

Power Electronics Capacitors

GENERAL PURPOSE CAPACITORS



GP 84 Series

RMS Voltage range	250÷1000V
Capacitance range	10÷600 μ F
Capacitance tolerance	$\pm 5\%$ / $\pm 10\%$
Max. RMS current	80 A
Series resistance (R_s)	$< 8 \text{ m}\Omega$
Thermal resistance natural cooling (R_{THC})	$< 3,0 \text{ }^\circ\text{C/W}$
Max. voltage raise of rise (dV/dT)	$\leq 100 \text{ V}/\mu\text{s}$
Terminals	M6 or M10 screw-type bolts or double tag 6,3 x 0,8 mm
Working temperature	$-40 / + 70 \text{ }^\circ\text{C}$
Storage temperature	$-40 / + 85 \text{ }^\circ\text{C}$
Test voltage	$U_{tc} = 3 \text{ kVac} / 6 \text{ kVac} @ 50 \text{ Hz } 10\text{s}$ $U_{tt} = 1,5 \times U_{NDC} 10\text{s}$
Filling	Dry polyurethane resin
Dielectric	Metallized PPMh film
Cylindrical case	Aluminum
Life expectancy	100.000 h (*)
Failure quota	50/10E9
Reference standard	IEC 1071-1/2; UL 810
UL-CSA approved (c  us) -10 kA AFC	File n. E102953 (**)
Integrated overpressure protection	
M6 Screw Terminals	3 Nm
M10 Screw Terminals	6 Nm(***)
M12 fixing bolt	Max 10 Nm

(*) Life Derating at operating voltage (according to the chart on page 10)

Life expectancy	4.16.84.2xxx Series	4.16.84.3xxx Series	4.16.84.4xxx Series	4.16.84.5xxx Series	4.16.84.6xxx Series	4.16.84.9xxx Series
100.000 h (rated)	250 V	330 V	450 V	550 V	690 V	930 V
50.000 h	275 V	360 V	500 V	575 V	760 V	1025 V
25.000 h	300 V	400 V	540 V	630 V	830 V	1120 V
12.500 h	330 V	450 V	600 V	690 V	930 V	1250 V

(**) UL Approved for A, C and F solution (excepted series 690 V - 930 V solution A).

(***) To avoid breaking, complete the tightening of the nuts using two wrenches.

