

## **Metallized Film Capacitor**

## **Power Electronic Capacitors**

**Series/Type:** MKP DC-Link

**Ordering code:** 400A\*

**Date:** April 2024

**Version:** 01

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■ Features

- Used in DC-link circuits, can replace electrolytic capacitors
- Low ESR, high ripple current handling capabilities
- Low ESL
- Self-healing property
- Long life time
- Aluminum case, filled with resin

■ Applications

- Used in inverters of wind power and solar power
- Transportation: EV or HEV
- Welders, Elevators, Motor driver systems

■ Reference Standards

- IEC61071
- IEC60068
- RoHS
- UL 810

■ Specifications

- |  |   |
|--|---|
| ● Capacitance range                                  | 25μF~5000μF   |
| ● Capacitance tolerance                              | ±5%(J), ±10%(K)   |
| ● Voltage range                                      | DC600V~DC4000V  |
| ● Dielectric dissipation factor(tan δ <sub>0</sub> ) | 2×10 <sup>-4</sup>  |
| ● Loss factor(tanδ)at 100Hz                          | ≤1.2×10 <sup>-3</sup> (C <sub>N</sub> ≤450μF)<br>≤1.5×10 <sup>-3</sup> (450μF<C <sub>N</sub> ≤800μF)<br>≤2.0×10 <sup>-3</sup> (C <sub>N</sub> >800μF) |
| ● Operating temperature range                        | -55℃...70℃ for diameter 86mm<br>-55℃...85℃ for diameter 116mm   |
| ● Storage temperature Range                          | -55℃...85℃  |
| ● Maximum altitude                                   | ≤2000m  |
| ● Frequency range                                    | 100Hz~10×10 <sup>3</sup> Hz<br>(High Frequency design available upon request)   |
| ● Service life expectancy                            | 100,000h @≤1.0U <sub>N</sub> @θ <sub>HS</sub> ≤70 °C  |
| ● Failure rate                                       | 50Fit   |

