

Capacitors for Power Electronics



KEY BENEFITS

- High RMS current rating: up to 150 A
- High impulse current rating: up to 25 kA
- Low self-inductance of 70 nH
- High reliability and life expectancy
- Withstands heavy-duty shock and vibration
- Non-polar dielectric

APPLICATIONS

- DC-linking and DC filtering in industry and traction converters
- DC-linking in low-power drives
- DC-linking in wind turbine converters
- Impulse discharge capacitors for magnetizing and welding
- Replacement of aluminum electrolytic capacitors (lower capacitance, higher currents)
- AC filter in UPS

RESOURCES

- Datasheet: HDMKP - <http://www.vishay.com/doc?13115>
- For technical questions contact esta@vishay.com



Capacitors for Power Electronics

QUICK REFERENCE DATA	
DESCRIPTION	VALUE
Dielectric	Metallized polypropylene
Dissipation factor (tan δ_n)	$< 2 \times 10^{-4}/1$ kHz
Capacitance tolerance	$\pm 5\%$
Operating temperature (hot spot)	$\theta_{min.} - 40\text{ }^\circ\text{C}$ $\theta_{max.} + 80\text{ }^\circ\text{C}$
Inductance	< 70 nH
Lifetime expectancy	100 000 h at U_R and $< 70\text{ }^\circ\text{C}$ hotspot
Reliability	100 FIT
Test voltage	Terminal/terminal = $1.5 \times U_{RDC}$, 10 s terminal/case = $2 \times U_{RDC} + 1000 V_{AC}$, 60 s
Casing material	Aluminum/bergamid 3700 UF
Filling	Resin dry, UL 94 V-0
Standards	IEC 61071-1, IEC 61881 and EN61071-1

