



Power Electronic, Standard AC Capacitors

STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELF-HEALING, WITH FUSE

AC-CAPACITORS, COMMUTATION AND DAMPING CAPACITORS

Series KMKP/KA 900V - 3500V, higher voltages upon request.

Capacitance range from 0.1 to 100 μ F, in relation to rated voltage and dimension. Other capacitance values, upon request.

GENERAL

Vishay ESTA Commutation capacitors are used in static frequency changers. They act, for example, as quenching capacitors taking over for a short time the current of the main thyristor thus making sure that the latter will safely block when the voltage returns.

The current load is very high on commutation and damping capacitors. Owing to the non-sinusoidal characteristic of the voltage path, high pulse-shaped recharge currents occur. With regard to ohmic and dielectric losses, the commutation capacitors have to be of a particularly high quality. Since modern low-loss dielectrics are applied and also the current paths are generously dimensioned, Vishay ESTA commutation capacitors are ideal for such extreme loads.

TECHNICAL DATA
OPERATING MODE
continuous operation

CLASS OF APPLICATION
HSF (refer to general information)

IMPREGNATION
Oil (NON PCB, refer general information)

PERMISSIBLE TEMPERATURE RANGE
Min./max. casing temperature: - 25°/70°C
Min./max. storage temperature: - 40°/85°C

SELF-DISCHARGE TIME CONSTANT
> 10.000s

PERMISSIBLE RELATIVE AIR HUMIDITY
95%

LIFE EXPECTANCY WITH 3% FAILURE RATE
100000h

CONNECTIONS
AMP plugs 6.3 x 0.8
Threaded bolts M10

MOUNTING POSITION
Vertical/Horizontal
Upside down position, upon request only

PROTECTION
Overpressure tear-off fuse, refer to general information

LOSS FACTOR
50Hz 1.5 x 10⁻⁴
10kHz 5.0 x 10⁻⁴

CAPACITANCE TOLERANCE
± 10%

TEST VOLTAGES
terminal/terminal 2.15 x Un DC/2 AC/ 10 sec.
terminal/casing 2.0 x Un/2 + 1000 VAC/60 sec.
min. 3.000VAC/10 sec.

PEAK CURRENT (periodical) du/dt x C [A]
STANDARD
VDE 0560/12 IEC 61071-1 EN 61071-1

DIELECTRIC
metallized polypropylene film, refer to general information



STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELF-HEALING, WITH FUSE

**AC-CAPACITORS, COMMUTATION AND DAMPING
CAPACITORS SERIES KMKP/KA 900V - 3500V**

RATED VOLTAGE	U_n	900V
RMS voltage	U _{rms}	640V
Peak voltage (periodical)	U _s	1344V
Surge peak voltage (not periodical)	U _{smax}	2688V
DC voltage	U _{DC}	1800V

MODEL	C μF	I A	du / dt V / μs	DIMENSIONS Ø d x h (mm)	WEIGHT kg	FIGURE*
KMKP 900 - 0.10 IA	0.10	12.0	750	30 x 52	0.04	1
KMKP 900 - 0.22 IA	0.22	12.0	750	30 x 52	0.04	1
KMKP 900 - 0.33 IA	0.33	12.0	600	30 x 52	0.04	1
KMKP 900 - 0.47 IA	0.47	12.0	500	30 x 52	0.04	1
KMKP 900 - 0.68 IA	0.68	15.0	500	30 x 52	0.04	1
KMKP 900 - 1.0 IA	1.0	16.0	500	35 x 52	0.05	1
KMKP 900 - 2.2 IA	2.2	16.0	500	35 x 72	0.07	1
KMKP 900 - 3.3 IA	3.3	16.0	500	35 x 82	0.08	1
KMKP 900 - 4.7 IA	4.7	18.0	300	40 x 97	0.12	1
KMKP 900 - 6.8 IA	6.8	18.0	300	50 x 92	0.18	4
KMKP 900 - 10 IA	10.0	18.0	300	60 x 97	0.27	4
KMKP 900 - 15 IA	15.0	18.0	300	60 x 127	0.31	4
KMKP 900 - 15 IB	15.0	40.0	300	64 x 109	0.31	6 l
KMKP 900 - 22 IB	22.0	80.0	300	64 x 140	0.45	6 l
KMKP 900 - 33 IB	33.0	80.0	300	64 x 240	0.68	6 l
KMKP 900 - 47 IB	47.0	80.0	300	64 x 240	1.06	6 l
KMKP 900 - 68 IB	68.0	80.0	300	84 x 240	1.33	6 l
KMKP 900 - 100 IB	100.0	80.0	300	84 x 340	1.42	6 l

