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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

3D Models

QUICK REFERENCE DATA	
DESCRIPTION	**VALUE**
Rated DC voltage min.	500 V_{DC}
Rated DC voltage max.	3600 V_{DC}
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^{-4}
Operating temperature min.	-40 °C
Operating temperature max.	+85 °C (hotspot)
Inductance	Up to < 75 nH
Lifetime expectancy	> 100 000 h at U_{NDC} and < 70 °C hotspot
Reliability	< 100 FIT
Test voltage	U_{tt} = 1.5 x U_{NDC}/10 s; U_{tc} = 2 x U_{NDC} + 1000 V_{AC}/10 s
Casing	Aluminum / plastic
Filling	Dry resin (UL 94 V-0)
Standard	IEC 61071, IEC 61881-1

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TYPE DESCRIPTION

TYPE HDMKP...-...B / I / BHS / IHS	C_N (µF)	U_{NDC} (V_{DC})	L_S (nH)	R_S (mΩ)	R_{th} (K/W)	$I_{max.}$ (A)	Î (kA)	$Î_S$ (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
HDMKP 500, U_{NDC} = 500 V												
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
HDMKP 800, U_{NDC} = 800 V												
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
HDMKP 900, U_{NDC} = 900 V												
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

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TYPE DESCRIPTION

TYPE HDMKP...-...B / I / BHS / IHS	C_N (µF)	U_{NDC} (V_{DC})	L_S (nH)	R_S (mΩ)	R_{th} (K/W)	$I_{max.}$ (A)	Î (kA)	$Î_S$ (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
HDMKP 1.1, U_{NDC} = 1100 V												
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
HDMKP 1.35, U_{NDC} = 1350 V												
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
HDMKP 1.5, U_{NDC} = 1500 V												
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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TYPE DESCRIPTION

TYPE HDMKP...-...B / I / BHS / IHS	C_N (µF)	U_{NDC} (V_{DC})	L_S (nH)	R_S (mΩ)	R_{th} (K/W)	$I_{max.}$ (A)	Î (kA)	$Î_S$ (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
HDMKP 1.7, U_{NDC} = 1700 V												
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	5.3	16.0	260	136	2	9 and 10
						120						12 and 14
1.7-990	990	1700	130	0.8	1.6	132	5.3	16.1	335	136	2	9 and 10
						120						12 and 14
HDMKP 2.0, U_{NDC} = 2000 V												
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	4.7	14.1	260	136	2	9 and 10
						120						12 and 14
2.0-765	765	2000	130	0.9	1.7	125	4.7	14.1	335	136	2	9 and 10
						120						12 and 14
HDMKP 2.25, U_{NDC} = 2250 V												
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
HDMKP 2.7, U_{NDC} = 2700 V												
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

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TYPE DESCRIPTION

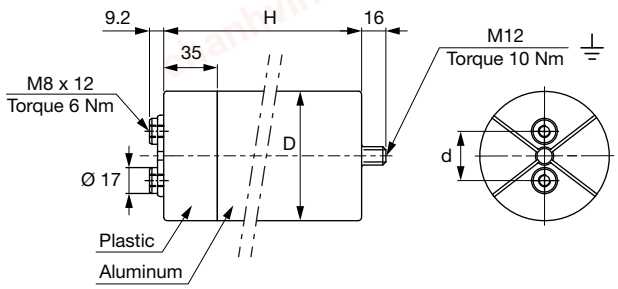
TYPE HDMKP...-...B / I / BHS / IHS	C_N (µF)	U_{NDC} (V_{DC})	L_S (nH)	R_S (mΩ)	R_{th} (K/W)	$I_{max.}$ (A)	Î (kA)	$Î_S$ (kA)	H (mm)	DIA. (mm)	MOQ / PU (pcs)	DRAWING NO.
2.7-435	435	2700	130	1.1	1.7	110	3.5	10.7	335	136	2	9, 10, 12, and 14
HDMKP 3.0, U_{NDC} = 3000 V												
3.0-40	40	3000	80	3.8	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
HDMKP 3.2, U_{NDC} = 3200 V												
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
HDMKP 3.6, U_{NDC} = 3600 V												
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

For technical questions, contact: esta@vishay.com
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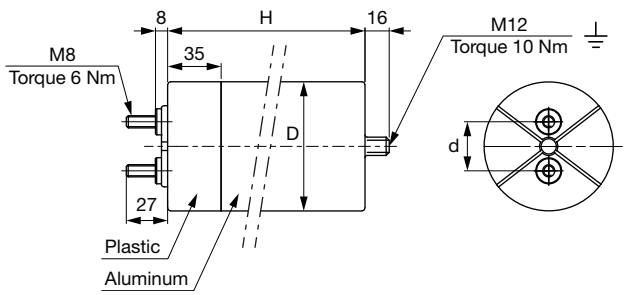
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DIMENSIONS in millimeters

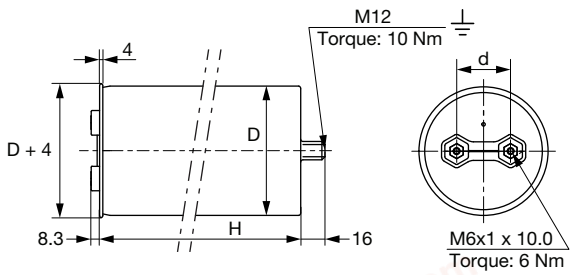
HDMKP...-...I



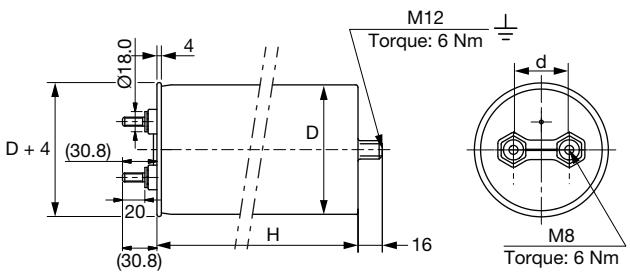
HDMKP...-...B



HDMKP...-...IHS



HDMKP...-...BHS



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

Contact Us

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

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