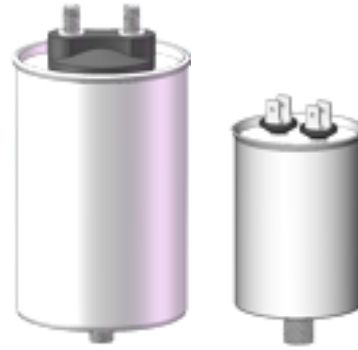


Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

APM

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



FEATURES

Optimized AC voltage performance.

High capacitance density.

Self-healing property and high reliability.

Overpressure disconnection device.

APPLICATIONS

PFC and AC filtering.

UPS Systems.

Recycle Energy.

Motor Drives.

ELECTRICAL CHARACTERISTICS

Rated Voltage:	250Vac ~ 690Vac
Capacitance range:	10 μ F - 600 μ F
Capacitance Tolerance:	$\pm 5\%$ (J), $\pm 10\%$ (K)
Dissipation Factor::	≤ 0.001 (0.1%) at 100 Hz at 25°C
Test Voltage Between Terminal:	2.15 x Vrms for 10s (terminal to terminal)
Test Voltage Terminals to Case:	4.0 KVac 50Hz for 10s at 25 °C
Insulation Resistance:	IR x C $\geq$ 30,000 Seconds at 100VDC 1 minute at +25°C
Surege current Is:	200 * I rated
Life Expectancy:	100,000 hours at Un @ Hot-Spot temperature $\leq +70^{\circ}\text{C}$

GENERAL TECHNICAL DATA

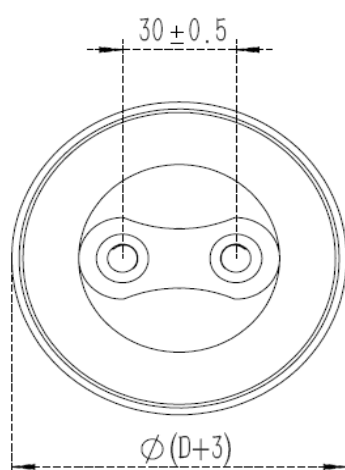
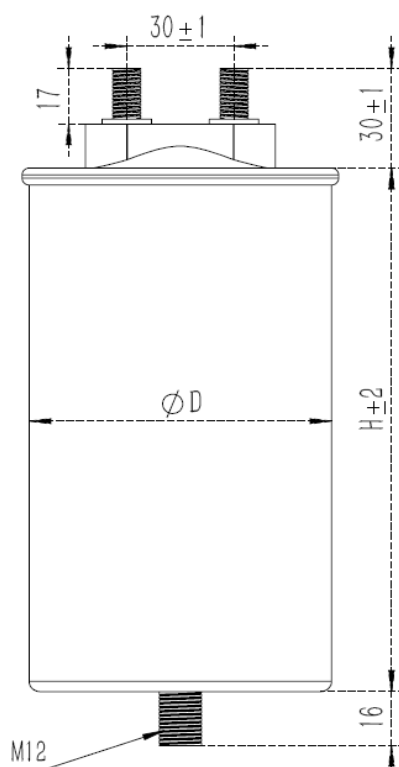
Application:	PFC and AC Filtering
Standard:	IEC 61071 / UL820
Climatic Category:	25/70/56 - IEC 60068-1
Operating Temperature:	-40°C ~ +85°C
Max Hot-spot Temperature:	$\leq +85^{\circ}\text{C}$
Storage Temperature:	-40°C ~ +85°C
Degree of Protection:	IP 00
Max permissible altitude:	2000 m above sea level
Mounting:	Vertical or horizontal
Installation torque:	Terminal: M6 4N.m M8 : 6Nm M10: 10 Nm The bottom stud of case: M 8:6 Nm M12: 15Nm
RoHS Compliant:	Compliant with the restricted substance requirements of Directive 2002/95/EC
Permissible Humidity:	Annual average $\leq 95\%$ on 30days/ year. Dewing not admissible
Over Voltage	1.1Un up to 8h / day; 1.15Un up to 30 min / day; 1.2Un up to 5 min/day, only 200 times in the life of the capacitor 1.3Un up to 1 min/day, only 200 times in the life of the capacitor

Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

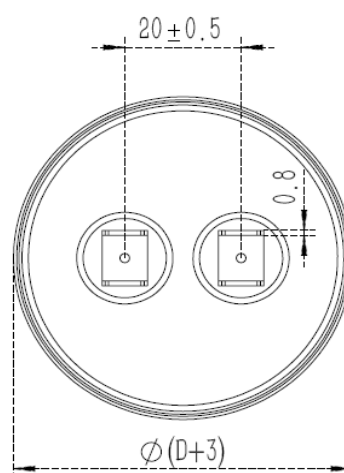
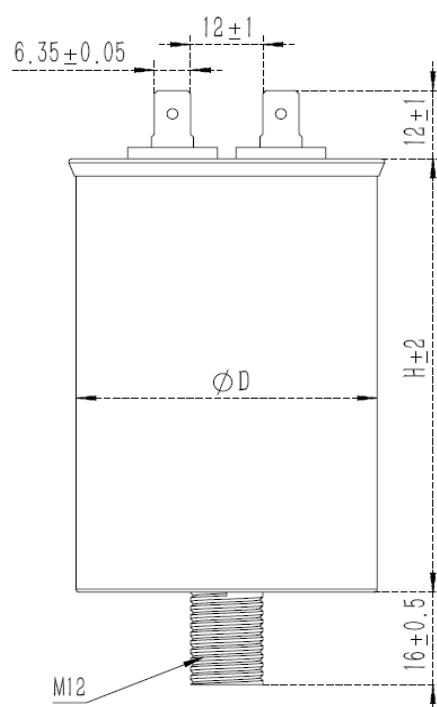
APM

DIMENSION

Style: Screw Terminals



Style: Fast-on Terminals



Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

APM

DIMENSION (Part Number Reference)

