

DC FILTERING

FFG Design (FFH-RoHS Compliant)

DC FILTERING



GENERAL DESCRIPTION

The FFG series uses a non-impregnated metallized dielectric, which features a controlled self-healing process.

PACKAGING MATERIAL

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

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

STANDARDS

- IEC 61071-1, IEC 61071-2: Power electronic capacitors
- IEC 60068-1: Environmental testing
- UL 94: Test for Flammability of Plastic Materials for Parts in Devices and Appliances

HOT SPOT CALCULATION

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

with P_d (Dielectric losses) = $Q \times \text{tg} \delta_0$ where $\text{tg} \delta_0 = 2 \times 10^{-4}$ and $Q = I_{rms}^2 / (C \cdot 2 \cdot \pi \cdot f)$
 P_t (Thermal losses) = $R_s \times I_{rms}^2$

where 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

HOW TO ORDER

FFG
Series
FFG = Standard
FFH = RoHS Compliant

8
Case Size
8

6
Dielectric
6 = Polypropylene

K
Voltage Code
K = 600Vdc
B = 800Vdc
C = 900Vdc
L = 1000Vdc
U = 1200Vdc
N = 1900Vdc

0376
Capacitance EIA Code

K
Capacitance Tolerances
K = ±10%

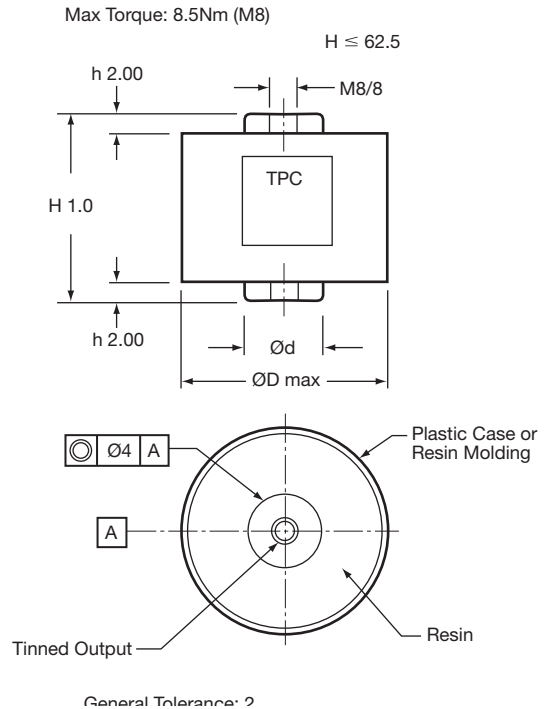
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Voltage Range
-- = < 1kV
J7 = ≥ 1kV

Not RoHS Compliant



DIMENSIONS (CASE SIZES)

plastic case – Terminals: threaded insert M8 filled with thermosetting resin



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ELECTRICAL CHARACTERISTICS

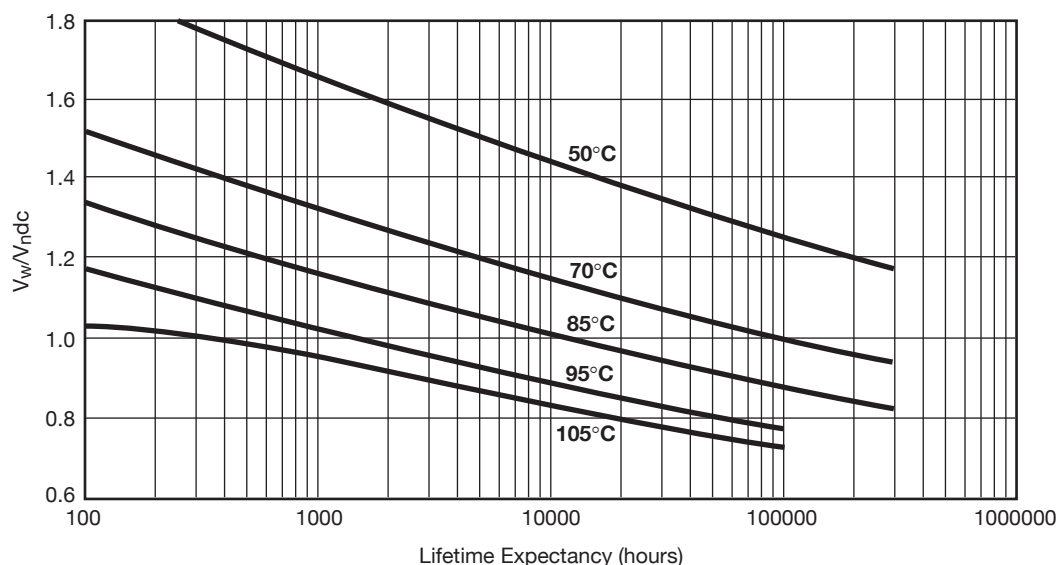
Items	Characteristics
Operating temperature:	-40°C + 105°C
Storage temperature:	-55°C + 85°C
Capacitance range:	16μF to 160μF
Rated DC voltage V _{ndc} :	600 to 900 V
Capacitance tolerance:	±10%
Test voltage between terminals:	@ 25°C: 1.5 x U _n dc during 10s
Test voltage between terminals and case:	@ 25°C: @ 4 kVrms @ 50 Hz during 1 mn (test type)
Dielectric:	Polypropylene

RATINGS AND PART NUMBER REFERENCE (600V TO 900V)