*See dimensional drawings document number : 13104

Other values available upon request. Standard capacitors types usually, available ex stock. Non-standard and custom styles to be manufactured in accordance with specific orders. Minimum order quantities are applicable depending on the various capacitor types. Vishay reserve the right to change any dimensions without notice.

**STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELF-HEALING, WITH FUSE****AC-CAPACITORS, COMMUTATION AND DAMPING****CAPACITORS SERIES KMKP/KA 900V - 3500V**

RATED VOLTAGE	U_n	1400V
RMS voltage	U _{rms}	1000V
Peak voltage (periodical)	U _s	2100V
Surge peak voltage (not periodical)	U _{smax}	4200V
DC voltage	U _{DC}	3000V

MODEL	C μF	I A	du / dt V / μs	DIMENSIONS Ø d x h (mm)	WEIGHT kg	FIGURE*
KMKP 1400 - 0.10 SA	0.10	10.0	900	40 x 52	0.07	3
KMKP 1400 - 0.22 SA	0.22	10.0	900	40 x 52	0.07	3
KMKP 1400 - 0.33 SA	0.33	10.0	900	40 x 52	0.07	3
KMKP 1400 - 0.47 SA	0.47	10.0	750	40 x 52	0.07	3
KMKP 1400 - 0.68 IA	0.68	18.0	500	50 x 72	0.16	4
KMKP 1400 - 1.0 IA	1.0	18.0	500	50 x 72	0.16	4
KMKP 1400 - 2.2 IA	2.2	18.0	500	50 x 97	0.19	4
KMKP 1400 - 3.3 IA	3.3	18.0	450	50 x 127	0.25	4
KMKP 1400 - 4.7 IB	4.7	40.0	450	64 x 140	0.45	6 I
KMKP 1400 - 6.8 IB	6.8	60.0	450	64 x 190	0.61	6 I
KMKP 1400 - 6.8 IBK	6.8	80.0	450	84 x 140	0.78	6 I
KMKP 1400 - 10 IB	10.0	60.0	250	64 x 190	0.61	6 I
KMKP 1400 - 15 IB	15.0	80.0	250	84 x 190	1.05	6 I
KMKP 1400 - 22 IB	22.0	80.0	250	84 x 190	1.16	6 I
KMKP 1400 - 30 IB	30.0	80.0	250	84 x 240	1.33	6 I
KMKP 1400 - 0.10 IAX	0.10	10.0	900	35 x 52	0.05	2
KMKP 1400 - 0.22 IAX	0.22	10.0	900	35 x 52	0.05	2
KMKP 1400 - 0.33 IAX	0.33	10.0	900	40 x 52	0.07	2
KMKP 1400 - 0.47 IAX	0.47	10.0	750	40 x 52	0.07	2
KMKP 1400 - 1.0 IAX	1.0	10.0	500	40 x 75	0.09	2

RATED VOLTAGE	U_n	3500V
RMS voltage	U _{rms}	2480V
Peak voltage (periodical)	U _s	5208V
Surge peak voltage (not periodical)	U _{smax}	10416V
DC voltage	U _{DC}	7200V