Vac	Cap	OD		H		dv/dt	I peak	I rms	ESR	ESL	Rth	Pkg	Part Number
	Value											Qty	
	uF	mm	inch	mm	inch	V/us	A	A	mΩ	nH	°C/W	pcs	
250	60.0	50.0	(1.97)	100.0	(3.9)	16.7	999.0	15.0	3.9	175.0	7.8	15	APM-606K25C50XA
250	80.0	50.0	(1.97)	100.0	(3.9)	16.7	1332.0	17.0	4.4	175.0	7.8	15	APM-806K25C50XA
250	100.0	50.0	(1.97)	125.0	(4.9)	12.6	1260.0	22.0	4.6	175.0	6.3	15	APM-107K25C50XA
250	120.0	50.0	(1.97)	125.0	(4.9)	12.6	1512.0	23.0	4.8	175.0	6.3	15	APM-127K25C50XA
250	150.0	65.0	(2.56)	130.0	(5.1)	12.6	1890.0	28.0	4.3	175.0	5.3	12	APM-157K25C65XA
250	150.0	76.0	(2.99)	122.0	(4.8)	10.8	1620.0	29.0	3.3	190.0	5.3	12	APM-157K25C76HB
250	175.0	65.0	(2.56)	125.0	(4.9)	12.6	2205.0	28.0	4.0	180.0	5.5	12	APM-177K25C65XA
250	200.0	65.0	(2.56)	125.0	(4.9)	11.3	2268.0	29.0	3.8	180.0	5.5	12	APM-207K25C65XA
250	200.0	76.0	(2.99)	125.0	(4.9)	11.7	2340.0	31.5	3.0	200.0	5.2	12	APM-207K25C35JE
250	230.0	76.0	(2.99)	152.0	(6.0)	8.6	1987.2	37.5	3.5	190.0	4.3	12	APM-237K25C76HB
250	250.0	76.0	(2.99)	152.0	(6.0)	8.6	2160.0	37.5	3.4	190.0	4.3	12	APM-257K25C76HB
250	300.0	76.0	(2.99)	152.0	(6.0)	8.6	2592.0	38.0	3.2	190.0	4.3	12	APM-307K25C76HB
250	330.0	86.0	(3.39)	200.0	(7.9)	10.4	3622.5	39.0	3.1	200.0	4.0	8	APM-337K25C86HB
250	350.0	86.0	(3.39)	152.0	(6.0)	10.4	3622.5	39.0	3.1	200.0	4.0	8	APM-357K25C86HB
250	400.0	86.0	(3.39)	152.0	(6.0)	10.4	4140.0	36.0	3.0	200.0	4.0	8	APM-407K25C86HB
250	500.0	86.0	(3.39)	210.0	(8.3)	10.8	5400.0	60.0	3.3	220.0	2.9	8	APM-507K25C86HB
250	600.0	86.0	(3.39)	210.0	(8.3)	8.0	4806.0	58.0	3.1	200.0	2.9	8	APM-607K25C86HB
330	50.0	50.0	(1.97)	100.0	(3.9)	16.7	832.5	14.0	5.1	175.0	7.8	15	APM-506K33C50XA
330	60.0	50.0	(1.97)	125.0	(4.9)	12.6	756.0	17.0	5.4	175.0	6.3	15	APM-606K33C50XA
330	100.0	65.0	(2.56)	130.0	(5.1)	12.6	1260.0	23.0	4.1	175.0	5.3	12	APM-107K33C65XA
330	100.0	76.0	(2.99)	122.0	(4.8)	13.1	1305.0	23.0	3.8	190.0	5.4	12	APM-107K33C76HB
330	120.0	65.0	(2.56)	130.0	(5.1)	7.2	864.0	24.0	3.8	175.0	5.4	12	APM-127K33C65XA
330	150.0	65.0	(2.56)	152.0	(6.0)	8.7	1309.5	28.0	4.6	175.0	4.6	12	APM-157K33C65XA
330	150.0	76.0	(2.99)	152.0	(6.0)	9.0	1350.0	30.0	4.2	190.0	4.3	12	APM-157K33C76HB
330	175.0	65.0	(2.56)	165.0	(6.5)	8.6	1496.3	31.0	4.2	175.0	4.2	12	APM-177K33C65XA
330	200.0	76.0	(2.99)	180.0	(7.1)	13.1	2610.0	40.0	3.7	190.0	3.6	12	APM-207K33C76HB
330	200.0	86.0	(3.39)	152.0	(6.0)	13.1	2610.0	38.0	3.1	200.0	4.0	8	APM-207K33C86HB
330	250.0	76.0	(2.99)	180.0	(7.1)	8.6	2137.5	40.0	3.9	190.0	3.6	12	APM-257K33C76HB
330	300.0	86.0	(3.39)	180.0	(7.1)	13.1	3915.0	42.0	3.6	200.0	3.4	8	APM-307K33C86HB
330	350.0	86.0	(3.39)	210.0	(8.3)	13.1	4567.5	48.0	3.4	200.0	2.9	8	APM-357K33C86HB
330	400.0	86.0	(3.39)	247.0	(9.7)	8.1	3240.0	52.0	3.6	200.0	2.5	8	APM-407K33C86HB
330	450.0	86.0	(3.39)	247.0	(9.7)	8.1	3645.0	52.0	3.5	200.0	2.5	8	APM-457K33C86HB
450	20.0	50.0	(1.97)	75.0	(3.0)	35.0	700.0	7.0	5.2	175.0	10.5	15	APM-206K45C50XA
450	30.0	50.0	(1.97)	100.0	(3.9)	23.3	700.0	10.5	6.9	175.0	7.8	15	APM-306K45C50XA
450	33.0	50.0	(1.97)	100.0	(3.9)	21.2	700.0	10.7	6.4	175.0	7.8	15	APM-336K45C50XA
450	40.0	65.0	(2.56)	100.0	(3.9)	13.5	540.0	13.0	5.7	175.0	6.9	12	APM-406K45C65XA
450	50.0	65.0	(2.56)	125.0	(4.9)	10.8	540.0	17.0	5.0	175.0	5.5	12	APM-506K45C65XA
450	50.0	76.0	(2.99)	107.0	(4.2)	17.1	855.0	16.0	3.3	190.0	6.4	12	APM-506K45C76HB
450	70.0	65.0	(2.56)	125.0	(4.9)	13.0	907.0	18.0	4.8	175.0	5.5	12	APM-706K45C65XA
450	80.0	65.0	(2.56)	125.0	(4.9)	11.3	907.2	19.0	4.4	175.0	5.5	12	APM-806K45C65XA
450	90.0	65.0	(2.56)	125.0	(4.9)	11.3	1020.6	19.0	5.0	175.0	5.5	12	APM-906K45C65XA
450	100.0	76.0	(2.99)	152.0	(6.0)	10.8	1080.0	25.0	4.7	190.0	4.5	12	APM-107K45C76HB

Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

APM

DIMENSION (Part Number Reference)

Vac	Cap	OD		H		dv/dt	I peak	I rms	ESR	ESL	Rth	Pkg	Part Number
	Value											Qty	
	uF	mm	inch	mm	inch	V/us	A	A	mΩ	nH	°C/W	pcs	
450	150.0	86.0	(3.39)	152.0	(6.0)	13.1	1957.5	25.5	3.9	200.0	4.0	8	APM-157K45C86HB
450	200.0	86.0	(3.39)	210.0	(8.3)	13.5	2700.0	41.0	3.7	220.0	2.9	8	APM-207K45C86HB
450	250.0	86.0	(3.39)	247.0	(9.7)	8.1	2025.0	46.0	3.8	200.0	2.5	8	APM-257K45C86HB
450	300.0	86.0	(3.39)	247.0	(9.7)	8.0	2403.0	43.0	4.1	220.0	2.5	8	APM-307K45C86HB
480	20.0	65.0	(2.56)	75.0	(3.0)	37.5	750.0	7.0	4.8	175.0	9.8	12	APM-206K48C65XA
480	25.0	65.0	(2.56)	80.0	(3.1)	30.0	750.0	9.0	4.2	175.0	8.6	12	APM-256K48C65XA
480	30.0	65.0	(2.56)	80.0	(3.1)	25.0	750.0	10.0	3.9	175.0	8.6	12	APM-306K48C65XA
480	40.0	65.0	(2.56)	100.0	(3.9)	21.3	850.0	12.5	5.2	175.0	6.9	12	APM-406K48C65XA
480	50.0	65.0	(2.56)	100.0	(3.9)	17.0	850.0	13.5	4.6	175.0	6.9	12	APM-506K48C65XA
480	50.0	76.0	(2.99)	107.0	(4.2)	19.0	950.0	15.5	3.2	190.0	6.3	12	APM-506K48C76HB
480	60.0	76.0	(2.99)	122.0	(4.8)	17.6	1053.0	18.0	3.7	190.0	5.3	12	APM-606K48C76HB
480	70.0	76.0	(2.99)	152.0	(6.0)	22.5	1575.0	22.5	4.4	190.0	4.3	12	APM-706K48C76HB
480	80.0	76.0	(2.99)	152.0	(6.0)	15.3	1224.0	23.5	4.2	190.0	4.2	12	APM-806K48C76HB
480	100.0	76.0	(2.99)	197.0	(7.8)	17.1	1710.0	31.0	4.1	190.0	3.3	12	APM-107K48C76HB
480	150.0	86.0	(3.39)	197.0	(7.8)	17.1	2565.0	37.0	3.5	200.0	3.1	8	APM-157K48C86HB
480	200.0	86.0	(3.39)	247.0	(9.7)	13.1	2610.0	45.0	4.6	200.0	2.5	8	APM-207K48C86HB
480	250.0	86.0	(3.39)	247.0	(9.7)	11.7	2925.0	45.0	4.2	200.0	2.5	8	APM-257K48C86HB
550	20.0	50.0	(1.97)	100.0	(3.9)	30.0	600.0	8.5	6.9	175.0	7.9	15	APM-206K55C50XA
550	30.0	50.0	(1.97)	125.0	(4.9)	25.0	750.0	12.0	6.6	175.0	6.3	15	APM-306K55C50XA
550	40.0	65.0	(2.56)	125.0	(4.9)	18.8	750.0	14.5	7.1	175.0	5.5	12	APM-406K55C65XA
550	50.0	65.0	(2.56)	130.0	(5.1)	17.0	850.0	15.3	6.1	175.0	5.5	12	APM-506K55C65XA
550	70.0	65.0	(2.56)	165.0	(6.5)	12.9	900.0	22.5	4.6	175.0	4.2	12	APM-706K55C65XA
550	80.0	76.0	(2.99)	180.0	(7.1)	22.5	1800.0	26.5	4.3	190.0	3.6	12	APM-806K55C76HB
550	100.0	86.0	(3.39)	180.0	(7.1)	28.2	2821.0	28.8	3.9	200.0	3.4	8	APM-107K55C86HB
550	125.0	86.0	(3.39)	180.0	(7.1)	22.6	2821.0	30.0	3.6	200.0	3.4	8	APM-127K55C86HB
550	150.0	86.0	(3.39)	247.0	(9.7)	21.4	3217.0	39.0	5.0	200.0	2.5	8	APM-157K55C86HB
550	200.0	86.0	(3.39)	247.0	(9.7)	16.1	3217.0	40.0	4.4	200.0	2.5	8	APM-207K55C86HB
550	250.0	106.0	(4.17)	247.0	(9.7)	14.0	3500.0	40.0	4.0	240.0	2.3	6	APM-257K55C1BHB
550	300.0	106.0	(4.17)	247.0	(9.7)	11.7	3500.0	40.0	3.7	240.0	2.3	6	APM-307K55C1BHB
600	10.0	50.0	(1.97)	75.0	(3.0)	35.0	350.0	5.0	6.4	160.0	10.5	15	APM-106K60C50XA
600	20.0	50.0	(1.97)	125.0	(4.9)	25.0	500.0	10.0	11.1	160.0	6.3	15	APM-206K60C50XA
600	25.0	50.0	(1.97)	125.0	(4.9)	20.0	500.0	11.0	9.3	160.0	6.3	15	APM-256K60C50XA
600	25.0	65.0	(2.56)	100.0	(3.9)	24.0	600.0	10.0	6.1	175.0	6.9	12	APM-256K60C65XA
600	30.0	65.0	(2.56)	100.0	(3.9)	20.0	600.0	11.0	5.4	175.0	6.9	12	APM-306K60C65XA
600	35.0	65.0	(2.56)	125.0	(4.9)	20.0	700.0	13.5	7.3	175.0	5.5	12	APM-356K60C65XA
600	40.0	65.0	(2.56)	125.0	(4.9)	17.5	700.0	14.0	6.6	175.0	5.5	12	APM-406K60C65XA
600	45.0	65.0	(2.56)	125.0	(4.9)	15.6	700.0	14.5	6.1	175.0	5.5	12	APM-456K60C65XA
600	50.0	65.0	(2.56)	152.0	(6.0)	17.0	850.0	15.0	5.7	175.0	5.5	12	APM-506K60C65XA

