

# Metallized Polypropylene AC Filter Film Capacitors

## FAC Series - 250 ~ 690VAC (Cylindrical Aluminum Can, Single Phase)



### Overview

The FAC series capacitors are designed for PFC system and AC harmonic filtering, consist of metallized polypropylene film, enclosed in cylindrical Al can filled with soft resin, screw terminals or fast-on terminals.

### Applications

Widely used in AC Filtering and LCL System

### Features

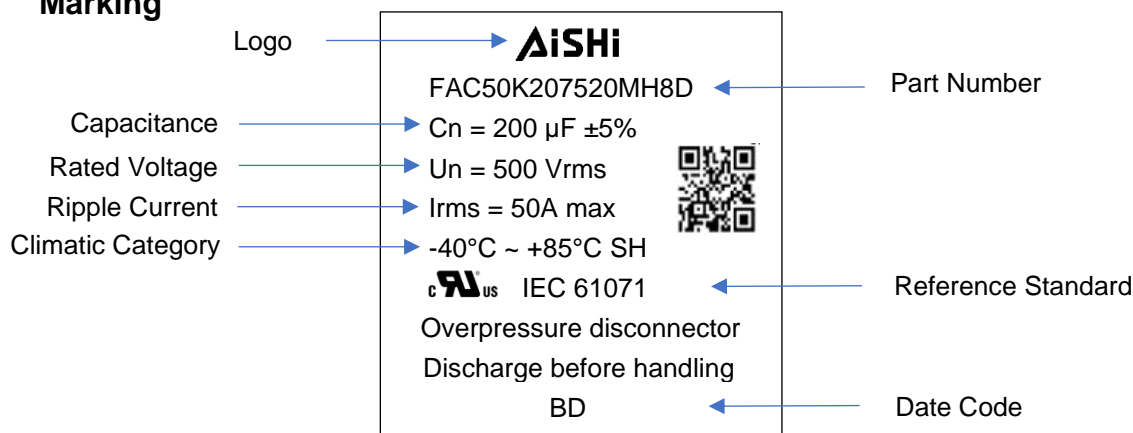
- Self-healing property
- Overpressure disconnecter device, 10K AFC
- High capacitance density
- High reliability
- Oil type with good thermal dissipation



### Approvals

Marking	Specification	File Number
	Components	E500536

### Marking



### Manufacturing Date Code

Year	Code	Month	Code
2018	A	Jan	1
2019	B	Feb	2
2020	C	Mar	3
2021	D	Apr	4
2022	E	May	5
2023	F	Jun	6

Year	Code	Month	Code
2024	G	Jul	7
2025	H	Aug	8
2026	J	Sep	9
2027	K	Oct	A
2028	L	Nov	N
2029	M	Dec	D

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### Part Number System

F	AC	50	K	207	525	MH8	D
Capacitor Type	Series	Voltage (VDC)	Tolerance	Capacitance (pF)	Size Code	Terminal Code	Bottom Stud Code
F = Film	AC Filtering, Al Can Single Phase, Metallized PP Film	250=25 330=33 450=45 480=48 550=55 600=60 660=66 690=69	J = ±5% K = ±10%	First two digits = significant figures. Third digit = Number of zeros.	Refer to Size Code Table	Refer to Terminal Code Table	Refer to Bottom Stud Code Table

### Terminal Code

Digit One (Lead/Terminal Type)		Digit Two (Terminal Space)		Digit Three (Terminal Size)	
Male Terminals	M	20mm	V	M5	5
Female Terminals	F	30mm	H	M6	6
Fast on	P	32mm	P	M8	8
Fast on + stud	Q	50mm	R	M10	H
				Fast On 2+2	E
				Fast On 4+4	F