MODEL	C μF	I A	du / dt V / μs	DIMENSIONS Ø d x h (mm)	WEIGHT kg	FIGURE*
KMKP 3500 - 0.10 SA	0.10	12.0	1900	40 x 97	0.16	3
KMKP 3500 - 0.22 SA	0.22	12.0	1900	40 x 127	0.16	3
KMKP 3500 - 0.33 SA	0.33	12.0	900	50 x 127	0.25	3
KMKP 3500 - 0.47 SA	0.47	15.0	750	50 x 127	0.25	3
KA 3500 - 0.68 SA	0.68	15.0	750	60 x 127	0.36	3
KA 3500 - 1.0 SB	1.0	30.0	500	64 x 190	0.61	7 II
KA 3500 - 1.5 SB	1.5	60.0	400	84 x 190	1.05	7 II
KA 3500 - 2.0 SB	2.0	80.0	400	84 x 190	1.05	7 II
KA 3500 - 3.0 SB	3.0	80.0	400	84 x 210	1.16	7 II

*See dimensional drawings document number : 13104

Other values available upon request. Standard capacitors types usually, available ex stock. Non-standard and custom styles to be manufactured in accordance with specific orders. Minimum order quantities are applicable depending on the various capacitor types. Vishay reserve the right to change any dimensions without notice.

Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	320 V
RMS voltage	U _{rms}	230 V
Peak voltage (periodical)	U _s	483 V
Surge peak voltage (not periodical)	U _{smax}	966 V
DC voltage	U _{DC}	1000 V

Type	C μF	I A	du / dt V / μs	Dimensions ø d x h (mm)	Weight kg	Figure
KMKP 320 - 4.7 IA	4.7	15.0	600	30 x 72	0.05	1
KMKP 320 - 6.8 IA	6.8	15.0	600	35 x 72	0.07	1
KMKP 320 - 10 IA	10.0	15.0	600	40 x 72	0.09	1
KMKP 320 - 15 IA	15.0	18.0	600	50 x 72	0.14	1
KMKP 320 - 22 IA	22.0	18.0	600	60 x 82	0.16	1
KMKP 320 - 33 IA	33.0	18.0	600	50 x 109	0.21	1
KMKP 320 - 47 IA	47.0	18.0	300	60 x 109	0.31	1
KMKP 320 - 68 IA	68.0	18.0	300	60 x 127	0.36	4
KMKP 320 - 100 IB	100.0	50.0	300	64 x 140	0.40	6 I
KMKP 320 - 240 IB	240.0	80.0	300	84 x 190	1.05	6 I
KMKP 320 - 340 IB	340.0	80.0	300	84 x 240	1.33	6 I

Rated voltage	U_n	600 V
RMS voltage	U _{rms}	425 V
Peak voltage (periodical)	U _s	893 V
Surge peak voltage (not periodical)	U _{smax}	1785 V
DC voltage	U _{DC}	1250 V

Type	C μF	I A	du / dt V / μs	Dimensions ø d x h (mm)	Weight kg	Figure
KMKP 600 - 1.0 IA	1.0	12.0	600	30 x 52	0.04	1
KMKP 600 - 2.2 IA	2.2	12.0	600	30 x 72	0.05	1
KMKP 600 - 3.3 IA	3.3	12.0	600	35 x 52	0.07	1
KMKP 600 - 4.7 IA	4.7	15.0	600	35 x 72	0.07	1
KMKP 600 - 6.8 IA	6.8	15.0	600	35 x 72	0.09	1
KMKP 600 - 10 IA	10.0	15.0	600	50 x 72	0.14	1
KMKP 600 - 15 IA	15.0	18.0	600	40 x 127	0.16	1
KMKP 600 - 22 IB	22.0	40.0	600	60 x 109	0.21	6 I
KMKP 600 - 33 IB	22.0	50.0	300	60 x 109	0.31	6 I
KMKP 600 - 47 IB	47.0	80.0	300	84 x 105	0.45	6 I
KMKP 600 - 68 IB	68.0	80.0	300	84 x 140	0.78	6 I
KMKP 600 - 100 IB	100.0	80.0	300	64 x 240	1.05	6 I

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Other values upon request

The capacitors types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.

Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	750 V
RMS voltage	U_{rms}	530 V
Peak voltage (periodical)	U_s	1113 V
Surge peak voltage (not periodical)	U_{smax}	2226 V
DC voltage	U_{DC}	1500 V

Type	C μF	I A	du / dt V / μs	Dimensions ϕ d x h (mm)	Weight kg	Figure
KMKP 750 - 1.0 IA	1.0	12.0	600	30 x 52	0.04	1
KMKP 750 - 2.2 IA	2.2	12.0	600	30 x 72	0.05	1
KMKP 750 - 3.3 IA	3.3	15.0	600	35 x 72	0.07	1
KMKP 750 - 4.7 IA	4.7	15.0	600	40 x 72	0.09	1
KMKP 750 - 6.8 IA	6.8	15.0	600	50 x 72	0.14	1
KMKP 750 - 10 IA	10.0	18.0	600	50 x 97	0.18	1
KMKP 750 - 15 IA	15.0	18.0	600	60 x 97	0.26	1
KMKP 750 - 22 IB	22.0	40.0	300	60 x 109	0.31	6 I
KMKP 750 - 33 IB	33.0	60.0	300	64 x 140	0.45	6 I
KMKP 750 - 47 IB	47.0	80.0	300	64 x 190	0.61	6 I
KMKP 750 - 68 IB	68.0	80.0	300	84 x 190	1.05	6 I
KMKP 750 - 100 IB	100.0	80.0	300	84 x 240	1.28	6 I
KMKP 750 - 120 IB	120.0	80.0	300	84 x 240	1.33	6 I

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Other values upon request

The capacitor types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.

Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	1100 V
RMS voltage	U _{rms}	780 V
Peak voltage (periodical)	U _s	1638 V
Surge peak voltage (periodical)	U _{smax}	3276 V
DC voltage	U _{DC}	2250 V

Type	C μF	I A	du / dt V / μs	Dimensions ∅ d x h (mm)	Weight kg	Figure
KMKP 1100 - 1.0 IA	1.0	18.0	500	50 x 72	0.14	4
KMKP 1100 - 2.2 IA	2.2	18.0	500	50 x 97	0.24	4
KMKP 1100 - 3.3 IA	3.3	18.0	500	50 x 127	0.25	4
KMKP 1100 - 4.7 IA	4.7	18.0	500	50 x 127	0.30	4
KMKP 1100 - 6.8 IA	6.8	18.0	200	60 x 127	0.36	4
KMKP 1100 - 10 IB	10.0	60.0	200	64 x 140	0.45	6 I
KMKP 1100 - 15 IB	15.0	60.0	200	64 x 190	0.61	6 I
KMKP 1100 - 22 IB	22.0	80.0	200	84 x 190	1.05	6 I
KMKP 1100 - 33 IB	33.0	80.0	200	84 x 190	1.05	6 I
KMKP 1100 - 47 IB	47.0	80.0	200	84 x 240	1.33	6 I

Other values upon request

The capacitor types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.

Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	1800 V
RMS voltage	U _{rms}	1280 V
Peak voltage (periodical)	U _s	2688 V
Surge peak voltage (not periodical)	U _{smax}	5376 V
DC voltage	U _{DC}	3600 V

Type	C μF	I A	du / dt V / μs	Dimensions ø d x h (mm)	Weight kg	Figure
KMKP 1800 - 0.10 SA	0.10	12.0	900	40 x 72	0.09	3
KMKP 1800 - 0.22 SA	0.22	12.0	900	40 x 72	0.09	3
KMKP 1800 - 0.33 SA	0.33	12.0	900	40 x 72	0.09	3
KMKP 1800 - 0.47 SA	0.47	15.0	750	40 x 72	0.16	3
KMKP 1800 - 0.68 SA	0.68	16.0	750	40 x 127	0.16	3
KMKP 1800 - 1.0 IA	1.0	18.0	500	50 x 72	0.25	4
KMKP 1800 - 1.5 IA	1.5	20.0	500	60 x 84	0.26	4
KMKP 1800 - 2.2 IA	2.2	20.0	500	50 x 127	0.25	4
KMKP 1800 - 3.3 IA	3.3	20.0	400	60 x 127	0.36	4
KMKP 1800 - 4.7 IB	4.7	60.0	400	64 x 140	0.45	6 I
KMKP 1800 - 6.8 IB	6.8	80.0	400	64 x 190	0.61	6 I
KA 1800 - 10 IB	10.0	80.0	300	84 x 190	1.05	6 I
KA 1800 - 15 IB	15.0	80.0	300	84 x 210	1.16	6 I

Rated voltage	U_n	2100 V
RMS voltage	U _{rms}	1485 V
Peak voltage (periodical)	U _s	3119 V
Surge peak voltage (not periodical)	U _{smax}	6237 V
DC voltage	U _{DC}	4200 V

Type	C μF	I A	du / dt V / μs	Dimensions ø d x h (mm)	Weight kg	Figure
<i>upon request</i>						

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Other values upon request

The capacitors types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.

Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	2250 V
RMS voltage	U _{rms}	1590 V
Peak voltage (periodical)	U _s	3339 V
Surge peak voltage (not periodical)	U _{smax}	6678 V
DC voltage	U _{DC}	3600 V

Type	C μF	I A	du / dt V / μs	Dimensions ∅ d x h (mm)	Weight kg	Figure
KA 2250 - 0.22 SA	0.22	15.0	900	40 x 82	0.10	3
KMKP 2250 - 0.33 IA	0.33	15.0	900	50 x 82	0.10	4
KMKP 2250 - 0.47 IA	0.47	18.0	750	50 x 82	0.16	4
KMKP 2250 - 0.68 IA	0.68	18.0	750	60 x 82	0.24	4
KMKP 2250 - 1.0 IA	1.0	18.0	500	60 x 82	0.24	4
KA 2250 - 1.5 IA	1.5	20.0	500	50 x 190	0.36	4
KA 2250 - 2.2 IA	2.2	20.0	500	50 x 190	0.41	4
KA 2250 - 3.3 IB	3.3	60.0	500	64 x 190	0.61	6 II
KA 2250 - 4.7 IB	4.7	80.0	300	84 x 190	1.05	6 II
KA 2250 - 6.8 IB	6.8	80.0	300	84 x 190	1.05	6 II
KA 2250 - 10 IB	10.0	80.0	300	84 x 210	1.16	6 II

Rated voltage	U_n	1700 V
RMS voltage	U _{rms}	1910 V
Peak voltage (periodical)	U _s	4011 V
Surge peak voltage (not periodical)	U _{smax}	8022 V
DC voltage	U _{DC}	4500 V

Type	C μF	I A	du / dt V / μs	Dimensions ∅ d x h (mm)	Weight kg	Figure
KA 2700 - 0.10 SA	0.10	12.0	900	40 x 82	0.10	3
KA 2700 - 0.22 SA	0.22	15.0	900	40 x 82	0.16	3
KA 2700 - 0.33 IA	0.33	18.0	900	50 x 82	0.16	4
KA 2700 - 0.47 IA	0.47	18.0	750	50 x 82	0.16	4
KA 2700 - 0.68 IA	0.68	18.0	750	60 x 84	0.24	4
KA 2700 - 1.0 IA	1.0	20.0	500	50 x 190	0.45	4
KA 2700 - 1.5 IA	1.5	20.0	500	50 x 190	0.45	4
KA 2700 - 2.2 SB	2.2	60.0	500	64 x 190	0.61	7 II
KA 2700 - 3.3 SB	3.3	60.0	300	64 x 190	0.61	7 II
KA 2700 - 4.7 IB	3.3	80.0	300	84 x 190	1.05	6 II
KA 2700 - 6.8 IB	6.8	80.0	300	84 x 210	1.16	6 II

Figures pages 44 / 45

Other values upon request

The capacitors types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.