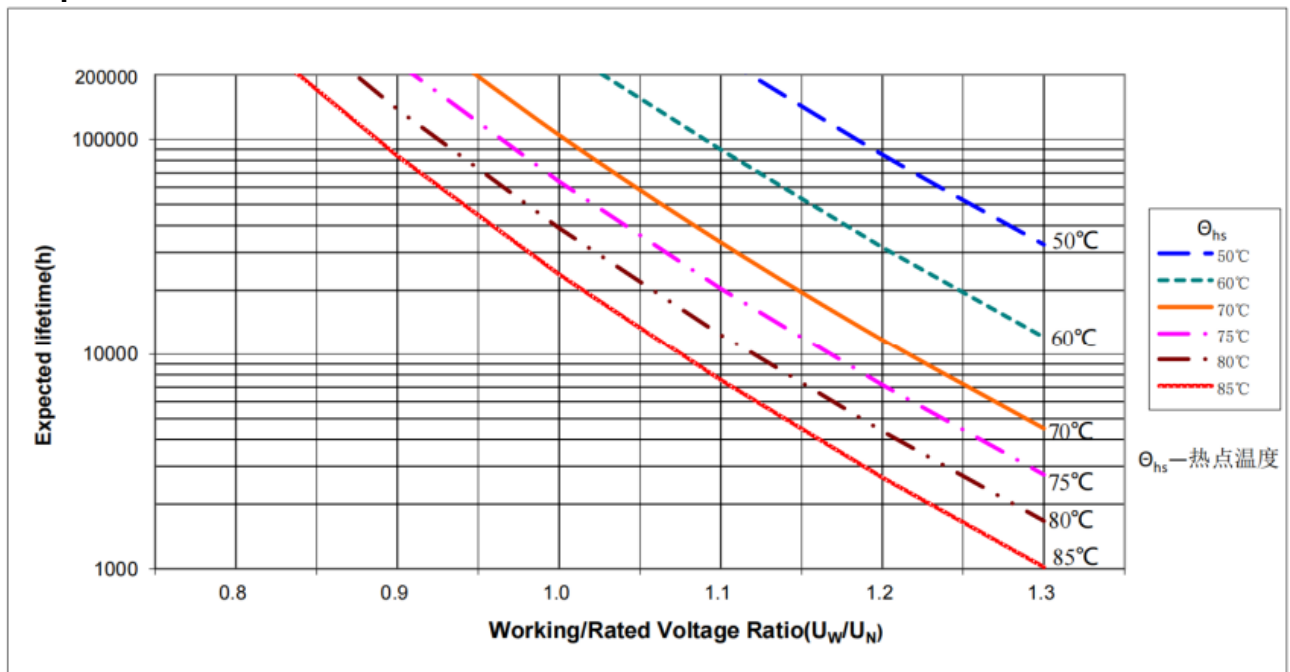
■ Test data

- |  |  |
|--|--|
| ● Capacitance measurement                | C <sub>N</sub> ±5%(J); C <sub>N</sub> ±10%(K);             |
| ● Test voltage between terminals         | 1.5U <sub>NDC</sub> @10S                                   |
| ● Test voltage between terminals to case | (2•U <sub>NDC</sub> +1000)V.ac, but no less 3000 V.ac @10S |
| ● Loss factor(tanδ)at 100Hz              | 2.0×10 <sup>-3</sup>                                       |

■ **Installation**

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>● Mounting and grounding</li> <li>● Terminal form</li> <li>● Max. torque(case)M12 stud</li> <li>● Max. torque terminal</li> </ul> | <p>M12 threaded bolt on bottom of the