



GP 84 series

General purpose capacitors

Cylindrical Aluminum Case

GP84 single-phase, cylindrical AC & DC Capacitors are the ideal solution for most AC Filter requirements as well as special PFC projects.

The sturdy construction with Aluminum case and plastic lid, the wide range of available connections and the safety features based on the integrated UL-approved overpressure disconnector and DRY resin impregnation ensure GP84 can be easily and reliably integrated into any application and environmental condition.

Main characteristics:

- Self-Healing Metallized Polypropylene Film
- UL-Approved Overpressure Safety Device
- Aluminum Case
- DRY Resin filling
- Wide range of connections with high current capability

Main applications:

- AC Filtering
- High-Performance PFC (high harmonics, voltage and RMS/surge current)
- UPS and Wind-Power Applications



General Characteristics

RMS Voltage range	250 ÷ 1000 V
Capacitance range	10 ÷ 600 µF
Capacitance tolerance	±5% / ±10%
Max. RMS current	80 A
Series resistance (Rs)	< 8 mΩ
Thermal resistance natural cooling (R_{THC})	< 3.0 °C/W
Max. voltage raise of rise (dV/dT)	≤ 100 V/µs
Terminals	M6 or M10 screw-type bolts or double tag 6.3 x 0.8 mm
Operating temperature	-40 / +85 °C
Storage temperature	-40 / +85 °C
Test voltage	$U_{tc} = 3 \text{ kVac} / 6 \text{ kVac @50 Hz 10 s}$ $U_{tt} = 1.5 \times U_{nDC} 10 \text{ s}$
Filling	Dry polyurethane resin
Dielectric	Metallized PPMh film
Cylindrical case	Aluminum
Life expectancy	100.000 h (*)
Failure quota	50 / 10E9
Reference standards	IEC 1071-1/2 - UL 810
UL-CSA approved (c us) -10 kA AFC	File n. E102953 (**)
M6 Screw Terminals	3 Nm
M10 Screw Terminals	6 Nm
M12 fixing bolt	Max 10 Nm

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

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

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



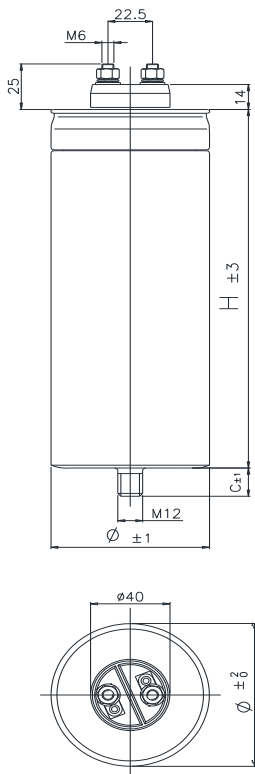
Cn [μF]	I _{MAX} [*] [A]	I _{PK} C _w [A]	I _{PK} I _w [kA]	I _s [kA]	R _{THC} natural cooling [°C/W]	LESR [nH]	Tan MAX @50Hz [10-4]	Ø [mm]	H [mm]	Weight [g]	Mechanical solution	Part n. 416.84.	Pcs. / box	Box type
Urms= 250 V Un_{AC} = 350 V Un_{DC}= 490 V Us= 950 V														
60	22	33	1.7	9	2.7	130	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	150	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= 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.7	6	2
150	42	63	3.2	9.9	1.1	210	8.0	85	180	1100	F	4.6x.7	6	2
200	70	105	5.3	9.7	0.9	230	8.5	90	210	1450	F	4.8x.7	6	3
250	75	113	5.6	7.9	0.8	300	9.0	85	280	1710	F	4.9x.7	6	4
300	78	117	5.9	9.1	0.7	300	9.0	90	280	1920	F	4.9x.7	6	4



Cn [μF]	I _{MAX} * [A]	I _{PK} C _w [A]	I _{PK} I _w [kA]	I _s [kA]	R _{THC} natural cooling [°C/W]	LESR [nH]	Tan MAX @50Hz [10-4]	Ø [mm]	H [mm]	Weight [g]	Mechanical 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 = 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	2.6	1.7	180	5.0	65	165	550	A / C	9.2x.y	16	1
30	24	36	1.2	2.3	1.3	200	5.3	75	180	840	F	9.3x.7	6	2
35	28	42	1.4	3.1	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	3
55	34	51	1.7	3.5	0.9	220	5.7	90	210	1380	F	9.6x.7	6	3
70	38	57	1.9	4.5	0.8	220	5.7	100	210	1720	F	9.7x.7	6	5
85	42	63	2.1	2.7	0.7	300	6.0	90	280	1840	F	9.8x.7	6	4
100	45	68	2.3	3.4	0.6	300	6.5	100	280	2250	F	9.9x.7	6	5

