

# Power Electronics Capacitors

## DC CAPACITORS

NEW!!

**POWERBOX SERIES: DC-link and Snubber / Clamping Capacitors**  
Self-Extinguishable Plastic Box; PCB Mounting – Direct Mounting

### FEATURES

- Self-Extinguishable plastic box
- DRY Type
- PCB Mounting: tinned copper wire terminals
- DC Voltage PPM Film

### TYPICAL APPLICATIONS

- DC-Link/Filtering
- IGBT Snubber / Clamping



GENERAL CHARACTERISTICS	
DC Voltage range	450 - 1300V
Maximum ripple current	20Arms
Capacitance range Up to	110 $\mu$ F
Capacitance tolerance	$\pm 5\%$ / $\pm 10\%$
Equivalent Series Resistance ( $R_{ESR}$ )	$< 8m\Omega$ (@ 10kHz)
Equivalent Series inductance ( $L_{ESR}$ )	$< 30nH$
Maximum Voltage rate of rise (dV/dT)	75V/ $\mu$ s
Terminals	2/4 tinned copper wires per pole $\varnothing$ : 0,8 ÷ 1,2mm
Voltage test	U <sub>tc</sub> = 3,5 kVac @50Hz 10s U <sub>tt</sub> = 1,5 x U <sub>nDC</sub> 10s
Operating temperature ( $\theta_{MIN}$ – $\theta_{MAX}$ )	-25 / +85 °C
Storage temperature	-25 / +85 °C
Filling	Dry polyurethane resin
Dielectric	Self healing PPM film
Box Case	Self-extinguishing (UL94 V0) plastic
Failure quota	100/10E9
Life expectancy	100.000 h
Maximum altitude	2000 m a.s.l.
Reference standard	IEC 1071-1/2
	UL 810

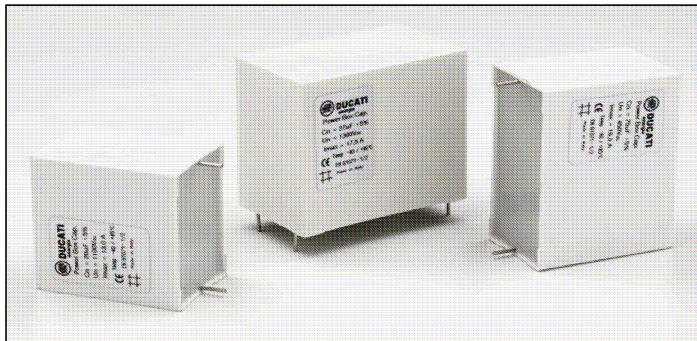
PRELIMINARY

	<b>CAPACITOR for POWER ELECTRONIC</b> <b>Low inductance DC Filters capacitors -</b>		-	RS/CON
	DC82 P SERIES - STANDARD TYPE -	<i>Preliminary</i>		Edition: A - 06/03/2013

## Power Electronic Capacitors

### DC CAPACITORS

#### DC82 P SERIES - STANDARD TYPE -



RATED DC Voltage [Un <sub>DC</sub> ] = 450V						Repetitive Peak Voltage [Up] = 670V				Surge Voltage [Us] = 900V		
Capacitance (1) Cn [μF] ±10%	Box dimension (3)					Pin Ø D [mm]	I <sub>RMS</sub> [A] (4)		Ip[KVA] Repetitive	ESR [mΩ] (2)	Weight [g]	Part number 416.82. xxxx
	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]		2 Pins	4 Pins				
10,0	17	28	42,5	37,5	-	0,8	9,0	-	0,70	< 10,5	30	41682. 3.1xx
15,0	19	32	41,5	37,5	-	0,8	12,0	-	0,90	< 8,5	30	41682. 3.2xx
12,0	22	30	42,5	37,5	10,2	0,8 - 1,0	11,0	11,5	0,72	< 7,5	40	41682. 3.3xx
15,0	22	37	32	27,5	10,2	0,8 - 1,0	12,0	13,0	0,83	< 6,0	30	41682. 3.4xx
20,0	22	33,5	42,5	37,5	10,2	0,8 - 1,0	12,0	13,0	0,70	< 5,5	40	41682. 3.5xx
25,0	28	37	42,5	37,5	10,2	0,8 - 1,0	15,0	16,0	0,75	< 5,0	50	41682. 3.6xx
40,0	30	45	42,5	37,5	20,3	1,2	17,0	18,5	0,60	< 5,0	70	41682. 3.7xx
60,0	30	45	57,5	52,5	20,3	1,2	15,5	16,5	0,78	< 4,5	90	41682. 3.8xx
80,0	35	50	57,5	52,5	20,3	1,2	19,0	20,5	1,04	< 4,5	120	41682. 3.9xx