aluminum case</p> <p>Male terminals or Thread hole type</p> <p>10N.m</p> <p>Female M6: 5 N.m</p> <p>Female M8: 6 N.m; Male M8 : 8 N.m</p> |
|--|---|

■ **Expected lifetime curve**





■ **Structure of ordering code**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>C</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>A</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>5</b>	<b>7</b>	<b>J</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
Capacitor series					Rated voltage			Rated Capacitance		Capacitance tolerance		Internal use			

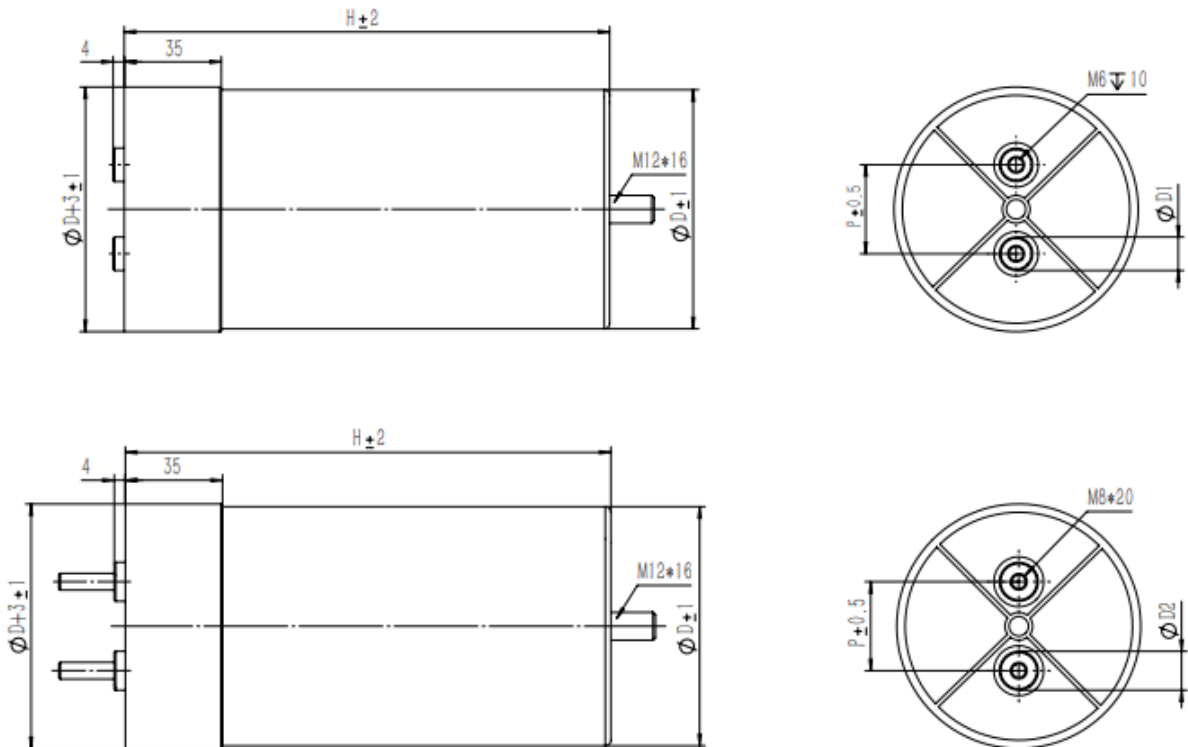
C400A—Capacitor series  
 801—Rated voltage 800V  
 757J0—Rated capacitance 750 $\mu$ F  
 J—Capacitance tolerance  $\pm 5\%$   
 011—Internal use