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Cn [μF]	I _{MAX} * [A]	I _{PK} C _W [A]	I _{PK} I _W [kA]	I _S [kA]	R _{THC} [°C/W]	L _{ESR} [nH]	Tanδ _{MAX} @50Hz [10 ⁻⁴]	Ø [mm]	H [mm]	Weight [g]	Mechanical solution	Part. n. 416.84.	Pcs. / box	Box type
Urms = 250 V			Un _{AC} = 350 V			Un _{DC} = 490 V			Us = 950 V					
60	22	33	1,7	9	2,7	130	5,0	55	115	300	A / C	2.1x.y	28	1
80	22	33	1,7	9	2,7	130	5,0	55	115	340	A / C	2.1x.y	28	1
100	25	38	1,9	11	2,2	160	5,0	55	150	370	A / C	2.2x.y	21	1
120	25	38	1,9	11	2,2	160	5,0	55	150	390	A / C	2.2x.y	21	1
150	32	48	2,4	13	2,0	160	5,5	60	150	450	A / C	2.3x.y	18	1
175	36	54	2,7	16	1,8	170	6,0	65	150	520	A / C	2.4x.y	16	1
200	38	57	2,9	12	1,7	180	6,5	65	165	580	A / C	2.5x.y	16	1
230	40	60	3,0	20	1,3	200	7,0	75	180	820	F	2.6x.7	6	2
250	40	60	3,0	20	1,3	200	7,0	75	180	830	F	2.6x.7	6	2
300	40	60	3,0	20	1,3	200	7,0	75	180	860	F	2.6x.7	6	2
350	45	68	3,4	20	1,1	210	7,5	85	180	980	F	2.7x.7	6	2
400	45	68	3,4	20	1,1	210	7,5	85	180	1050	F	2.7x.7	6	2
500	78	117	5,9	20	0,9	230	8,5	90	210	1400	F	2.9x.7	6	3
600	80	120	6,0	18	0,8	300	9,0	85	280	1700	F	2.9x.7	6	4
Urms = 330 V			Un _{AC} = 470 V			Un _{DC} = 600 V			Us = 1150 V					
50	22	33	1,7	7	2,7	160	5,0	55	115	320	A / C	3.1x.y	28	1
80	26	39	2,0	8	2,2	160	6,0	55	150	390	A / C	3.2x.y	21	1
100	26	39	2,0	8	2,2	160	6,0	55	150	400	A / C	3.2x.y	21	1
120	30	45	2,3	10	2,0	160	6,0	60	150	460	A / C	3.3x.y	18	1
150	34	51	2,6	13	1,8	170	6,5	65	50	540	A / C	3.4x.y	16	1
175	38	57	2,9	10	1,7	180	7,0	65	165	600	A / C	3.5x.y	16	1
200	40	60	3,0	14	1,3	200	7,5	75	180	860	F	3.6x.7	6	2
250	40	60	3,0	14	1,3	200	7,5	75	180	860	F	3.6x.7	6	2
300	45	68	3,4	18	1,1	210	7,5	85	180	1100	F	3.7x.7	6	2
350	70	105	5,3	16	1,0	230	8,0	85	210	1350	F	3.8x.7	6	3
400	75	113	5,6	18	0,9	230	8,5	90	210	1450	F	3.9x.7	6	3
450	80	120	6,0	13	0,8	300	9,0	85	280	1750	F	3.9x.7	6	4
Urms = 450 V			Un _{AC} = 630 V			Un _{DC} = 825 V			Us = 1600 V					
20	20	30	1,5	4	2,7	130	5,0	55	115	250	A / C	4.0x.y	28	1
30	20	30	1,5	4	2,7	130	5,0	55	115	300	A / C	4.0x.y	28	1
40	24	36	1,8	4,5	2,2	160	6,0	55	150	370	A / C	4.1x.y	21	1
50	24	36	1,8	4,5	2,2	160	6,0	55	150	400	A / C	4.1x.y	21	1
70	28	42	2,1	6,8	1,8	170	6,5	65	150	530	A / C	4.3x.y	16	1
80	28	42	2,1	6,8	1,8	170	6,5	65	150	550	A / C	4.3x.y	16	1
90	32	48	2,4	5,2	1,7	180	7,0	65	165	590	A / C	4.4x.y	16	1
100	38	57	2,9	7,4	1,3	200	7,5	75	180	860	F	4.5x.		