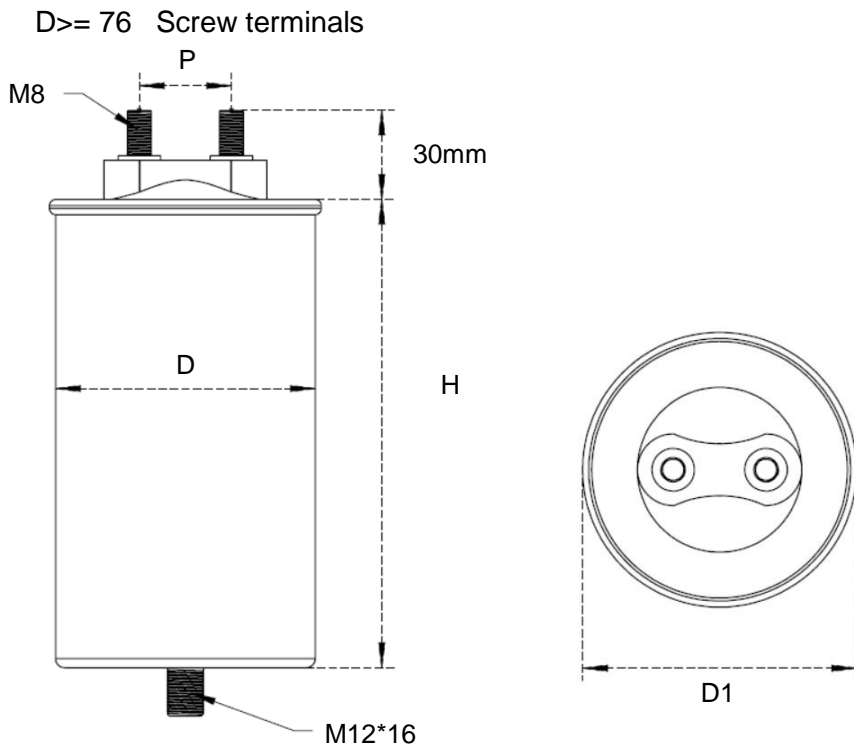
### Bottom Stud Code

Bottom Stud	
Bottom M8*10	C
Bottom M12*16	D
No Bottom Stud	E

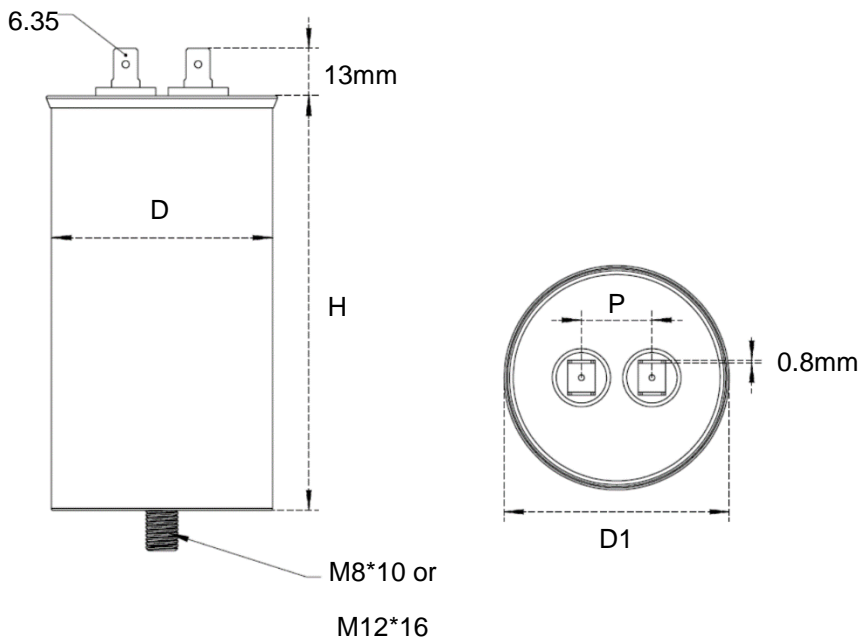
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### Dimension (mm)