■ Capacitor marking injected on aluminum case(position refer to drawing)



	Manufacture's logo
MKP	Metallized polypropylene film
C400	Capacitor series
750µF	Capacitance
±5%	Capacitance tolerance
DC 800V	DC rated voltage: DC 800V
SH	Self-healing
-40°C...85°C	Operating temperature range
Dry(PUR)	
P/N:C400A801757J0011	Production code
EMF Technology Co.,Ltd.	Manufacture's name
	Data matrix code: Customer P/N, EMF Batch nr., production serial number

■ Outline Drawing(Specific according to customer requirements)



Mounting hole distance and outer diameter of screw

D=76,86mm	D=96mm	D=116mm	D=136mm
D1=12,14mm	D1=12,14mm	D1=14,16mm	D1=14,16mm
P=32mm	P=45mm	P=50mm	P=50mm

**Technical data**

C <sub>N</sub> (μF)	D (mm)	H (mm)	İ (A)	I <sub>MAX@45°C</sub> @10KHz(A)	ESR(mΩ) @1KHz	ESL (nH)	R <sub>th</sub> (K/W)	W <sub>N</sub> (J)	W (kg)	Part number
U <sub>NDC</sub> DC900V, U <sub>S</sub> 1350V, U <sub>r</sub> 200V										
280	76	95	1172	41	1.9	≤50	4.6	113	0.59	C400A901287*****
380	86	95	1591	47	1.8	≤50	3.9	154	0.73	C400A901387*****
390	76	120	1203	41	2.1	≤60	4.1	158	0.71	C400A901397*****
450	76	145	2397	58	1.2	≤45	3.7	182	0.89	C400A901457*****
520	86	120	1604	47	1.9	≤60	3.5	211	0.89	C400A901527*****
570	76	175	2386	60	1.3	≤50	3.3	231	1.04	C400A901577*****
600	86	145	3197	64	1.1	≤45	3.2	243	1.12	C400A901607*****
630	96	125	1943	53	1.8	≤60	3.0	255	1.16	C400A901637*****
700	116	100	2930	60	1.6	≤50	2.6	284	1.40	C400A901707*****
750	86	175	3140	66	1.2	≤50	2.9	304	1.31	C400A901757*****
780	76	225	2406	62	1.4	≤60	2.9	316	1.30	C400A901787*****
850	96	150	4529	71	1.1	≤45	2.9	344	1.41	C400A901857*****
1000	116	125	3084	60	1.6	≤60	2.3	405	1.67	C400A901108*****
1050	86	225	3239	69	1.3	≤60	2.5	425	1.62	C400A901108*5***
1200	96	230	3701	75	1.2	≤60	2.2	486	2.11	C400A901128*****
1300	136	125	4010	60	1.6	≤60	1.9	527	2.33	C400A901138*****
1450	116	180	6070	84	1.1	≤50	2.0	587	2.43	C400A901148*5***
1500	136	150	7992	91	1.0	≤45	1.7	608	2.93	C400A901158*****
1900	136	180	7954	94	1.0	≤50	1.6	770	3.41	C400A901198*****
2000	116	230	6169	88	1.1	≤60	1.7	810	2.98	C400A901208*****
2700	136	230	8328	99	1.1	≤60	1.4	1094	4.17	C400A901278*****
U <sub>NDC</sub> DC1100V, U <sub>S</sub> 1650V, U <sub>r</sub> 250V										
180	76	95	952	40	2.1	≤50	4.6	109	0.58	C400A112187*****
230	86	95	1216	45	1.9	≤50	3.9	139	0.74	C400A112237*****
250	76	120	974	40	2.3	≤60	4.1	151	0.71	C400A112257*****
280	76	145	1884	56	1.3	≤45	3.7	169	0.89	C400A112287*****
300	96	100	1586	51	1.8	≤50	3.3	182	0.96	C400A112307*****
330	86	120	1286	45	2.1	≤60	3.5	200	0.89	C400A112337*****
350	76	175	1851	58	1.4	≤50	3.3	212	1.05	C400A112357*****
400	86	145	2692	63	1.2	≤45	3.2	242	1.12	C400A112407*****
420	86	136	1413	46	2.1	≤60	3.3	254	0.98	C400A112427*****
450	116	100	2379	60	1.6	≤50	2.6	272	1.39	C400A112457*****
460	96	150	3096	69	1.1	≤45	2.7	278	1.45	C400A112467*****
480	76	225	1870	59	1.5	≤60	2.9	290	1.30	C400A112487*****
500	86	175	2644	65	1.2	≤50	2.9	303	1.29	C400A112507*****
600	96	180	3173	71	1.2	≤50	2.5	363	1.69	C400A112607*****
630	136	100	3331	60	1.5	≤50	2.1	381	1.91	C400A112637*****
650	116	125	2533	60	1.7	≤60	2.3	393	1.65	C400A112657*****
680	86	225	2649	67	1.3	≤60	2.5	411	1.61	C400A112687*****
730	116	150	4913	81	1.1	≤45	2.1	442	2.07	C400A112737*****
800	96	230	3117	74	1.3	≤60	2.2	484	2.08	C400A112807*****
900	136	125	3507	60	1.6	≤60	1.9	545	2.28	C400A112907*****
920	116	180	4865	83	1.1	≤50	2.0	557	2.42	C400A112927*****
1000	136	150	6370	91	1.0	≤45	1.7	605	2.89	C400A112108*****
1200	136	180	6345	93	1.1	≤50	1.6	726	3.41	C400A112128*****
1250	116	230	4870	87	1.2	≤60	1.7	756	2.98	C400A112108*5***

1700	136	230	6624	98	1.1	≤60	1.4	1029	4.17	C400A112178****
<b>Metallized Film Capacitor</b>										<b>C400A*</b>
<b>Power Electronic Capacitors</b>										<b>MKP DC-Link</b>

