

## Power Electronic Capacitors (PEC)



### FEATURES

- High ripple current
- High impulse current
- Low inductance
- High reliability and long life time
- Shock and vibration proof
- Hermetically sealed version available:
  - no moisture penetration
  - very robust in rough conditions like coastal areas, offshore and traction applications

### APPLICATIONS

- DC link and DC filter in industrial converters and traction converters
- DC link in low-power drives
- DC link in wind turbine converters
- Impulse discharge capacitors for magnetizing and welding

### LINKS TO ADDITIONAL RESOURCES



QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Rated DC voltage min.	500 V <sub>DC</sub>
Rated DC voltage max.	3600 V <sub>DC</sub>
Capacitance min.	30 µF
Capacitance max.	7350 µF
Capacitance tolerance	± 5 % or ± 10 %
Technology	Metallized polypropylene film, self-healing
Dielectric dissipation factor	< 2 x 10 <sup>-4</sup>
Operating temperature min.	-40 °C
Operating temperature max.	+85 °C (hotspot)
Inductance	Up to < 75 nH
Lifetime expectancy	> 100 000 h at U <sub>NDC</sub> and < 70 °C hotspot
Reliability	< 100 FIT
Test voltage	U <sub>tt</sub> = 1.5 x U <sub>NDC</sub> /10 s; U <sub>tc</sub> = 2 x U <sub>NDC</sub> + 1000 V <sub>AC</sub> /10 s
Casing	Aluminum / plastic
Filling	Dry resin (UL 94 V-0)
Standard	IEC 61071, IEC 61881-1



TYPE DESCRIPTION												
TYPE HDMKP...-...B / I / BHS / IHS	C <sub>N</sub> (μF)	U <sub>NDC</sub> (V <sub>DC</sub> )	L <sub>S</sub> (nH)	R <sub>S</sub> (mΩ)	R <sub>th</sub> (K/W)	I <sub>max.</sub> (A)	İ (kA)	İ <sub>S</sub> (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
<b>HDMKP 500, U<sub>NDC</sub> = 500 V</b>												
500-700	700	500	75	1.5	8.2	45	1.8	5.6	105	84.4	4	1 and 2
500-950	950	500	80	1.9	6.5	44	1.8	5.6	135	84.4	4	1 and 2
500-1000	1000	500	75	1.1	6.6	57	2.6	8.0	105	100	4	7 and 8
500-1350	1350	500	80	1.5	5.3	56	2.6	8.0	135	100	4	7 and 8
500-1400	1400	500	95	0.9	4.1	80	3.7	11.2	185	84.4	4	1 and 2
500-1900	1900	500	105	1.2	3.2	79	3.7	11.2	235	84.4	4	1 and 2
500-2000	2000	500	95	0.9	3.1	88	5.3	16.0	185	100	4	7 and 8
500-2100	2100	500	110	0.6	2.9	118	5.6	16.8	260	84.4	4	1 and 2
500-2700	2700	500	105	1.2	2.4	92	5.3	16.0	235	100	4	7 and 8