### $D \leq 63.5$ Fast-on terminals



**Dimension (mm)**

Case Code	D ± 1mm		D1 ± 1mm		H ± 2mm		P ± 1mm	
	mm	inch	mm	inch	mm	inch	mm	inch
U10	50.0	(1.97)	53.0	(2.09)	100.0	(3.94)	20.0	(0.79)
U12	50.0	(1.97)	53.0	(2.09)	125.0	(4.92)	20.0	(0.79)
U75	50.0	(1.97)	53.0	(2.09)	75.0	(2.95)	20.0	(0.79)
V12	55.0	(2.17)	58.0	(2.28)	125.0	(4.92)	20.0	(0.79)
W10	60.0	(2.36)	63.0	(2.48)	100.0	(3.94)	20.0	(0.79)
W12	60.0	(2.36)	63.0	(2.48)	125.0	(4.92)	20.0	(0.79)
112	63.5	(2.50)	66.5	(2.62)	125.0	(4.92)	20.0	(0.79)
212	65.0	(2.56)	68.0	(2.68)	125.0	(4.92)	20.0	(0.79)
310	76.0	(2.99)	79.0	(3.11)	100.0	(3.94)	30.0	(1.18)
312	76.0	(2.99)	79.0	(3.11)	125.0	(4.92)	30.0	(1.18)
315	76.0	(2.99)	79.0	(3.11)	150.0	(5.91)	30.0	(1.18)
320	76.0	(2.99)	79.0	(3.11)	200.0	(7.87)	30.0	(1.18)
325	76.0	(2.99)	79.0	(3.11)	250.0	(9.84)	30.0	(1.18)
515	86.0	(3.39)	90.0	(3.54)	150.0	(5.91)	30.0	(1.18)
520	86.0	(3.39)	90.0	(3.54)	200.0	(7.87)	30.0	(1.18)
525	86.0	(3.39)	90.0	(3.54)	250.0	(9.84)	30.0	(1.18)
625	96.0	(3.78)	100.0	(3.94)	250.0	(9.84)	30.0	(1.18)
725	106.0	(4.17)	111.0	(4.37)	250.0	(9.84)	30.0	(1.18)