### Technical data

C <sub>N</sub> (μF)	D (mm)	H (mm)	İ (A)	I <sub>MAX@45°C</sub> @10KHz(A)	ESR(mΩ) @1KHz	ESL (nH)	R <sub>th</sub> (K/W)	W <sub>N</sub> (J)	W (kg)	Part number
<b>U<sub>NDC</sub> DC1200V, U<sub>S</sub> 1800V, U<sub>R</sub> 275V</b>										
150	76	95	876	39	2.1	≤50	4.6	108	0.58	C400A122157****
200	86	95	1168	45	1.9	≤50	3.9	144	0.73	C400A122207****
220	76	120	946	39	2.4	≤60	4.1	158	0.70	C400A122227****
240	76	145	1783	56	1.3	≤45	3.7	173	0.88	C400A122247****
250	86	125	2271	61	1.2	≤40	3.4	180	0.99	C400A122257****
270	86	120	1162	44	2.1	≤60	3.5	194	0.89	C400A122277****
300	76	175	1752	57	1.4	≤50	3.3	216	1.04	C400A122307****
310	86	145	2304	62	1.2	≤45	3.2	223	1.12	C400A122317****
380	116	100	2219	60	1.6	≤50	2.6	274	1.38	C400A122387****
400	76	225	1721	69	1.2	≤60	2.9	288	1.30	C400A122407****
420	86	175	2452	64	1.3	≤50	2.9	302	1.31	C400A122427****
470	86	225	2022	64	1.4	≤60	2.5	338	1.66	C400A122477****
530	136	100	3094	60	1.5	≤50	2.1	382	1.90	C400A122537****
550	116	150	4087	80	1.1	≤45	2.1	396	2.10	C400A122557****
560	86	225	2409	66	1.4	≤60	2.5	403	1.61	C400A122567****
680	116	180	3970	82	1.1	≤50	2.0	490	2.48	C400A122687****
730	136	125	3140	60	1.6	≤60	1.9	526	2.28	C400A122737****
850	136	150	6316	91	1.0	≤45	1.7	612	2.86	C400A122857****
950	136	180	5547	93	1.1	≤50	1.6	684	3.44	C400A122957****
1000	116	230	4302	86	1.2	≤60	1.7	720	3.00	C400A122108****
1200	136	230	5162	96	1.1	≤60	1.4	864	4.24	C400A122128****
<b>U<sub>NDC</sub> DC2000V, U<sub>S</sub> 3000V, U<sub>R</sub> 450V</b>										
55	76	95	533	35	2.7	≤50	4.6	110	0.58	C400A202556****
75	76	120	536	34	3.2	≤60	4.1	150	0.70	C400A202756****
85	76	145	1049	51	1.5	≤45	3.7	170	0.89	C400A202856****
90	96	100	872	46	2.2	≤50	3.3	180	0.96	C400A202906****
100	86	120	714	40	2.7	≤60	3.5	200	0.88	C400A202107****
110	76	175	1066	52	1.7	≤50	3.3	220	1.04	C400A202117****
125	96	125	893	45	2.4	≤60	3.0	250	1.15	C400A202127*5***
140	116	100	1357	56	1.9	≤50	2.6	280	1.38	C400A202147****
150	86	175	1454	60	1.5	≤50	2.9	300	1.29	C400A202157****
190	116	125	1357	56	2.0	≤60	2.3	380	1.66	C400A202197****
200	86	225	1429	60	1.7	≤60	2.5	400	1.61	C400A202207****
220	116	150	2714	77	1.2	≤45	2.1	440	2.06	C400A202227****
250	96	230	1786	68	1.5	≤60	2.2	500	2.06	C400A202257****
275	136	125	1964	60	1.8	≤60	1.9	550	2.26	C400A202277*5***
280	116	180	2714	79	1.2	≤50	2.0	560	2.39	C400A202287****
310	136	150	3825	88	1.1	≤45	1.7	620	2.86	C400A202317****
380	116	230	2714	81	1.3	≤60	1.7	760	2.97	C400A202387****
400	136	180	3878	90	1.1	≤50	1.6	800	3.31	C400A202407****
540	136	230	3857	93	1.2	≤60	1.4	1080	4.09	C400A202547****

**Metallized Film Capacitor**
**C400A\***
**Power Electronic Capacitors**
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**Technical data**