Metallized Polypropylene Film Capacitor (Aluminium Case)

AC Application

APM

DIMENSION (Part Number Reference)

Vac	Cap	OD		H		dv/dt	I peak	I rms	ESR	ESL	Rth	Pkg	Part Number
	Value											Qty	
	uF	mm	inch	mm	inch	V/us	A	A	mΩ	nH	°C/W	pcs	
660	10.0	50.0	(1.97)	100.0	(3.9)	40.0	400.0	6.2	8.2	160.0	7.9	15	APM-106K66C50XA
660	10.0	50.0	(1.97)	75.0	(3.0)	55.0	550.0	5.0	5.2	160.0	10.5	15	APM-106K66C50XA
660	12.0	50.0	(1.97)	100.0	(3.9)	35.0	420.0	6.8	7.2	160.0	7.9	15	APM-126K66C50XA
660	15.0	50.0	(1.97)	125.0	(4.9)	28.0	420.0	8.8	6.2	160.0	6.3	15	APM-156K66C50XA
660	15.0	50.0	(1.97)	100.0	(3.9)	36.7	550.0	7.5	6.2	160.0	7.9	15	APM-156K66C50XA
660	18.0	50.0	(1.97)	125.0	(4.9)	25.0	450.0	9.5	5.5	160.0	6.3	15	APM-186K66C50XA
660	18.0	65.0	(2.56)	75.0	(3.0)	36.1	650.0	6.8	3.8	175.0	9.2	12	APM-186K66C65XA
660	20.0	50.0	(1.97)	125.0	(4.9)	27.5	550.0	10.0	8.3	175.0	6.3	15	APM-206K66C65XA
660	20.0	65.0	(2.56)	75.0	(3.0)	32.5	650.0	7.0	3.6	175.0	9.2	12	APM-206K66C65XA
660	25.0	50.0	(1.97)	150.0	(5.9)	22.0	550.0	12.5	7.9	175.0	5.3	15	APM-256K66C65XA
660	25.0	65.0	(2.56)	100.0	(3.9)	26.0	650.0	10.0	4.5	175.0	6.9	12	APM-256K66C65XA
660	30.0	65.0	(2.56)	125.0	(4.9)	25.0	750.0	12.8	6.3	175.0	5.5	12	APM-306K66C65XA
660	35.0	65.0	(2.56)	125.0	(4.9)	21.4	750.0	13.2	5.7	175.0	5.5	12	APM-356K66C65XA
660	40.0	65.0	(2.56)	150.0	(5.9)	22.5	900.0	16.0	5.2	175.0	4.6	12	APM-406K66C65XA
660	45.0	65.0	(2.56)	150.0	(5.9)	20.0	900.0	16.5	4.9	175.0	4.6	12	APM-456K66C65XA
660	50.0	65.0	(2.56)	194.0	(7.6)	20.0	1000.0	21.5	4.7	175.0	3.6	12	APM-506K66C65XA
690	10.0	50.0	(1.97)	125.0	(4.9)	75.0	750.0	7.2	7.2	175.0	6.3	15	APM-106K69C50XA
690	15.0	50.0	(1.97)	125.0	(4.9)	50.0	750.0	8.8	9.0	175.0	6.3	15	APM-156K69C50XA
690	20.0	65.0	(2.56)	125.0	(4.9)	45.0	900.0	10.6	7.3	175.0	5.5	12	APM-206K69C65XA
690	30.0	65.0	(2.56)	125.0	(4.9)	30.0	900.0	12.5	5.6	175.0	5.5	12	APM-306K69C65XA
690	40.0	76.0	(2.99)	180.0	(7.1)	28.8	1150.0	19.4	4.8	190.0	3.6	12	APM-406K69C76HB
690	50.0	76.0	(2.99)	180.0	(7.1)	23.0	1150.0	21.0	4.3	190.0	3.6	12	APM-506K69C76HB