HDMKP 900, $U_{NDC} = 900\text{ V}$, $U_N = 220\text{ V}_{RMS}$												
TYPE	C_N [uF]	VOLTAGE V_{DC}	R_S [m Ω]	R_{th} [K/W]	$I_{max.}$ [A]	I_P [A]	\hat{I} [A]	HEIGHT [mm]	DIA. [mm]	WEIGHT [kg]	PACKAGING UNIT	DRAWING NO.
900-360	360	900	2.4	6.0	32.0	1309	3928	105	84.4	0.7	4	1 and 3
900-460	460	900	3.2	5.4	29.0	1258	3775	135	84.4	0.9	4	1 and 3
900-720	720	900	1.3	3.2	59.0	1329	3988	185	84.4	1.2	4	1 and 3
900-950	950	900	1.7	2.7	56.0	1300	3899	235	84.4	1.6	4	1 and 3
900-1080	1080	900	0.9	2.2	85.0	1316	3948	260	84.4	1.7	4	1 and 3
900-2050	2050	900	1.3	1.7	75.0	5610	16 830	235	116	3.0	4	2 and 4
900-2235	2235	900	0.6	1.6	120.0	8385	25 155	260	116	3.3	4	2 and 4
HDMKP 1.1, $U_{NDC} = 1100\text{ V}$, $U_N = 275\text{ V}_{RMS}$												
1.1-240	240	1100	2.9	4.1	28.0	1125	3375	105	84.4	0.7	4	1 and 3
1.1-325	325	1100	3.8	4.8	27.0	1112	3335	135	84.4	0.9	4	1 and 3
1.1-480	480	1100	1.6	2.5	50.0	2250	6750	185	84.4	1.2	4	1 and 3
1.1-650	650	1100	0.8	2.7	50.0	2220	6660	235	84.4	1.6	4	1 and 3
1.1-720	720	1100	0.5	2.2	75.0	3375	10 125	260	84.4	1.7	4	1 and 3
1.1-1310	1310	1100	1.5	1.8	72.0	4485	13 455	235	116	3.0	4	2 and 4
1.1-1425	1425	1100	0.6	1.7	114.0	6680	20 045	260	116	3.3	4	2 and 4
HDMKP 1.35, $U_{NDC} = 1350\text{ V}$, $U_N = 325\text{ V}_{RMS}$												
1.35-160	160	1350	3.2	6.7	26.0	900	2699	105	84.4	0.7	4	1 and 3
1.35-200	200	1350	1.2	4.6	51.0	893	2680	135	84.4	0.9	4	1 and 3
1.35-320	320	1350	1.7	3.5	50.0	900	2699	185	84.4	1.2	4	1 and 3
1.35-400	400	1350	2.4	3.1	45.0	820	2460	235	84.4	1.6	4	1 and 3
1.35-480	480	1350	1.2	2.4	72.0	900	2699	260	84.4	1.7	4	1 and 3
1.35-910	910	1350	1.6	1.9	70.0	3735	11 205	235	116	3.0	4	2 and 4
1.35-990	990	1350	0.7	1.8	108.0	5565	16 695	260	116	3.3	4	2 and 4
HDMKP 2.0, $U_{NDC} = 2000\text{ V}$, $U_N = 500\text{ V}_{RMS}$												
2.0-70	70	2000	4.4	7.2	21.0	593	1778	105	84.4	0.7	4	1 and 3
2.0-90	90	2000	5.8	5.9	20.0	585	1755	135	84.4	0.9	4	1 and 3
2.0-140	140	2000	2.3	3.8	41.0	593	1778	185	84.4	1.3	4	1 and 3
2.0-180	180	2000	3.0	3.1	39.0	586	1757	235	84.4	1.6	4	1 and 3
2.0-210	210	2000	1.6	2.7	60.0	593	1780	260	84.4	1.7	4	1 and 3
2.0-390	390	2000	2.0	2.1	60.0	2455	7365	235	116	3.0	4	2 and 4
2.0-420	420	2000	0.9	1.9	90.0	3650	10 955	260	116	3.3	4	2 and 4
HDMKP 2.25, $U_{NDC} = 2250\text{ V}$, $U_N = 550\text{ V}_{RMS}$												
2.25-55	55	2250	4.8	7.4	20.0	530	1590	105	84.4	0.7	4	1 and 3
2.25-75	75	2250	6.4	6.0	19.0	523	1568	135	84.4	0.9	4	1 and 3
2.25-110	110	2250	2.5	3.9	39.0	530	1590	185	84.4	1.2	4	1 and 3
2.25-150	150	2250	3.3	3.2	37.0	523	1568	235	84.4	1.6	4	1 and 3
2.25-165	165	2250	1.7	2.7	56.0	530	1590	260	84.4	1.7	4	1 and 3
2.25-320	320	2250	2.4	2.4	56.0	2235	6705	235	116	3.0	4	2 and 4
2.25-345	345	2250	1.1	2.0	90.0	3330	9990	260	116	3.3	4	2 and 4
HDMKP 2.7, $U_{NDC} = 2700\text{ V}$, $U_N = 660\text{ V}_{RMS}$												
2.7-40	40	2700	5.1	8.4	18.0	464	1391	105	84.4	0.7	4	1 and 3
2.7-50	50	2700	7.4	6.5	17.0	419	1258	135	84.4	0.9	4	1 and 3
2.7-80	80	2700	5.1	6.8	20.0	464	1391	185	84.4	1.2	4	1 and 3
2.7-100	100	2700	7.4	5.3	19.0	419	1258	235	84.4	1.6	4	1 and 3
2.7-120	120	2700	5.2	6.2	21.0	450	1349	260	84.4	1.7	4	1 and 3
2.7-220	220	2700	2.4	2.4	52.0	925	2775	235	116	3.0	4	2 and 4
2.7-240	240	2700	1.1	2.0	84.0	927	2781	260	116	3.3	4	2 and 4

Revision 17-Mar-10

Note

• Other voltage, current and capacitance values are available on request

DIMENSIONS