C <sub>N</sub> (μF)	D (mm)	H (mm)	İ (A)	I <sub>MAX@45°C</sub> @10KHz(A)	ESR(mΩ) @1KHz	ESL (nH)	R <sub>th</sub> (K/W)	W <sub>N</sub> (J)	W (kg)	Part number
<b>U<sub>NDC</sub> DC3000V, U<sub>S</sub> 4500V, U<sub>r</sub> 700V</b>										
35	76	145	667	33	3.8	≤45	3.7	158	0.88	C400A302356*****
39	76	175	584	31	4.6	≤50	3.3	176	1.05	C400A302396*****
47	86	145	896	37	3.4	≤45	3.2	212	1.11	C400A302476*****
60	76	225	662	32	5.0	≤60	2.9	270	1.29	C400A302606*****
75	96	180	1124	42	3.4	≤50	2.5	338	1.65	C400A302756*****
82	86	225	905	38	4.2	≤60	2.5	369	1.61	C400A302826*****
92	116	150	1754	51	2.7	≤45	2.1	414	2.05	C400A302926*****
100	116	180	1498	50	3.0	≤50	2.0	450	2.48	C400A302107*****
120	116	180	1798	52	2.8	≤50	2.0	540	2.37	C400A302127*****
130	136	150	2479	59	2.5	≤45	1.7	585	2.84	C400A302137*****
150	116	230	1656	52	3.2	≤60	1.7	675	3.00	C400A302157*****
160	136	180	2397	59	2.6	≤50	1.6	720	3.34	C400A302167*****
<b>U<sub>NDC</sub> DC3600V, U<sub>S</sub> 5400V, U<sub>r</sub> 800V</b>										
22	76	145	543	31	4.2	≤45	3.7	143	0.87	C400A362226*****
28	76	175	543	31	4.8	≤50	3.3	181	1.02	C400A362286*****
36	96	150	888	40	3.4	≤45	2.7	233	1.43	C400A362366*****
38	86	175	737	36	4.1	≤50	2.9	246	1.30	C400A362386*****
46	96	180	892	40	3.7	≤50	2.5	298	1.66	C400A362466*****
50	86	225	714	35	4.8	≤60	2.5	324	1.60	C400A362506*****
55	116	150	1357	49	2.9	≤45	2.1	356	2.05	C400A362556*****
62	96	230	886	40	4.3	≤60	2.2	402	2.08	C400A362626*****
70	116	180	1357	49	3.1	≤50	2.0	454	2.39	C400A362706*****
75	136	150	1851	57	2.7	≤45	1.7	486	2.87	C400A362756*****
88	116	230	1257	49	3.6	≤60	1.7	570	3.01	C400A362886*****
100	136	180	1939	58	2.8	≤50	1.6	648	3.29	C400A362107*****
125	136	230	1786	58	3.1	≤60	1.4	810	4.16	C400A362127*5***
<b>U<sub>NDC</sub> DC4000V, U<sub>S</sub> 6000V, U<sub>r</sub> 900V</b>										
18	76	145	475	30	4.6	≤45	3.7	144	0.87	C400A402186*****
23	86	145	607	34	4.0	≤45	3.2	184	1.10	C400A402236*****
30	76	225	458	29	6.4	≤60	2.9	240	1.28	C400A402306*****
38	96	180	787	39	3.9	≤50	2.5	304	1.64	C400A402386*****
40	86	225	611	34	5.3	≤60	2.5	320	1.60	C400A402406*****
45	116	150	1187	48	3.0	≤45	2.1	360	2.04	C400A402456*****
50	96	230	763	39	4.6	≤60	2.2	400	2.05	C400A402506*****
55	116	180	1140	48	3.3	≤50	2.0	440	2.40	C400A402556*****
65	136	150	1714	56	2.7	≤45	1.7	520	2.81	C400A402656*****
70	116	230	1069	47	3.9	≤60	1.7	560	3.02	C400A402706*****
82	136	180	1699	57	2.9	≤50	1.6	656	3.28	C400A402826*****
100	136	230	1527	56	3.3	≤60	1.4	800	4.16	C400A402107*****