690	70.0	86.0	(3.39)	210.0	(8.3)	18.0	1260.0	27.5	3.7	200.0	2.9	8	APM-706K69C86HB
690	85.0	106.0	(4.17)	210.0	(8.3)	18.0	1530.0	30.8	3.5	220.0	2.7	6	APM-856K69C1BHB
690	100.0	86.0	(3.39)	247.0	(9.7)	18.0	1800.0	32.0	3.3	200.0	2.7	8	APM-107K69C86HB
690	100.0	106.0	(4.17)	210.0	(8.3)	18.0	1800.0	33.4	4.4	240.0	2.5	6	APM-107K69C1BHB
690	125.0	106.0	(4.17)	247.0	(9.7)	12.5	1563.0	37.0	4.0	220.0	2.3	6	APM-127K69C1BHB
690	150.0	106.0	(4.17)	247.0	(9.7)	12.5	1875.0	37.0	3.8	240.0	2.3	6	APM-157K69C1BHB
690	170.0	106.0	(4.17)	247.0	(9.7)	12.5	2125.0	37.0	3.6	240.0	2.3	6	APM-177K69C1BHB

Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

APM

PART NUMBERING SYSTEMS

■ EXPLANATION OF ARTICLE CODE

APM -	1 2 7	K	4 8	C	8 6	H	B
①	②	③	④	⑤	⑥	⑦	⑧

① Capacitor Type

TYPE	APM
CODE	APM-

② Rated Capacitance (EIA Code)

The rated Capacitance value of the product is indicated with three digits. The first two digits indicate the two most significant digits of the capacitance value, and the third digit gives the number of following zeroes. This gives the capacitance value expressed in picofarads.

Examples:

105	=	1,000,000pF	=	1,000nF	=	1uF
106	=	10,000,000pF	=	10,000nF	=	10uF

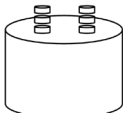
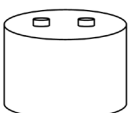
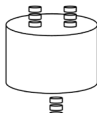
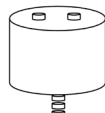
③ Capacitance Tolerance

TOLERANCE	±5%	±10%	±20%
CODE	J	K	M

④ Rated Voltage

VOLTAGE	250V	330V	450V	480V	550V	600V	660V	690V
CODE	25	33	45	48	55	60	66	69

⑤ Terminal Configuration

FORM	THREADED STUD	THREADED INSERT	THREADED STUD + MOUNTING	THREADED INSERT + MOUNTING
CODE	A	B	C	J
FORM STYLE				

⑥ Case Diameter

DIAMETER	50	75	85	100	106	116	136
CODE	50	75	85	1A	1B	1C	1D

⑦ Terminal

TERMINAL	M6	M8	M10	M12	M16	M20	Fast-on
CODE	F	H	J	L	M	N	X

⑧ Terminal Pitch

TERMINAL PITCH	20	30	45	50
CODE	A	B	C	D

Metallized Polypropylene Film Capacitor (Aluminium Case) AC Application

APM

■ PERFORMANCE NOTES

Rs: Equivalent series resistance - Ohmic resistances (Ohm)