Power Electronic Capacitors

STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELFHEALING, WITH FUSE

DIMENSIONAL DRAWINGS

Dimensional drawings of the bushings on last page of this datasheet,

Design IA

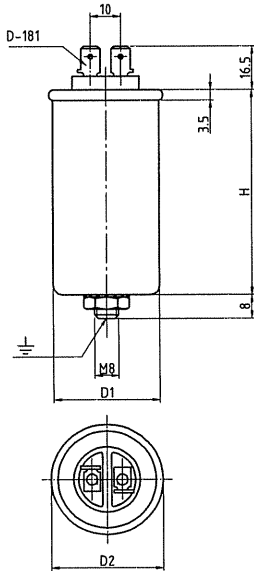


FIGURE 1

Design IAX

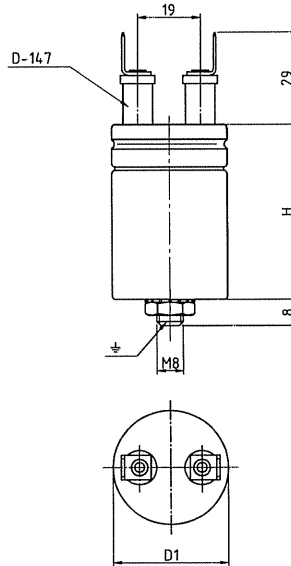


FIGURE 2

Design SA

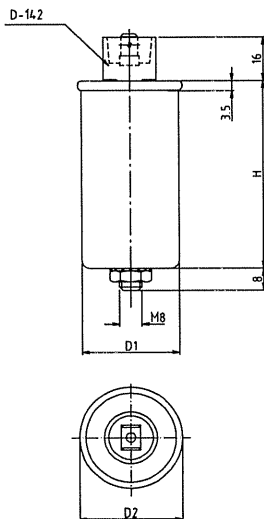


FIGURE 3

Design IA

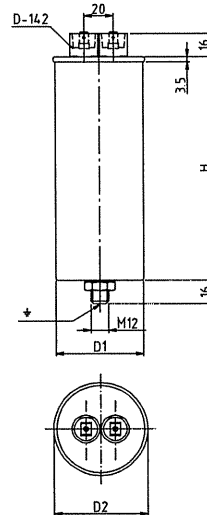


FIGURE 4



STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELFHEALING, WITH FUSE

DIMENSIONAL DRAWINGS

Design IS

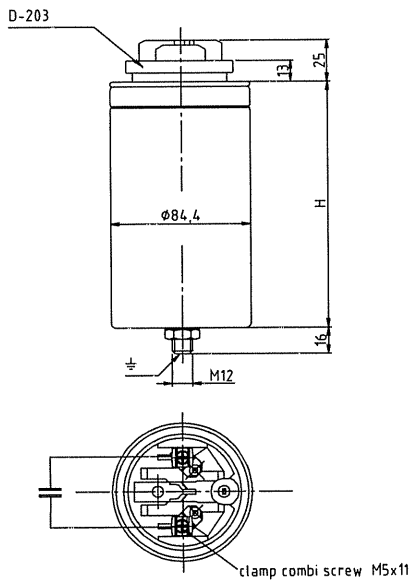


FIGURE 5