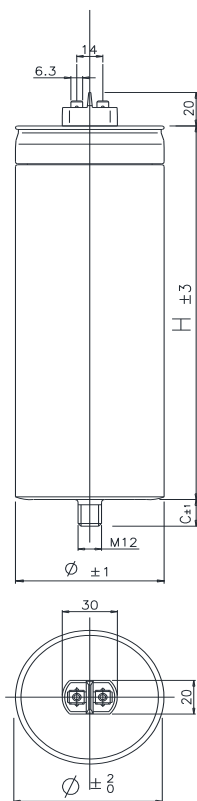
(Cn) Standard values, other values on request. Code "x": internal reference. Code "y": mechanical solution.

(*) The maximum rms current is referred to A or F solutions. I_{max} ≤ 16 A for C solution.



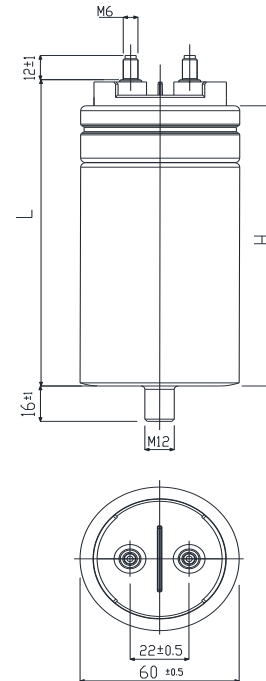
A SOLUTION

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

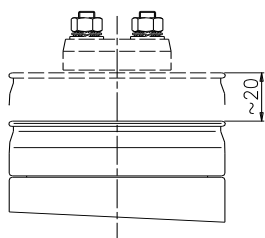


D SOLUTION (*) - Ø60

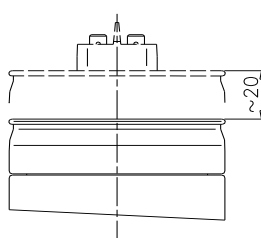
M6 screw -type bolts.
UL94 V0 plastic cover
CODE: 41684.xxx.6
code "y" = 5

Overpressure safety device

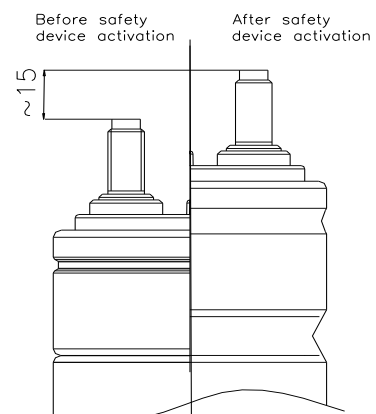
In order to ensure proper device operation, when the capacitor is installed, a clearance of at least the values given on drawing below must be left above terminals.



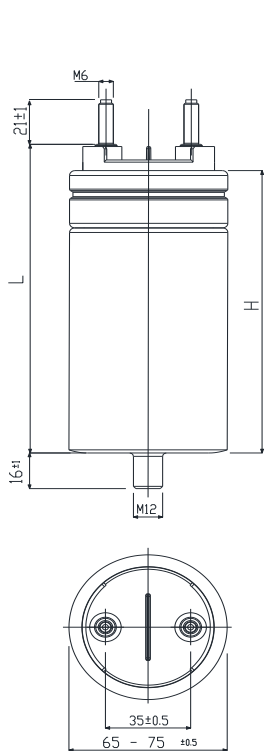
Dimension with
overpressure
device activated