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Cn [μF]	I _{MAX} * [A]	I _{PK} C _W [A]	I _{PK} I _W [kA]	I _S [kA]	R _{THC} [°C/W]	LESR [nH]	Tanδ _{MAX} @50Hz [10 ⁻⁴]	Ø [mm]	H [mm]	Weight [g]	Technical solution	Part. n. 416.84.	Pcs. / box	Box type
Urms = 550 V					Un _{AC} = 790 V				Un _{DC} = 940 V		Us = 1800 V			
20	18	27	1,4	2,9	2,7	130	5,0	55	115	300	A / C	5.0x.y	28	1
30	20	30	1,5	3,3	2,2	160	5,5	55	150	350	A / C	5.1x.y	21	1
40	20	30	1,5	3,3	2,2	160	5,5	55	150	390	A / C	5.1x.y	21	1
50	22	33	1,7	4,1	2,0	160	6,0	60	150	460	A / C	5.2x.y	18	1
70	26	39	2,0	3,9	1,7	180	7,0	65	165	590	A / C	5.4x.y	16	1
80	34	51	2,6	5,3	1,3	200	7,5	75	180	820	F	5.5x.7	6	2
100	38	57	2,9	7,2	1,1	210	8,0	85	180	950	F	5.6x.7	6	2
125	38	57	2,9	7,2	1,1	210	8,0	85	180	1050	F	5.6x.7	6	2
150	70	105	5,3	5,7	0,8	300	8,5	85	280	1550	F	5.8x.7	6	4
200	70	105	5,3	5,7	0,8	300	8,5	85	280	1700	F	5.8x.7	6	4
250	76	114	5,7	8,3	0,6	320	9,0	100	280	2100	F	5.9x.7	6	5
300	76	114	5,7	8,3	0,6	320	9,0	100	280	2400	F	5.9x.7	6	5
Urms = 690 V					Un _{AC} = 990 V				Un _{DC} = 1350 V		Us = 2600 V			
10	20	30	1,0	1,8	2,2	160	5,0	55	150	310	A / C	6.0x.y	21	1
15	20	30	1,0	1,8	2,2	160	5,0	55	150	350	A / C	6.0x.y	21	1
20	22	33	1,1	2,8	1,8	170	5,0	65	150	500	A / C	6.1x.y	16	1
30	26	39	1,3	2,9	1,7	180	5,0	65	165	560	A / C	6.2x.y	16	1
40	30	45	1,5	4,0	1,3	200	5,5	75	180	780	F	6.3x.7	6	2
50	30	45	1,5	4,0	1,3	200	5,5	75	180	850	F	6.3x.7	6	2
70	34	51	1,7	4,9	1,0	210	6,0	85	210	1150	F	6.5x.7	6	3
85	36	54	1,8	5,5	0,9	220	6,5	90	210	1400	F	6.6x.7	6	3
100	38	57	1,9	7,1	0,8	220	7,0	100	210	1680	F	6.7x.7	6	5
125	40	60	2,0	4,2	0,7	300	7,5	90	280	1860	F	6.8x.7	6	4
150	45	68	2,3	5,3	0,6	300	8,0	100	280	2150	F	6.9x.7	6	5
175	45	68	2,3	5,3	0,6	300	8,0	100	280	2360	F	6.9x.7	6	5
Urms = 930 V					Un _{AC} = 1300 V				Un _{DC} = 1700 V		Us = 3250 V			
10	18	27	0,9	1,2	2,2	160	4,5	55	150	360	A / C	9.0x.y	21	1
15	20	30	1,0	1,8	1,8	170	4,7	65	150	480	A / C	9.1x.y	16	1
20	22	33	1,1	1,8	1,7	180	5,0	65	165	550	A / C	9.2x.y	16	1
30	24	36	1,2	2,6	1,3	200	5,3	75	180	840	F	9.3x.7	6	2
35	28	42	1,4	2,3	1,1	210	5,5	75	210	980	F	9.4x.7	6	3
40	30	45	1,5	3,1	1,0	210	5,5	85	210	1150	F	9.5x.7	6	3
45	30	45	1,5	3,1	1,0	210	5,5	85	210	1220	F	9.5x.7	6	3
50	30	45	1,5	3,1	1,0	210	5,5	85	210	1280	F	9.5x.7	6	

Cn Stan ar alues other alues on re uest.

Co e x internal re eference. Co e y mechnical solution.

* The maximum rms current is re erre to A or F solutions. Imax ≤ 16 A or C solution.