RATED DC Voltage [Un <sub>DC</sub> ] = 700V						Repetitive Peak Voltage [Up] = 1050V				Surge Voltage [Us] = 1400V		
Capacitance (1) Cn [μF] ±10%	Box dimension (3)					Pin Ø D [mm]	I <sub>RMS</sub> [A] (4)		Ip[KVA] Repetitive	ESR [mΩ] (2)	Weight [g]	Part number 416.82. xxxx
	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]		2 Pins	4 Pins				
8,0	17	28	42,5	37,5	-	0,8 - 1,0	9,0	-	0,56	< 13,0	30	41682. 5.1xx
12,0	19	32	41,5	37,5	-	0,8 - 1,0	12,0	-	0,72	< 12,5	30	41682. 5.2xx
10,0	22	30	42,5	37,5	10,2	0,8 - 1,0	11,0	11,5	0,60	< 10,5	40	41682. 5.3xx
12,0	22	37	32	27,5	10,2	0,8 - 1,0	12,0	13,0	0,66	< 8,5	30	41682. 5.4xx
15,0	22	33,5	42,5	37,5	10,2	0,8 - 1,0	12,0	13,0	0,53	< 7,5	40	41682. 5.5xx
20,0	28	37	42,5	37,5	10,2	0,8 - 1,0	15,0	16,0	0,60	< 6,0	50	41682. 5.6xx
35,0	30	45	42,5	37,5	20,3	1,2	17,0	18,5	0,53	< 5,5	70	41682. 5.7xx
50,0	30	45	57,5	52,5	20,3	1,2	15,0	15,5	0,75	< 5,0	90	41682. 5.8xx
65,0	35	50	57,5	52,5	20,3	1,2	19,0	20,5	0,85	< 4,5	120	41682. 5.9xx

RATED DC Voltage [Un <sub>DC</sub> ] = 800V						Repetitive Peak Voltage [Up] = 1200V				Surge Voltage [Us] = 1600V		
Capacitance (1) Cn [μF] ±10%	Box dimension (3)					Pin Ø D [mm]	I <sub>RMS</sub> [A] (4)		Ip[KVA] Repetitive	ESR [mΩ] (2)	Weight [g]	Part number 416.82. xxxx
	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]		2 Pins	4 Pins				
6,5	17	28	42,5	37,5	-	0,8 - 1,0	8,0	-	0,49	< 32,0	30	41682. 6.1xx
9,0	19	32	41,5	37,5	-	0,8 - 1,0	10,0	-	0,59	< 20,0	30	41682. 6.2xx
8,0	22	30	42,5	37,5	10,2	0,8 - 1,0	9,5	10,5	0,52	< 13,0	40	41682. 6.3xx
9,0	22	37	32	27,5	10,2	0,8 - 1,0	10,0	11,0	0,54	< 12,5	30	41682. 6.4xx
12,0	22	33,5	42,5	37,5	10,2	0,8 - 1,0	10,0	11,0	0,48	< 10,5	40	41682. 6.5xx
16,0	28	37	42,5	37,5	10,2	0,8 - 1,0	11,0	12,0	0,56	< 8,5	50	41682. 6.6xx
25,0	30	45	42,5	37,5	20,3	1,2	15,5	16,5	0,50	< 7,5	70	41682. 6.7xx
40,0	30	45	57,5	52,5	20,3	1,2	14,5	16,0	0,60	< 6,0	90	41682. 6.8xx
50,0	35	50	57,5	52,5	20,3	1,2	17,0	18,0	0,65	< 5,0	120	41682. 6.9xx

RATED DC Voltage [Un <sub>DC</sub> ] = 900V												
Repetitive Peak Voltage [Up] = 1350V												
Surge Voltage [Us] = 1800V												
Capacitance (1)	Box dimension (3)					Pin	I <sub>RMS</sub> [A] (4)		Ip[Ka]	ESR	Weight	Part number
Cn [μF]	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]	Ø D [mm]	2 Pins	4 Pins	Repetitive	[mΩ] (2)	[g]	416.82. xxxx
6,0	17	28	42,5	37,5	-	0,8 - 1,0	9,0	-	0,48	< 35,0	30	41682. 7.1xx
7,5	19	32	41,5	37,5	-	0,8 - 1,0	9,0	-	0,53	< 20,0	30	41682. 7.2xx
6,5	22	30	42,5	37,5	10,2	0,8 - 1,0	8,0	8,5	0,46	< 13,0	40	41682. 7.3xx
7,5	22	37	32	27,5	10,2	0,8 - 1,0	9,5	10,5	0,49	< 14,0	30	41682. 7.4xx
10,0	22	33,5	42,5	37,5	10,2	0,8 - 1,0	11,0	11,5	0,45	< 12,5	40	41682. 7.5xx
14,0	28	37	42,5	37,5	10,2	0,8 - 1,0	12,0	13,0	0,56	< 9,5	50	41682. 7.6xx
20,0	30	45	42,5	37,5	20,3	1,2	14,0	16,0	0,40	< 8,0	70	41682. 7.7xx
30,0	30	45	57,5	52,5	20,3	1,2	13,0	13,5	0,45	< 7,0	90	41682. 7.8xx
40,0	35	50	57,5	52,5	20,3	1,2	16,0	17,0	0,60	< 6,0	120	41682. 7.9xx