500-3000	3000	500	110	0.6	2.2	135	8.0	24.0	260	100	4	7 and 8
500-3500	3500	500	105	0.9	2.3	109	6.8	20.5	235	116	4	5, 6, 11, and 13
500-3900	3900	500	110	0.4	2.1	150	10.3	31.1	260	116	4	5 and 6
						120						11 and 13
500-5250	5250	500	110	0.4	1.8	150	13.9	41.8	260	136	2	9 and 10
						120						12 and 14
500-7350	7350	500	130	0.5	1.4	150	14.4	43.2	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 800, U<sub>NDC</sub> = 800 V</b>												
800-375	375	800	75	1.8	8.4	40	1.4	4.2	105	84.4	4	1 and 2
800-515	515	800	80	2.4	6.6	39	1.4	4.2	135	84.4	4	1 and 2
800-540	540	800	75	1.4	6.9	50	2.0	6.0	105	100	4	7 and 8
800-750	750	800	95	1.1	4.2	72	2.8	8.4	185	84.4	4	1 and 2
800-1030	1030	800	105	1.5	3.4	70	2.8	8.4	235	84.4	4	1 and 2
800-1080	1080	800	95	1.0	3.2	85	4.0	12.0	185	100	4	7 and 8
800-1125	1125	800	110	0.7	3.0	105	4.2	12.6	260	84.4	4	1 and 2
800-1500	1500	800	105	1.4	2.6	84	4.0	12.0	235	100	4	7 and 8
800-1620	1620	800	110	0.7	2.3	125	6.0	18.0	260	100	4	7 and 8
800-1900	1900	800	105	1.0	2.4	100	5.0	15.0	235	116	4	5, 6, 11, and 13
800-2085	2085	800	110	0.5	2.2	147	7.5	22.6	260	116	4	5 and 6
						120						11 and 13
800-2250	2250	800	130	0.9	1.8	123	6.0	18.0	335	100	4	7 and 8
800-2850	2850	800	110	0.5	1.9	150	10.6	32.0	260	136	2	9 and 10
						120						12 and 14
800-3900	3900	800	130	0.6	1.5	150	10.7	32.0	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 900, U<sub>NDC</sub> = 900 V</b>												
900-360	360	900	75	1.8	8.5	39	1.4	4.1	105	84.4	4	1 and 4
900-460	460	900	80	2.6	6.9	37	1.3	3.8	135	84.4	4	1 and 2
900-720	720	900	95	1.3	4.1	68	2.7	8.1	185	84.4	4	3 and 4
900-950	950	900	105	1.7	3.3	66	2.6	7.8	235	84.4	4	1 and 2
900-1080	1080	900	110	0.8	2.9	100	4.1	12.2	260	84.4	4	1 and 4
900-1350	1350	900	105	1.2	2.8	86	3.7	11	235	100	4	7 and 8
900-1470	1470	900	110	0.6	2.5	142	5.5	16.5	260	100	4	7 and 8
900-2050	2050	900	105	1.0	2.4	100	5.3	15.9	235	116	4	5, 6, 11, and 13
900-2235	2235	900	110	0.5	2.2	150	7.9	23.7	260	116	4	5 and 6
						120						11 and 13
900-2700	2700	900	110	0.5	1.9	150	10.7	32	260	136	2	9 and 10
						120						12 and 14
900-3900	3900	900	130	0.6	1.5	150	10.7	32	335	136	2	9 and 10
						120						12 and 14