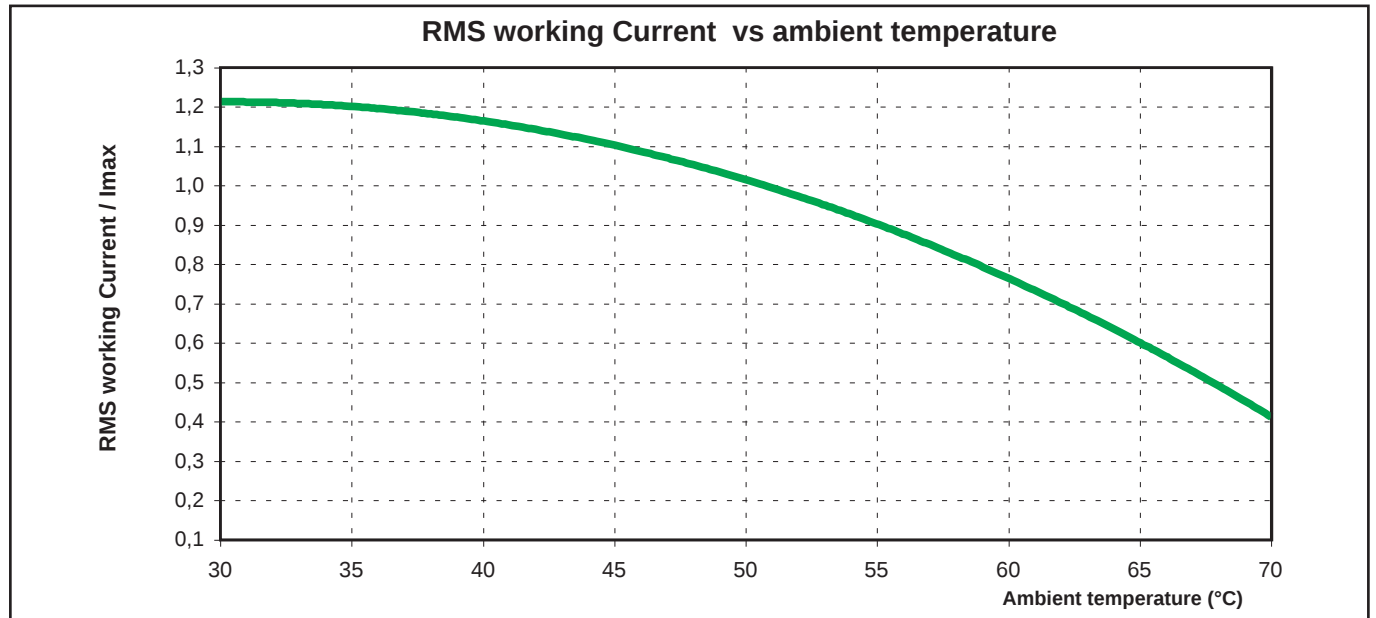
Box T PE	Stan ar box imensions
1	250 x 386 x 190
2	190 x 285 x 265
3	190 x 285 x 325
4	190 x 285 x 375
5	335 x 220 x 375

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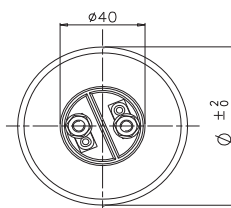
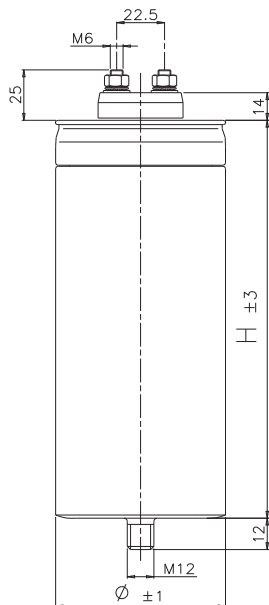
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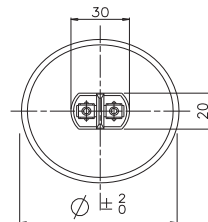
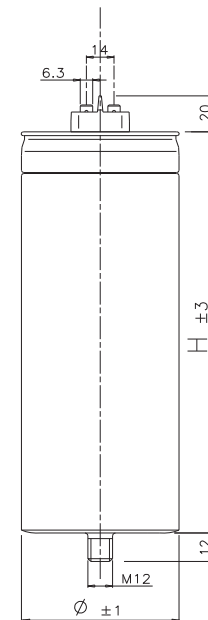
General technical information
maximum current I_{max} versus temperature.



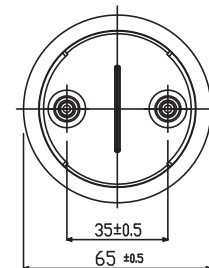
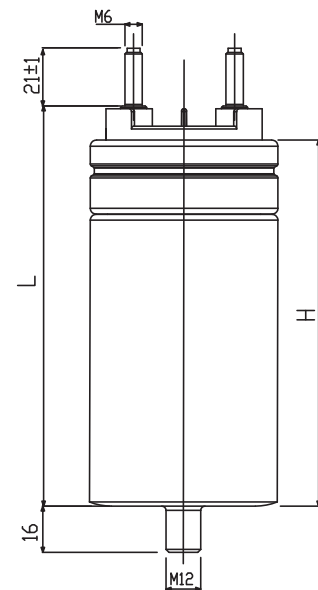
Mechanical Configurations