# Metallized Polypropylene AC Filter Film Capacitors

## FAC Series - 250 ~ 690VAC (Cylindrical Aluminum Can, Single Phase)



### Rating and Part Number

Vac	Cap Value μF	OD±1		H±2		Irms max at 50°C A	Peak Current A	ESR 1KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Pkg Qty pcs	Part Number
		mm	inch	mm	inch								
250	60	50.0	(1.97)	100.0	(3.94)	16.0	1002	3.9	175	7.8	16.7	15	FAC25K606U10QVEC
250	80	50.0	(1.97)	100.0	(3.94)	16.0	1336	4.4	175	7.8	16.7	15	FAC25K806U10QVEC
250	100	50.0	(1.97)	125.0	(4.92)	16.0	1260	4.8	175	6.3	12.6	15	FAC25K107U12QVEC
250	120	55.0	(2.17)	125.0	(4.92)	16.0	1512	4.6	175	6.0	12.6	15	FAC25K127V12QVEC
250	150	60.0	(2.36)	125.0	(4.92)	16.0	1890	4.3	175	5.3	12.6	12	FAC25K157W12QVEC
250	150	76.0	(2.99)	125.0	(4.92)	22.0	1620	3.3	190	4.7	10.8	12	FAC25K157312MH8D
250	200	76.0	(2.99)	125.0	(4.92)	30.0	2340	3.0	200	4.7	11.7	12	FAC25K207312MH8D
250	250	76.0	(2.99)	150.0	(5.91)	30.0	2150	3.4	190	4.3	8.6	12	FAC25K257315MH8D
250	300	86.0	(3.39)	150.0	(5.91)	36.0	2580	3.2	190	4.3	8.6	8	FAC25K307515MH8D
250	350	76.0	(2.99)	200.0	(7.87)	35.0	3640	3.1	200	4.0	10.4	12	FAC25K307320MH8D
250	400	86.0	(3.39)	200.0	(7.87)	40.0	4160	3.0	200	4.0	10.4	8	FAC25K407520MH8D
250	500	86.0	(3.39)	200.0	(7.87)	50.0	5400	3.3	220	2.9	10.8	8	FAC25K507520MH8D
250	600	86.0	(3.39)	250.0	(9.84)	50.0	4800	3.1	200	2.5	8.0	8	FAC25K607525MH8D
330	50	50.0	(1.97)	100.0	(3.94)	16.0	835	5.1	175	7.8	16.7	15	FAC33K506U10QVEC
330	60	50.0	(1.97)	125.0	(4.92)	16.0	756	5.4	175	6.3	12.6	15	FAC33K606U12QVEC
330	100	60.0	(2.36)	125.0	(4.92)	16.0	1260	4.1	175	5.3	12.6	12	FAC33K107W12QVEC
330	100	76.0	(2.99)	125.0	(4.92)	30.0	1310	3.8	190	5.2	13.1	12	FAC33K107312MH8D
330	120	63.5	(2.50)	125.0	(4.92)	16.0	864	3.8	175	5.5	7.2	12	FAC33K127112QVEC
330	150	76.0	(2.99)	150.0	(5.91)	40.0	1350	3.0	190	4.3	9.0	12	FAC33K157315MH8D
330	200	86.0	(3.39)	150.0	(5.91)	40.0	2620	3.1	200	4.0	13.1	8	FAC33K207515MH8D
330	250	76.0	(2.99)	200.0	(7.87)	40.0	2150	3.9	190	4.0	8.6	12	FAC33K257320MH8D
330	300	86.0	(3.39)	200.0	(7.87)	50.0	3930	3.6	200	2.9	13.1	8	FAC33K307520MH8D