Part Number	C _n (μF)	Height ±1 (mm)	h ±2 (mm)	D max (mm)	d ±0.50 (mm)	I ² t max (A ² s)	I _{rms} max (A)	R _s (mΩ)	R _{th} (°C/W)	Typical Weight (g)
U_{ndc} 600 V (Voltage Code K)										
FFG86K0376K-	37	52	5	60	22	4	28	1.3	10.1	190
FFG86K0586K-	58	52	5	72	22	10	44	1	6.4	260
FFG86K0806K-	80	52	5	82	22	20	61	0.7	4.9	320
FFG86K0167K-	160	62.5	5	92	22	32	76	0.8	5.8	475
U_ndc 800 V (Voltage Code B)										
FFG86B0236K-	23	52	5	60	22	3	26	1.7	10.1	190
FFG86B0376K-	37	52	5	72	22	8	43	1.2	6.5	260
FFG86B0516K-	51	52	5	82	22	15	59	0.9	4.8	320
FFG86B0107K-	100	62.5	5	92	22	24	73	1	5.9	475
U_ndc 900 V (Voltage Code C)										
FFG86C0166K-	16	52	5	60	22	2.8	27	2	9.8	190
FFG86C0266K-	26	52	5	72	22	7	44	1.3	6.5	260
FFG86C0356K-	35	52	5	82	22	13	60	1	4.8	320
FFG86C0706K-	70	62.5	5	92	22	20	75	1.2	5.8	475

Dimensions millimeters

LIFETIME EXPECTANCY vs HOT SPOT TEMPERATURE AND VOLTAGE



V_w = Permanent working or operating DC voltage.

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ELECTRICAL CHARACTERISTICS

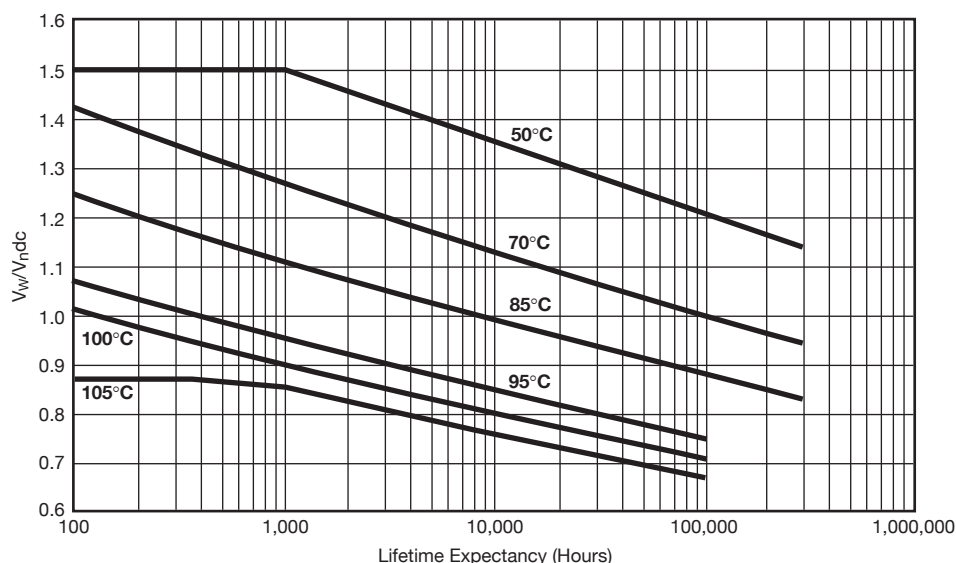
Items	Characteristics
Operating temperature:	-40°C + 105°C
Storage temperature:	-55°C + 85°C
Capacitance range:	5μF to 110μF
Rated DC voltage V _{ndc} :	1000 to 1900 V
Capacitance tolerance:	±10%
Test voltage between terminals:	@ 25°C: 1.5 x U _{n,dc} during 10s
Test voltage between terminals and case:	@ 25°C: @ 4 kVrms @ 50 Hz during 1 mn (test type)
Dielectric:	Polypropylene

RATINGS AND PART NUMBER REFERENCE (1000V TO 1900V)

Part Number	C _n (μF)	Height ±1 (mm)	h ±2 (mm)	D max (mm)	d ±0.50 (mm)	I ² t max (A ² s)	I _{rms} max (A)	R _s (mΩ)	R _{th} (°C/W)	Typical Weight (g)
U_{n,dc} 1000 V (Voltage Code K)										
FFG86L0256KJ7	25	52	5	60	22	1.9	21	3.6	9.9	190
FFG86L0406KJ7	40	52	5	72	22	5	34	2.32	6.4	260
FFG86L0556KJ7	55	52	5	82	22	9.5	46	1.74	4.7	320
FFG86L0117KJ7	110	62.5	5	92	22	14.9	58	1.86	5.7	475
U_{n,dc} 1200 V (Voltage Code U)										
FFG86U0176KJ7	17	52	5	60	22	1.3	19	4.33	9.9	190
FFG86U0276KJ7	27	52	5	72	22	3.3	30	2.8	6.5	260
FFG86U0376KJ7	37	52	5	82	22	6.2	41	2.1	4.8	320
FFG86U0766KJ7	76	62.5	5	92	22	10.3	53	2.2	5.6	475
U_{n,dc} 1900 V (Voltage Code N)										
FFG86N0505KJ7	5	52	5	60	22	1.7	19	2.77	11.3	190
FFG86N0905KJ7	9	52	5	72	22	5.5	35	1.63	6.6	260
FFG86N0126KJ7	12	52	5	82	22	9.9	46	1.27	5	320
FFG86N0256KJ7	25	62.5	5	92	22	18	63	1.2	5.2	475

Dimensions millimeters

LIFETIME EXPECTANCY vs HOT SPOT TEMPERATURE AND VOLTAGE



V_w = Permanent working or operating DC voltage.