : 1500 V Urms : 600 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
180	16	10	1.7	5	4.4	FAV36R0184K--
150	13	8	2	5	4.5	FAV36R0154K--

Undc : 2000 V Urms : 650 V

Cn nF	I rms max A	Q max kV ar	Rs mOhm	Ls nH	Rth °C / W	Reference
120	15	10	1.92.2	5	4.6	FAV36N0124K--
100	12	8	2.8	5	4.9	FAV36N0104K--
80	10	7	1.5	5	5.2	FAV36N0803K--

NOTES

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