330	350	86.0	(3.39)	200.0	(7.87)	50.0	4585	3.4	200	2.9	13.1	8	FAC33K357520MH8D
330	400	86.0	(3.39)	250.0	(9.84)	50.0	3240	3.6	200	2.5	8.1	8	FAC33K407525MH8D
450	20	50.0	(1.97)	75.0	(2.95)	16.0	700	5.2	175	10.5	35.0	15	FAC45K206U75QVEC
450	30	50.0	(1.97)	100.0	(3.94)	16.0	699	6.9	175	7.8	23.3	15	FAC45K306U10QVEC
450	40	50.0	(1.97)	100.0	(3.94)	16.0	540	5.7	175	7.8	13.5	15	FAC45K406U10QVEC
450	50	50.0	(1.97)	125.0	(4.92)	16.0	540	5.0	175	5.3	10.8	15	FAC45K506U12QVEC
450	50	76.0	(2.99)	100.0	(3.94)	20.0	855	3.3	190	5.3	17.1	12	FAC45K506310MH8D
450	70	60.0	(2.36)	125.0	(4.92)	16.0	910	4.8	175	5.5	13.0	12	FAC45K706W12QVEC
450	80	60.0	(2.36)	125.0	(4.92)	16.0	904	4.4	175	5.5	11.3	12	FAC45K806W12QVEC
450	100	76.0	(2.99)	150.0	(5.91)	35.0	1080	4.7	190	4.3	10.8	12	FAC45K107315MH8D
450	150	86.0	(3.39)	150.0	(5.91)	40.0	1965	3.9	200	4.3	13.1	8	FAC45K157515MH8D
450	200	86.0	(3.39)	200.0	(7.87)	40.0	2700	3.7	220	2.9	13.5	8	FAC45K207520MH8D
450	250	86.0	(3.39)	200.0	(7.87)	50.0	2025	3.8	200	2.9	8.1	8	FAC45K257520MH8D
450	300	86.0	(3.39)	250.0	(9.84)	50.0	2400	4.1	220	2.5	8.0	8	FAC45K307525MH8D
480	20	50.0	(1.97)	75.0	(2.95)	16.0	750	4.8	175	10.5	37.5	15	FAC48K206U75QVEC
480	25	50.0	(1.97)	100.0	(3.94)	16.0	750	4.2	175	7.8	30.0	15	FAC48K256U10QVEC
480	30	50.0	(1.97)	100.0	(3.94)	16.0	750	3.9	175	7.8	25.0	15	FAC48K306U10QVEC
480	40	60.0	(2.36)	100.0	(3.94)	12.0	852	5.2	175	7.3	21.3	12	FAC48K406W10QVEC
480	50	55.0	(2.17)	125.0	(4.92)	14.0	850	4.6	175	6.0	17.0	15	FAC48K506V12QVEC
480	60	76.0	(2.99)	125.0	(4.92)	18.0	1056	3.7	190	4.7	17.6	12	FAC48K606312MH8D
480	70	76.0	(2.99)	125.0	(4.92)	20.0	1050	3.4	190	4.7	15.0	12	FAC48K706312MH8D
480	80	76.0	(2.99)	150.0	(5.91)	30.0	1224	4.2	190	4.3	15.3	12	FAC48K806315MH8D
480	100	76.0	(2.99)	200.0	(7.87)	50.0	1710	4.1	190	4.0	17.1	12	FAC48K107320MH8D
480	150	76.0	(2.99)	200.0	(7.87)	40.0	2565	3.5	200	4.0	17.1	12	FAC48K157320MH8D
480	200	76.0	(2.99)	250.0	(9.84)	40.0	2620	4.6	200	3.0	13.1	12	FAC48K207325MH8D
480	250	86.0	(3.39)	250.0	(9.84)	50.0	2925	4.2	200	2.5	11.7	8	FAC48K257525MH8D