Dimensional drawings of the bushings on last page of this datasheet,

Design IB

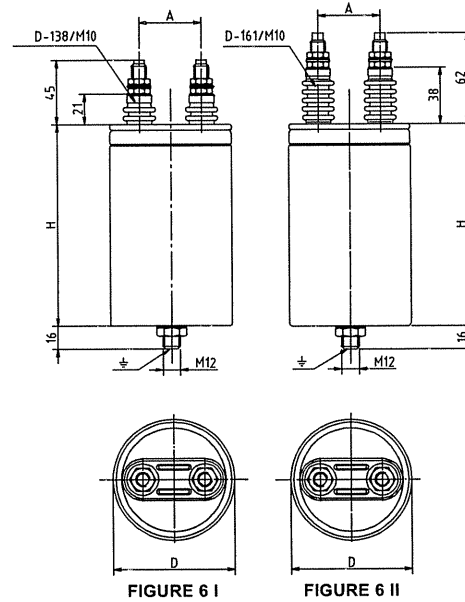


FIGURE 6 I

FIGURE 6 II

Design SB

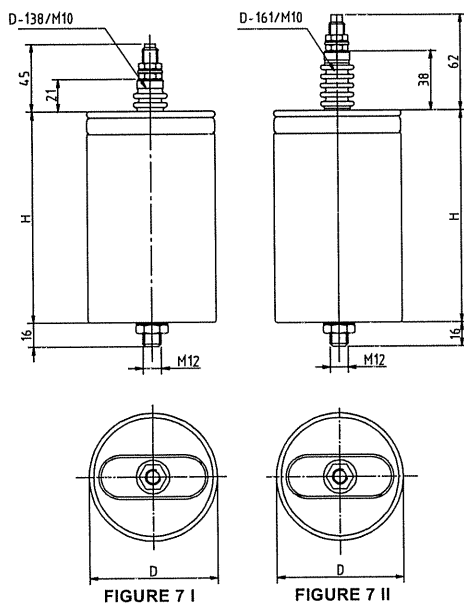


FIGURE 7 I

FIGURE 7 II

Fastening bolt

Diameter of cylindrical case
 < 50mm
 ≥ 50mm

Fastening bolt
 M 8/8mm
 M 12/12mm

Permissible tightening torque
 4Nm
 10Nm

Dimensional Drawings

Vishay ESTA

Power Electronic Capacitors

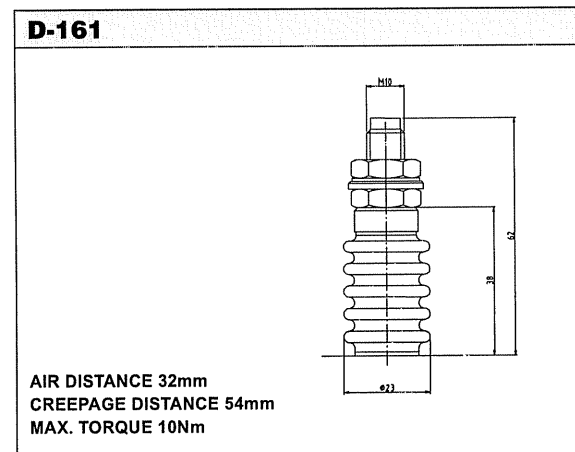
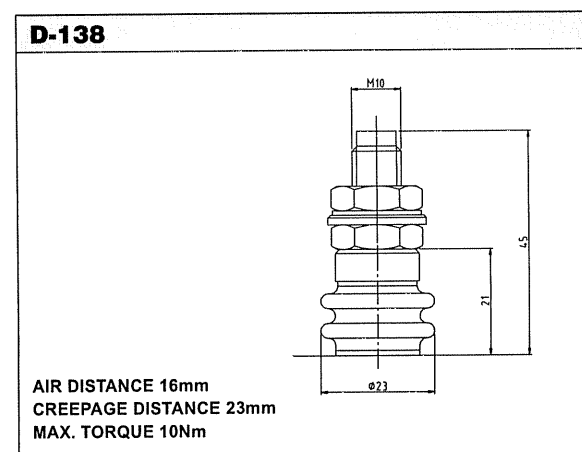
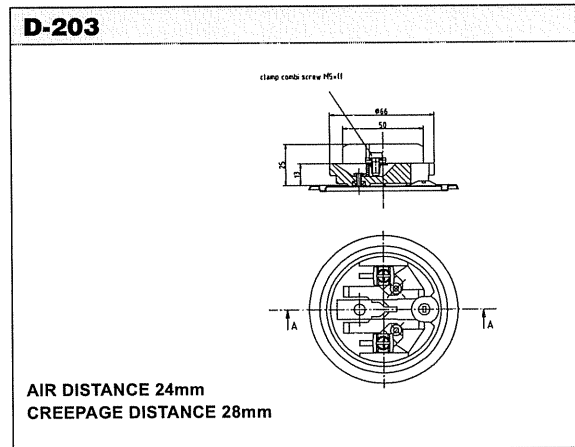
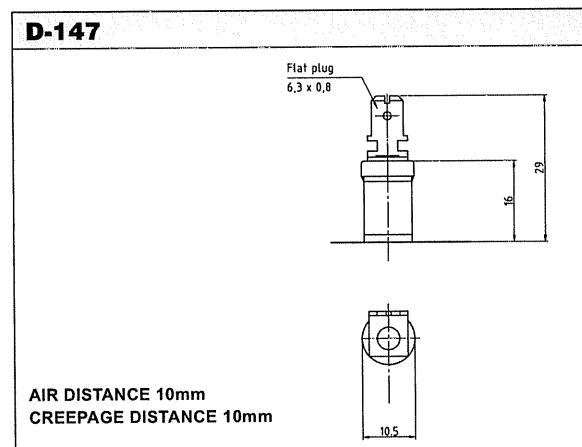
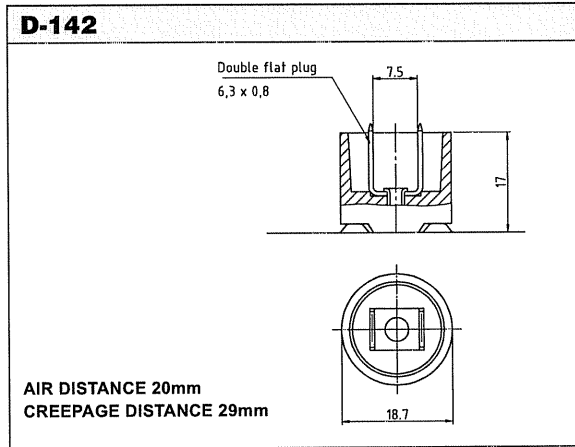
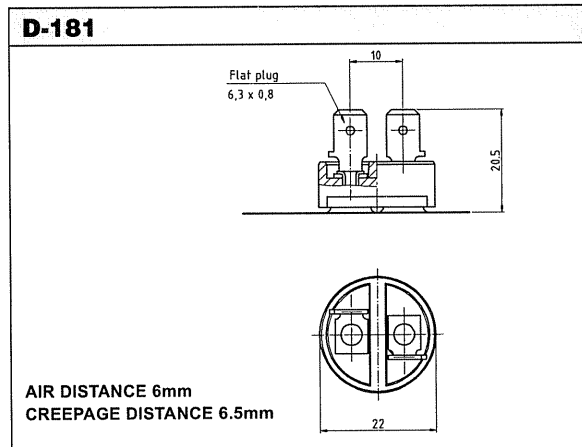