TYPE DESCRIPTION												
TYPE HDMKP...-...B / I / BHS / IHS	C <sub>N</sub> (μF)	U <sub>NDC</sub> (V <sub>DC</sub> )	L <sub>S</sub> (nH)	R <sub>S</sub> (mΩ)	R <sub>th</sub> (K/W)	I <sub>max.</sub> (A)	İ (kA)	İ <sub>S</sub> (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
<b>HDMKP 1.1, U<sub>NDC</sub> = 1100 V</b>												
1.1-240	240	1100	75	2.1	8.5	36	1.1	3.4	105	84.4	4	1 and 2
1.1-325	325	1100	80	2.9	6.8	35	1.1	3.3	135	84.4	4	1 and 4
1.1-480	480	1100	95	1.3	4.4	65	2.3	6.8	185	84.4	4	1 and 2
1.1-650	650	1100	105	1.7	3.5	64	2.2	6.7	235	84.4	4	1 and 2
1.1-720	720	1100	110	0.8	3.3	93	3.4	10.1	260	84.4	4	1 and 2
1.1-860	860	1100	105	1.4	2.9	76	2.9	8.8	235	100	4	7 and 8
1.1-945	945	1100	110	0.7	2.6	117	4.4	13.3	260	100	4	7 and 8
1.1-1310	1310	1100	105	1.2	2.5	92	4.1	12.4	235	116	4	5, 6, 11, and 13
1.1-1425	1425	1100	110	0.6	2.3	136	6.2	18.6	260	116	4	5 and 6
						120						11 and 13
1.1-1890	1890	1100	110	0.5	2.0	150	8.6	25.9	260	136	2	9 and 10
						120						12 and 14
1.1-2550	2550	1100	130	0.7	1.6	150	8.5	25.5	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 1.35, U<sub>NDC</sub> = 1350 V</b>												
1.35-160	160	1350	75	2.6	8.7	32	0.9	2.7	105	84.4	4	3 and 4
1.35-200	200	1350	80	1.1	5.9	57	1.8	5.4	135	84.4	4	1 and 4
1.35-320	320	1350	95	1.7	4.3	57	1.8	5.4	185	84.4	4	3 and 4
1.35-400	400	1350	105	2.4	3.5	54	1.6	4.9	235	84.4	4	1 and 2
1.35-480	480	1350	110	1.1	3.1	84	2.7	8.1	260	84.4	4	1 and 2
1.35-600	600	1350	105	1.6	2.9	72	2.9	8.9	235	100	4	7 and 8
1.35-645	645	1350	110	0.8	2.6	82	3.6	10.9	260	100	4	7 and 8
1.35-910	910	1350	105	1.3	2.6	84	3.5	10.5	235	116	4	5, 6, 11, and 13
1.35-990	990	1350	110	0.6	2.3	126	5.2	15.5	260	116	4	5 and 6
						120						11 and 13
1.35-1290	1290	1350	110	0.6	2.1	147	7.0	21.2	260	136	2	9 and 10
						120						12 and 14
1.35-1800	1800	1350	130	0.7	1.6	146	7.1	21.4	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 1.5, U<sub>NDC</sub> = 1500 V</b>												
1.5-120	120	1500	75	2.9	8.7	31	0.8	2.4	105	84.4	4	1 and 2
1.5-165	165	1500	80	4.0	6.9	30	0.8	2.4	135	84.4	4	1 and 2
1.5-240	240	1500	95	1.8	4.3	56	1.6	4.8	185	84.4	4	1 and 2
1.5-330	330	1500	105	2.4	3.4	55	1.6	4.8	235	84.4	4	1 and 2
1.5-360	360	1500	110	1.2	3.1	81	2.4	7.2	260	84.4	4	1 and 2
1.5-440	440	1500	105	1.8	3.0	67	2.1	6.3	235	100	4	7 and 8
1.5-480	480	1500	110	0.9	2.7	99	3.1	9.4	260	100	4	7 and 8
1.5-620	620	1500	105	1.5	2.6	80	2.9	8.6	235	116	4	5, 6, 11, and 13
1.5-675	675	1500	110	0.7	2.4	121	4.3	12.9	260	116	4	5 and 6
						120						11 and 13
1.5-910	910	1500	110	0.6	2.0	143	6.1	18.3	260	136	2	9 and 10
						120						12 and 14
1.5-1320	1320	1500	130	0.8	1.6	142	6.1	18.5	335	136	2	9 and 10
						120						12 and 14