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### Rating and Part Number

Vac	Cap Value µF	OD±1		H±2		Irms max at 50°C A	Peak Current A	ESR 1KHz mΩ	ESL nH	Thermal Res °C/W	dv/dt V/us	Pkg Qty pcs	Part Number
		mm	inch	mm	inch								
550	20	50.0	(1.97)	100.0	(3.94)	16.0	600	6.9	175	7.9	30.0	15	FAC55K206U10QVEC
550	30	50.0	(1.97)	125.0	(4.92)	16.0	750	6.6	175	6.3	25.0	15	FAC55K306U12QVEC
550	40	60.0	(2.36)	125.0	(4.92)	16.0	752	7.1	175	5.5	18.8	15	FAC55K406W12QVEC
550	50	63.5	(2.50)	125.0	(4.92)	16.0	850	6.1	175	5.3	17.0	12	FAC55K506112QVEC
550	70	76.0	(2.99)	150.0	(5.91)	25.0	903	4.6	175	4.2	12.9	12	FAC55K706315MH8D
550	80	76.0	(2.99)	150.0	(5.91)	25.0	1800	4.3	190	4.3	22.5	12	FAC55K806315MH8D
550	100	86.0	(3.39)	150.0	(5.91)	30.0	2820	3.9	200	4.0	28.2	8	FAC55K107515MH8D
550	125	86.0	(3.39)	200.0	(7.87)	30.0	2825	3.6	200	2.9	22.6	8	FAC55K127520MH8D
550	150	86.0	(3.39)	200.0	(7.87)	40.0	3210	5.0	200	2.9	21.4	8	FAC55K157520MH8D
550	200	86.0	(3.39)	250.0	(9.84)	50.0	3220	4.4	200	2.5	16.1	8	FAC55K207525MH8D
550	250	96.0	(3.78)	250.0	(9.84)	50.0	3500	4.0	240	2.1	14.0	6	FAC55K257625MH8D
550	300	106.0	(4.17)	250.0	(9.84)	50.0	3510	3.7	240	2.0	11.7	5	FAC55K307725MH8D
600	10	50.0	(1.97)	75.0	(2.95)	16.0	350	6.4	160	10.5	35.0	15	FAC60K106U75QVEC
600	20	50.0	(1.97)	125.0	(4.92)	16.0	500	11.1	160	6.3	25.0	15	FAC60K206U12QVEC
600	25	50.0	(1.97)	125.0	(4.92)	16.0	600	6.1	175	6.3	24.0	15	FAC60K256U12QVEC
600	30	60.0	(2.36)	125.0	(4.92)	16.0	600	5.4	175	5.3	20.0	12	FAC60K306W12QVEC
600	35	60.0	(2.36)	125.0	(4.92)	16.0	700	7.3	175	5.3	20.0	12	FAC60K356W12QVEC
600	40	63.5	(2.50)	125.0	(4.92)	16.0	700	6.6	175	5.3	17.5	12	FAC60K406112QVEC
600	45	65.0	(2.56)	125.0	(4.92)	16.0	702	6.1	175	5.3	15.6	12	FAC60K456212QVEC
600	50	76.0	(2.99)	150.0	(5.91)	20.0	850	5.7	175	4.3	17.0	12	FAC60K506315MH8D
660	10	50.0	(1.97)	125.0	(4.92)	16.0	550	5.2	160	10.5	55.0	15	FAC66K106U12QVEC
660	15	60.0	(2.36)	125.0	(4.92)	16.0	420	6.2	160	6.3	28.0	12	FAC66K156W12QVEC
660	20	55.0	(2.17)	125.0	(4.92)	16.0	550	8.3	175	6.3	27.5	12	FAC66K206V12QVEC
660	25	60.0	(2.36)	125.0	(4.92)	16.0	550	7.9	175	5.3	22.0	12	FAC66K256W12QVEC
660	30	63.5	(2.50)	125.0	(4.92)	16.0	750	6.3	175	5.5	25.0	12	FAC66K306112QVEC
660	40	76.0	(2.99)	150.0	(5.91)	30.0	900	5.2	175	4.6	22.5	12	FAC66K406315MH8D
660	50	86.0	(3.39)	150.0	(5.91)	40.0	1000	4.7	175	4.0	20.0	8	FAC66K506515MH8D
690	10	50.0	(1.97)	125.0	(4.92)	16.0	550	5.2	160	6.3	55.0	15	FAC69K106U12QVEC
690	15	50.0	(1.97)	125.0	(4.92)	16.0	420	6.2	160	6.3	28.0	15	FAC69K156U12QVEC
690	20	55.0	(2.17)	125.0	(4.92)	16.0	550	8.3	175	6.0	27.5	15	FAC69K206V12QVEC
690	30	63.5	(2.50)	125.0	(4.92)	16.0	750	6.3	175	5.5	25.0	12	FAC69K306112QVEC
690	40	76.0	(2.99)	150.0	(5.91)	25.0	1152	4.8	190	4.3	28.8	12	FAC69K406315MH8D
690	50	86.0	(3.39)	150.0	(5.91)	30.0	1150	4.3	190	4.0	23.0	8	FAC69K506515MH8D
690	70	76.0	(2.99)	250.0	(9.84)	30.0	1260	3.7	200	2.9	18.0	12	FAC69K706325MH8D
690	85	86.0	(3.39)	250.0	(9.84)	40.0	1530	3.5	220	2.5	18.0	8	FAC69K856525MH8D
690	100	86.0	(3.39)	250.0	(9.84)	40.0	1800	3.3	200	2.5	18.0	8	FAC69K107525MH8D
690	125	106.0	(4.17)	250.0	(9.84)	50.0	1563	4.0	220	2.0	12.5	6	FAC69K127725MH8D
690	150	106.0	(4.17)	250.0	(9.84)	50.0	1875	3.8	240	2.0	12.5	6	FAC69K157725MH8D
690	170	106.0	(4.17)	250.0	(9.84)	50.0	2125	3.6	240	2.0	12.5	6	FAC69K177725MH8D