STANDARD CAPACITORS IN CYLINDRICAL CASING, OIL IMPREGNATED, SELFHEALING, WITH FUSE

DIMENSIONAL DRAWINGS

BUSHINGS

The voltage limit of the bushings for the types of capacitor listed in this catalogue is based on the "Rules for Proportioning Clearance and Creepage Distances in Electrical Equipment", VDE 0110.



Capacitors for commutation and damping
Series KMKP / KA 320 V - 3500 V

Rated voltage	U_n	3000 V
RMS voltage	U _{rms}	2120 V
Peak voltage (periodical)	U _s	4452 V
Surge peak voltage (not periodical)	U _{smax}	8904 V
DC voltage	U _{DC}	6500 V

Type	C μF	I A	du / dt V / μs	Dimensions ø d x h (mm)	Weight kg	Figure
<i>upon request</i>						

Rated voltage	U_n	3500 V
RMS voltage	U _{rms}	2480 V
Peak voltage (periodical)	U _s	5208 V
Surge peak voltage (not periodical)	U _{smax}	10416 V
DC voltage	U _{DC}	7200 V

Typenbezeichnung	C μF	I A	du / dt V / μs	Abmessungen ø d x h (mm)	Gewicht kg	Maß- bild
KMKP 3500 - 0,10 SA	0,10	12,0	1900	40 x 97	0,16	3
KMKP 3500 - 0,22 SA	0,22	12,0	1900	40 x 127	0,16	3
KMKP 3500 - 0,33 SA	0,33	12,0	900	50 x 127	0,25	3
KMKP 3500 - 0,47 SA	0,47	15,0	750	50 x 127	0,25	3
KMKP 3500 - 0,68 SA	0,68	15,0	750	60 x 127	0,36	3
KA 3500 - 1,0 SB	1,0	30,0	500	64 x 190	0,61	7 II
KA 3500 - 1,5 SB	1,5	60,0	400	84 x 190	1,05	7 II
KA 3500 - 2,0 SB	2,0	80,0	400	84 x 190	1,05	7 II
KA 3500 - 3,0 SB	3,0	80,0	400	84 x 210	1,16	7 II

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Other values upon request

The capacitor types marked with blue colour are standard types which are, usually, available ex stock. All other types have to be manufactured in accordance with specific orders, however certain minimum order quantities are requested depending on the various capacitor types.