RATED DC Voltage [Un <sub>DC</sub> ] = 1100V												
Repetitive Peak Voltage [Up] = 1650V												
Surge Voltage [Us] = 2200V												
Capacitance (1)	Box dimension (3)					Pin	I <sub>RMS</sub> [A] (4)		Ip[Ka]	ESR	Weight	Part number
Cn [μF]	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]	Ø D [mm]	2 Pins	4 Pins	Repetitive	[mΩ] (2)	[g]	416.82. xxxx
3,5	17	28	42,5	37,5	-	0,8 - 1,0	6,5	-	0,34	< 42,0	30	41682. 8.1xx
5,0	19	32	41,5	37,5	-	0,8 - 1,0	8,0	-	0,48	< 23,0	30	41682. 8.2xx
4,0	22	30	42,5	37,5	10,2	0,8 - 1,0	6,5	7,0	0,38	< 15,0	40	41682. 8.3xx
5,0	22	37	32	27,5	10,2	0,8 - 1,0	8,0	8,5	0,40	< 16,5	30	41682. 8.4xx
6,5	22	33,5	42,5	37,5	10,2	0,8 - 1,0	9,5	10,0	0,36	< 14,0	40	41682. 8.5xx
10,0	28	37	42,5	37,5	10,2	0,8 - 1,0	11,0	12,0	0,45	< 10,0	50	41682. 8.6xx
14,0	30	45	42,5	37,5	20,3	1,2	13,0	14,0	0,33	< 8,5	70	41682. 8.7xx
20,0	30	45	57,5	52,5	20,3	1,2	14,0	14,5	0,46	< 8,0	90	41682. 8.8xx
28,0	35	50	57,5	52,5	20,3	1,2	15,0	16,0	0,56	< 6,5	120	41682. 8.9xx

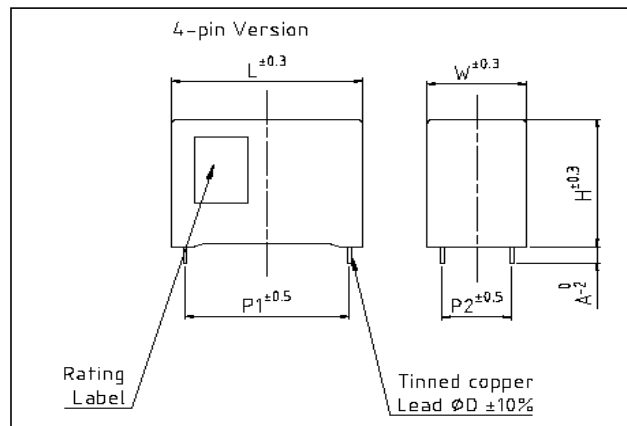
RATED DC Voltage [Un <sub>DC</sub> ] = 1200V												
Repetitive Peak Voltage [Up] = 1800V												
Surge Voltage [Us] = 2400V												
Capacitance (1)	Box dimension (3)					Pin	I <sub>RMS</sub> [A] (4)		Ip[Ka]	ESR	Weight	Part number
Cn [μF]	W [mm]	H [mm]	L [mm]	P1 [mm]	P2 [mm]	Ø D [mm]	2 Pins	4 Pins	Repetitive	[mΩ] (2)	[g]	416.82. xxxx
3,0	17	28	42,5	37,5	-	0,8 - 1,0	6,5	-	0,30	< 45,0	30	41682. 9.1xx
4,5	19	32	41,5	37,5	-	0,8 - 1,0	8,0	-	0,45	< 25,0	30	41682. 9.2xx
4,0	22	30	42,5	37,5	10,2	0,8 - 1,0	6,5	7,0	0,40	< 15,0	40	41682. 9.3xx
4,5	22	37	32	27,5	10,2	0,8 - 1,0	8,0	8,5	0,45	< 18,0	30	41682. 9.4xx
6,0	22	33,5	42,5	37,5	10,2	0,8 - 1,0	9,5	10,0	0,36	< 15,0	40	41682. 9.5xx
7,5	28	37	42,5	37,5	10,2	0,8 - 1,0	11,0	12,0	0,38	< 10,5	50	41682. 9.6xx
12,0	30	45	42,5	37,5	20,3	1,2	13,0	14,0	0,30	< 9,0	70	41682. 9.7xx
18,0	30	45	57,5	52,5	20,3	1,2	14,0	14,5	0,45	< 8,5	90	41682. 9.8xx
23,0	35	50	57,5	52,5	20,3	1,2	15,0	16,0	0,58	< 7,0	120	41682. 9.9xx

(\*) Specific reference data at 85°C working temperature

	Temp.	[V]	[V]	[V]	[V]	[V]	[V]
U <sub>op</sub>	70 °C	500	800	900	1100	1350	1500
Un <sub>DC</sub>	85 °C	450	700	800	900	1100	1200
U <sub>op</sub>	105 °C	300	500	550	650	800	850

- (1) Intermediate capacitance values available on request.
- (2) Equivalent series resistance @5KHz - referred to 4 pins configuration, when available.
- (3) Standard box dimension, other type on request.
- (4) Maximum RMS current at 5kHz

**Mechanical configuration (4 pins):**



Release	Date	Description	Technician
A	06/03/2013	First issue (preliminary)	A. G.