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<b>HDMKP 1.7, U<sub>NDC</sub> = 1700 V</b>												
1.7-90	90	1700	75	3.2	8.7	28	0.7	2.1	105	84.4	4	1 and 2
1.7-125	125	1700	80	4.3	6.9	28	0.7	2.1	135	84.4	4	1 and 2
1.7-180	180	1700	95	1.9	4.4	51	1.4	4.2	185	84.4	4	1 and 2
1.7-250	250	1700	105	2.6	3.5	50	1.4	4.2	235	84.4	4	1 and 2
1.7-270	270	1700	110	1.2	3.2	76	2.1	6.3	260	84.4	4	1 and 2
1.7-330	330	1700	105	2.0	3.0	63	1.8	5.5	235	100	4	7 and 8
1.7-360	360	1700	110	0.9	2.7	94	2.7	8.3	260	100	4	7 and 8
1.7-460	460	1700	105	1.6	2.7	74	2.5	7.6	235	116	4	5, 6, 11, and 13
1.7-495	495	1700	110	0.8	2.4	111	3.8	11.4	260	116	4	5, 6, 11, and 13
1.7-705	705	1700	110	0.6	2.1	132 120	5.3	16.0	260	136	2	9 and 10 12 and 14
1.7-990	990	1700	130	0.8	1.6	132 120	5.3	16.1	335	136	2	9 and 10 12 and 14
<b>HDMKP 2.0, U<sub>NDC</sub> = 2000 V</b>												
2.0-70	70	2000	75	3.6	8.8	26	0.6	1.8	105	84.4	4	1 and 2
2.0-90	90	2000	80	5.3	7.1	25	0.6	1.7	135	84.4	4	1 and 2
2.0-140	140	2000	95	2.1	4.5	48	1.2	3.6	185	84.4	4	1 and 2
2.0-180	180	2000	105	3.1	3.6	45	1.1	3.4	235	84.4	4	3 and 4
2.0-210	210	2000	110	1.3	3.3	71	1.8	5.4	260	84.4	4	1 and 4
2.0-260	260	2000	105	2.2	3.0	60	1.6	4.9	235	100	4	7 and 8
2.0-285	285	2000	110	1.0	2.7	89	2.5	7.4	260	100	4	7 and 8
2.0-390	390	2000	105	1.7	2.7	72	2.3	6.8	235	116	4	5, 6, 11, and 13
2.0-420	420	2000	110	0.8	2.4	106	3.4	10.3	260	116	4	5, 6, 11, and 13
2.0-555	555	2000	110	0.7	2.1	124 120	4.7	14.1	260	136	2	9 and 10 12 and 14
2.0-765	765	2000	130	0.9	1.7	125 120	4.7	14.1	335	136	2	9 and 10 12 and 14
<b>HDMKP 2.25, U<sub>NDC</sub> = 2250 V</b>												
2.25-55	55	2250	75	4.1	8.9	24	0.5	1.6	105	84.4	4	1 and 2
2.25-75	75	2250	80	5.7	7.1	23	0.5	1.6	135	84.4	4	3 and 4
2.25-110	110	2250	95	2.4	4.6	44	1.1	3.2	185	84.4	4	1 and 4
2.25-150	150	2250	105	3.3	3.6	44	1.1	3.2	235	84.4	4	1 and 2
2.25-165	165	2250	110	1.5	3.3	65	1.6	4.8	260	84.4	4	1 and 4
2.25-210	210	2250	105	2.3	3.1	57	1.5	4.4	235	100	4	7 and 8
2.25-225	225	2250	110	1.1	2.8	83	2.2	6.5	260	100	4	7 and 8
2.25-320	320	2250	105	1.8	2.7	68	2.1	6.2	235	116	4	5, 6, 11, and 13
2.25-345	345	2250	110	0.9	2.5	99	3.1	9.3	260	116	4	5, 6, 11, and 13
2.25-450	450	2250	110	0.7	2.1	120	4.3	12.8	260	136	2	9, 10, 12, and 14
2.25-630	630	2250	130	1.0	1.7	120	4.3	12.9	335	136	2	9, 10, 12, and 14
<b>HDMKP 2.7, U<sub>NDC</sub> = 2700 V</b>												
2.7-40	40	2700	75	4.6	8.8	22	0.5	1.4	105	84.4	4	1 and 4
2.7-50	50	2700	80	7.0	7.2	21	0.4	1.3	135	84.4	4	2 and 3
2.7-80	80	2700	95	2.7	4.6	41	0.9	2.8	185	84.4	4	3 and 4
2.7-100	100	2700	105	3.9	3.7	39	0.8	2.5	235	84.4	4	1 and 4
2.7-120	120	2700	110	1.7	3.3	61	1.4	4.2	260	84.4	4	1 and 4
2.7-150	150	2700	105	2.7	3.1	52	1.2	3.7	235	100	4	7 and 8
2.7-165	165	2700	110	1.3	2.8	76	1.8	5.5	260	100	4	7 and 8
2.7-220	220	2700	105	2.1	2.8	62	1.7	5.1	235	116	4	5, 6, 11, and 13
2.7-240	240	2700	110	1.0	2.5	91	2.6	7.7	260	116	4	5, 6, 11, and 13
2.7-315	315	2700	110	0.8	2.2	110	3.5	10.7	260	136	2	9, 10, 12, and 14