**General Technical Data**

Applications	AC Filtering
Dielectric	Polypropylene Metallized Film
Reference Standard	IEC 61071
Climatic Category	40/85/56 IEC 60068-1
Operating Temperature Range	-40°C ~ +85°C
Storage Temperature	-40°C ~ +85°C
Storage Conditions	Storage time: ≤24months from the date marked on the label package Average relative humidity per year ≤70% RH≤85% for 30 days randomly distributed throughout the year Dew is absent Temperature: -40°C ~ +85°C
Storage Life	Product that passed less than 2 years from production, No need reconfirmation
RoHS Compliance	Compliant with the restricted substance requirement of Directive 2011/65/EU
Maximum Torque (Nm)	M6 = 4Nm M8 = 6Nm M12 = 15Nm (Bottom Stud)

**Electric Clearance and Creepage**

Can Diameter	Distance terminal to terminal		Distance terminal to case	
	Creepage	Clearance	Creepage	Clearance
50	29	13.7	20	15
55	29	13.7	20	15
60	29	13.7	20	15
63.5	29	13.7	20	15
65	29	13.7	20	15
76	25	20	35	25
86	25	20	35	25
96	25	20	35	25
106	25	20	35	25

### Construction

Metallized Film	OPP & Al/Zn
Metal Sprayed	Zn
Connection Stripe	Tinned copper
Aluminum Case	Al can with stud
Top Cover	Al cover with Male Terminals or Steel cover with fast-on
Filling	Soft resin (Non-PCB)
Terminal	Tinned brass or Tinned steel

### Electrical Characteristics

Voltage Range	250Vac ~ 690Vac
Capacitance Range	10uF ~ 600uF
Capacitance Tolerance	±5% or ±10% at +25°C
Capacitance	Measuring Frequency at 1kHz Measuring Voltage: 1±0.2V
Standard Atmospheric Conditions for Static Test	<p><b>Ambient temperature</b> 15°C to 35°C (If there is any doubt on the results, the measurements shall be made at +20 +/- 5°C)</p> <p><b>Relative humidity</b> 45% to 75% (If there is any doubt on the results, the measurements shall be made at 60% to 70 %.)</p> <p><b>Air pressure</b> 86 kPa to 106 kPa.</p>
Visual examination, Marking (Non-Destructive)	Appearance: no remarkable abnormality
Voltage Between Terminals $U_{TT}$	2.15 x RMS rated voltage for 10s
Voltage Between Terminals and Case $U_{TC}$	4KVac 50Hz for 10s
Dielectric Dissipation Factor $Tg\delta 0$	≤2×10 <sup>-4</sup>
Dissipation factor	≤0.0020 at 100Hz
Insulation Resistance	IR x C ≥5,000s at 100VDC 1minute at +25°C
Surge Current (Is)	200 * I rated