Dielectric Dissipation Factor: $\tan\delta$ (Polypropylene: 0.0002)

Ta: Ambient temperature

Rth: Thermal resistance °C/W, indicates hot spot temperature rise due to power dissipation losses

Pj: Joule losses $P_j = R_s \cdot I_{rms}^2$

Pd: Dielectric losses

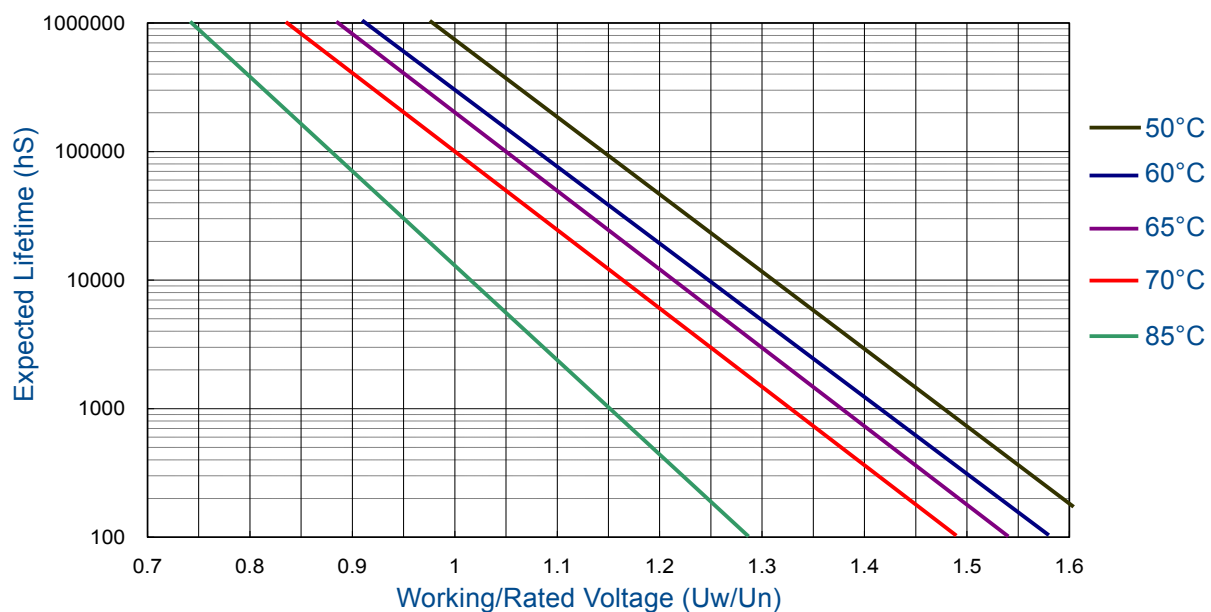
$$P_d = X_c \cdot I_{rms}^2 \cdot \tan\delta = I_{rms}^2 / (2 \cdot \pi \cdot f \cdot C) \cdot \tan\delta$$

Ths: Hot spot temperature within the capacitor

$$T_{hs} = T_a + (P_j + P_d) \cdot R_{th}$$

Design life: 100,000 hours at U_n @ Hot-Spot temperature $\leq +70^\circ\text{C}$

Expected Life Curve



■ CAUTIONS AND WARNING

- In case of dents of more than 1 mm depth or any other mechanical damage, capacitors must not be used at all.
- To ensure the full functionality of the overpressure disconnector, elastic elements must not be hindered and a minimum space of 12 mm has to be kept above each capacitor.
- Do not handle the capacitor before it is discharged.
- The threaded bottom stud of the capacitor has to be used for grounding. The maximum tightening torque is 15Nm
- Do not use or store capacitor in corrosive atmosphere, in the dusty environments regular maintenance and cleaning especially of the terminals is required to avoid conductive path between phase / or phase and ground.
- Do not have unlimited service life expectancy, the max service life expectancy may vary depending on the application the capacitor is used in.