TYPE DESCRIPTION												
TYPE HDMKP...-...B / I / BHS / IHS	C <sub>N</sub> (μF)	U <sub>NDC</sub> (V <sub>DC</sub> )	L <sub>S</sub> (nH)	R <sub>S</sub> (mΩ)	R <sub>th</sub> (K/W)	I <sub>max.</sub> (A)	İ (kA)	İ <sub>S</sub> (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
2.7-435	435	2700	130	1.1	1.7	110	3.5	10.7	335	136	2	9, 10, 12, and 14
<b>HDMKP 3.0, U<sub>NDC</sub> = 3000 V</b>												
3.0-40	40	3000	80	3.8	6.7	28	0.8	2.4	135	84.4	4	1 and 2
3.0-57	57	3000	80	2.8	5.6	36	1.1	3.4	135	100	4	7 and 8
3.0-75	75	3000	80	2.2	5.2	42	1.5	4.5	135	116	4	5, 6, 11, and 13
3.0-80	80	3000	105	2.2	3.4	51	1.6	4.8	235	84.4	4	1 and 2
3.0-100	100	3000	80	1.8	4.7	50	2.0	6.0	135	136	2	9, 10, 12, and 14
3.0-115	115	3000	105	1.9	2.8	64	2.3	6.9	235	100	4	7 and 8
3.0-120	120	3000	130	1.5	2.4	75	2.4	7.1	335	84.4	4	1 and 2
3.0-150	150	3000	105	1.4	2.6	75	3.0	8.9	235	116	4	5, 6, 11, and 13
3.0-170	170	3000	130	1.2	2.0	93	3.4	10.3	335	100	4	7 and 8
3.0-200	200	3000	105	1.2	2.3	88	4.0	11.9	235	136	2	9, 10, 12, and 14
3.0-225	225	3000	130	0.9	1.8	110	4.4	13.4	335	116	4	5, 6, 11, and 13
3.0-300	300	3000	130	0.8	1.6	129	5.9	17.9	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 3.2, U<sub>NDC</sub> = 3200 V</b>												
3.2-35	35	3200	80	4.0	6.7	27	0.75	2.2	135	84.4	4	1 and 2
3.2-50	50	3200	80	2.9	5.7	34	1.0	3.2	135	100	4	7 and 8
3.2-65	65	3200	80	2.3	5.2	40	1.4	4.1	135	116	4	5, 6, 11, and 13
3.2-70	70	3200	105	2.5	3.4	49	1.5	4.4	235	84.4	4	1 and 2
3.2-90	90	3200	80	1.8	4.6	48	1.9	5.7	135	136	2	9, 10, 12, and 14
3.2-100	100	3200	105	1.9	2.8	60	2.1	6.4	235	100	4	7 and 8
3.2-105	105	3200	130	1.6	2.4	72	2.2	6.7	335	84.4	4	1 and 2
3.2-130	130	3200	105	1.5	2.6	73	2.7	8.3	235	116	4	5, 6, 11, and 13
3.2-150	150	3200	130	1.3	2.0	90	3.2	9.6	335	100	4	7 and 8
3.2-180	180	3200	105	1.2	2.3	87	3.8	11.5	235	136	2	9, 10, 12, and 14
3.2-195	195	3200	130	1.0	1.9	107	4.1	12.4	335	116	4	5, 6, 11, and 13
3.2-270	270	3200	130	0.8	1.7	128	5.7	17.3	335	136	2	9 and 10
						120						12 and 14
<b>HDMKP 3.6, U<sub>NDC</sub> = 3600 V</b>												
3.6-30	30	3600	80	4.3	6.7	25	0.7	2.1	135	84.4	4	1 and 2
3.6-43	43	3600	80	3.1	5.7	33	1.0	3.0	135	100	4	7 and 8
3.6-56	56	3600	80	2.4	5.3	39	1.3	3.9	135	116	4	5, 6, 11, and 13
3.6-60	60	3600	105	2.6	3.4	47	1.4	4.2	235	84.4	4	1 and 2
3.6-80	80	3600	80	1.9	4.7	47	1.8	5.4	135	136	2	9, 10, 12, and 14
3.6-86	86	3600	105	2.0	2.8	60	2.0	6.0	235	100	4	7 and 8
3.6-90	90	3600	130	1.7	2.4	69	2.1	6.3	335	84.4	4	1 and 2
3.6-112	112	3600	105	1.5	2.6	70	2.6	7.8	235	116	4	5, 6, 11, and 13
3.6-130	130	3600	130	1.3	2.0	90	3.0	9.0	335	100	4	7 and 8
3.6-160	160	3600	105	1.3	2.3	84	3.6	10.8	235	136	2	9, 10, 12, and 14
3.6-168	168	3600	130	1.0	1.9	105	3.9	11.7	335	116	4	5, 6, 11, and 13
3.6-240	240	3600	130	0.8	1.7	123	5.4	16.2	335	136	2	9 and 10
						120						12 and 14

<b>DIMENSIONS</b> in millimeters			
<b>HDMKP...-...I</b>		<b>HDMKP...-...B</b>	
<b>HDMKP...-...IHS</b>		<b>HDMKP...-...BHS</b>	
DWG NO.	DIAMETER D (mm)	DISTANCE d (mm)	TERMINAL STYLE HDMKP ...-... I, B, IHS, OR BHS
1	84	32	I
2	84	32	B
3	84	45	I
4	84	45	B
5	116	50	I
6	116	50	B
7	100	50	I
8	100	50	B
9	136	50	I
10	136	50	B
11	116	50	IHS
12	136	50	IHS
13	116	50	BHS
14	136	50	BHS

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Other voltage, current, and capacitance values are available on request without additional cost and lead time for the individual design.



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