A solution
M6 Screw-type bolts
CODE: 41684.xxx.0
Code "y"=0



C solution
Double tag 6,3x0,8 mm
CODE: 41684.xxx.2
Code "y"=2



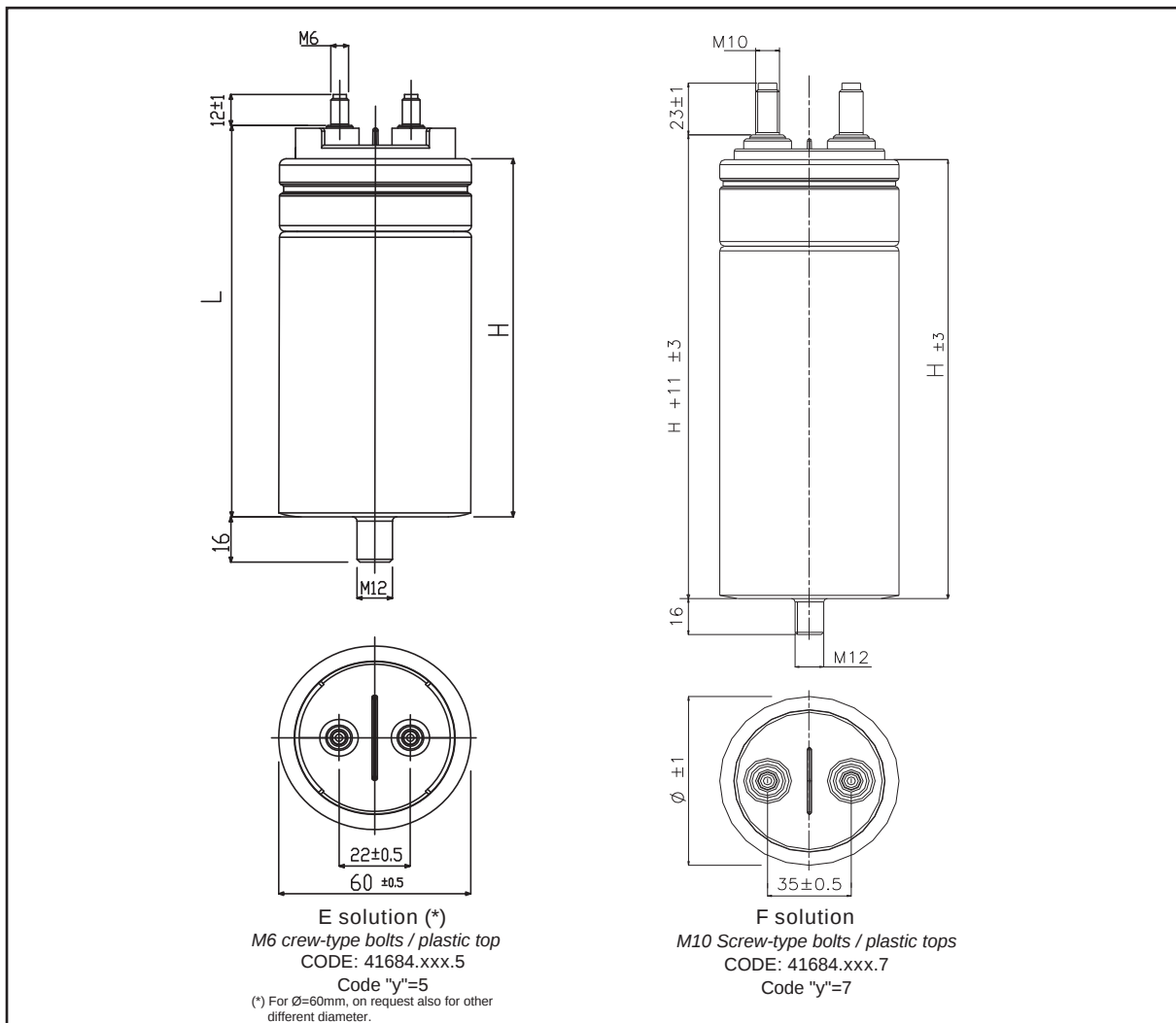
D solution (*)
M6 crew-type bolts / plastic top
CODE: 41684.xxx.6
Code "y"=6

(*) For Ø=65mm, on request also for other different diameter.

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Overpressure safety device