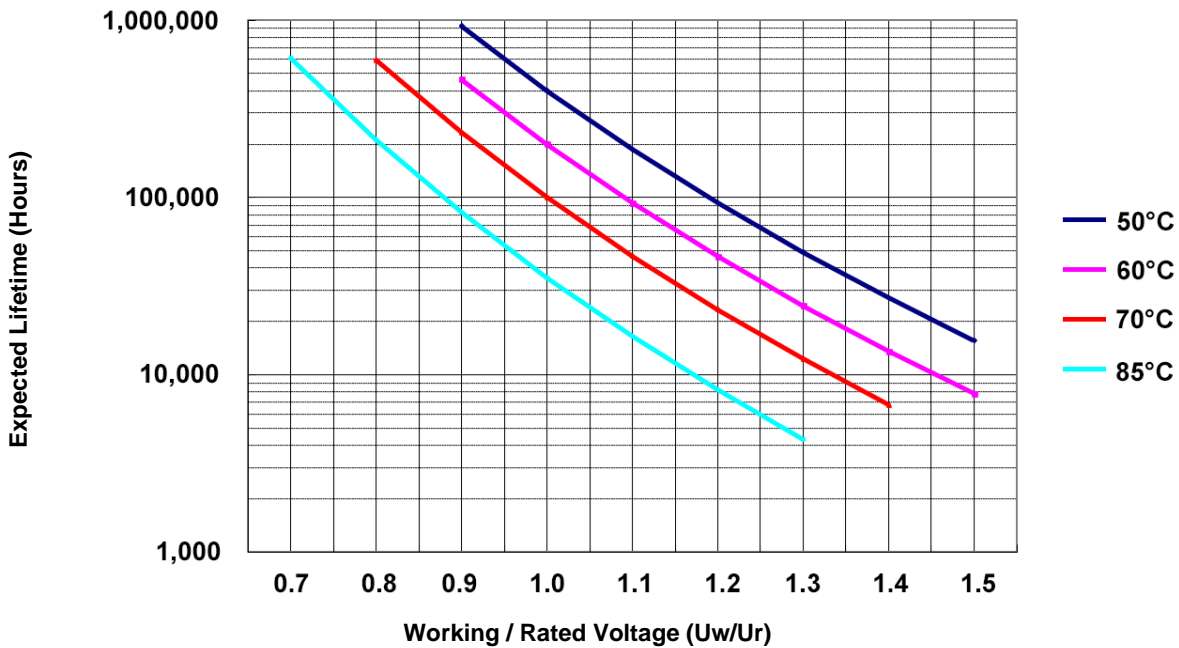
**Electrical Characteristics**

Hot-Spot	≤85°C
Life Expectancy	≥100,000 hours at rated voltage and 70°C
Failure Rate	≤100FIT
Max. Altitude	4000m, when above 2000m current derating as per 1.35%/100m

**Environmental Test**

High Temperature Loading	<p><b>Test Conditions:</b>                  Testing method per IEC 61071                  Test Temperature: +70 +/-2 °C.                  Apply 125% of rated voltage for 1,000 +24/-0 hours.                  Duration: 500 hours                  1000 charges and discharges                  At 1.3 x I peak (maximum respective peak current in continuous operation)</p> <p><b>Performance:</b>                  Capacitance Change Rate (<math>\Delta C/C</math>): ≤±3%                  Insulation Resistance: ≥50% of initial limit</p>
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**Expected Life Curve**



**Packaging Information**

Capacitors are well protected by foams. And then are packaged in the cartons.

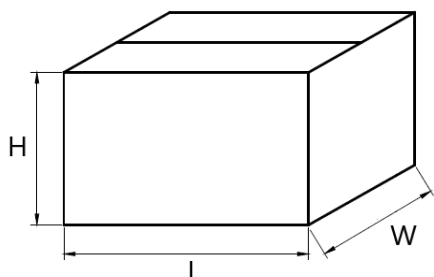


Table 1 carton dimensions

Carton No.	L (mm)	W (mm)	H (mm)
1	375	285	235
2	375	285	300
3	375	285	330
4	375	285	365
5	375	285	265

According to the capacitor's diameter, every carton contains capacitors as per the following Table 2.

Table 2 Capacitor quantity of each carton

Capacitor Diameter (mm)	Quantity (pcs)
50	15
55	15
60	12
63.5	12
65	12
76	12
86	8
96	6
106	5

### Cautions and Warnings

- Don't exceed the upper category temperature.
- For longtime storage, maximum relative humidity 80%, no dew allowed on the capacitor.
- Do not use or store capacitor in corrosive atmosphere, in the dusty environment's regular maintenance and cleaning especially of the terminals is required to avoid conductive path between terminal / or terminal and ground.
- Don't apply any mechanical stress to the capacitor terminals, and avoid any compressive, tensile or flexural stress.
- Avoid overload of the capacitors
- Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.

### Disclaimer

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