Dimension with
overpressure
device activated

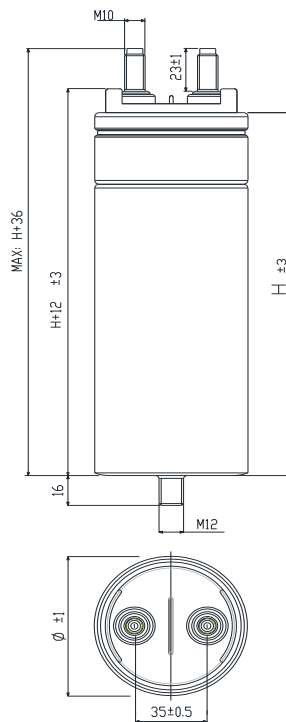


Dimension with
overpressure
device activated



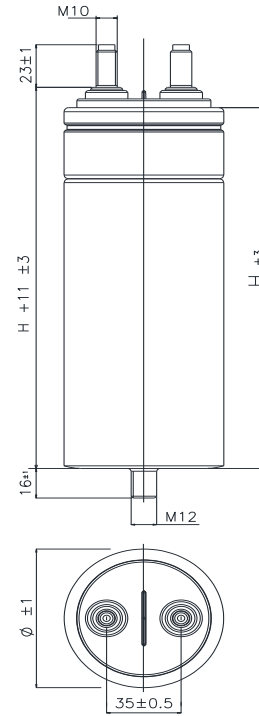
E SOLUTION (*) - Ø65/75 mm

M6 screw -type bolts.
UL94 V0 plastic cover
CODE: 41684.xxx.5
code "y"= 6



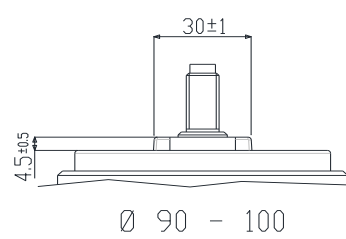
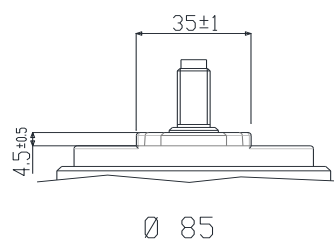
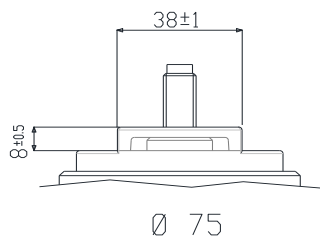
F SOLUTION - Ø75/85 mm

M10 Screw-type bolts
UL94 V0 plastic cover
CODE: 41684.xxx.7
code "y"= 7



F SOLUTION - Ø90/100 mm

M10 Screw-type bolts
UL94 V0 plastic cover
CODE: 41684.xxx.7
code "y"= 7



F SOLUTION

different mechanical spacing
M10 screw -type bolts, Ø75-Ø100 mm.
UL94 V0 plastic cover

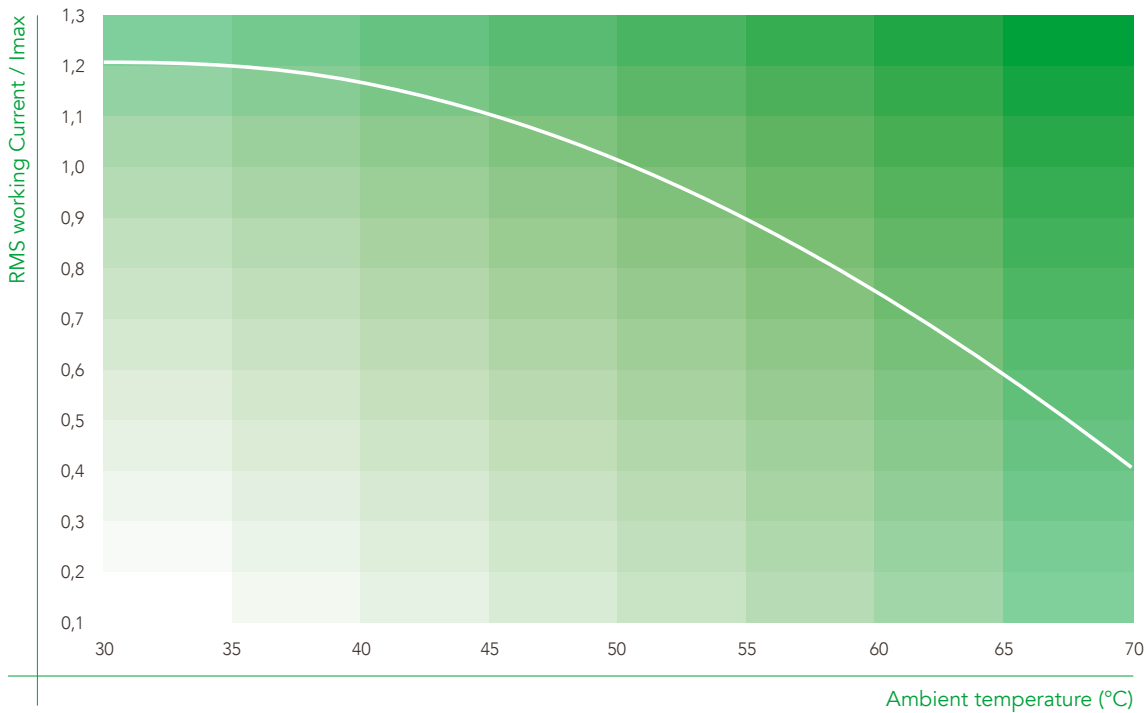
Box TYPE	Standard box dimensions
1	mm 250 x 386 x 190
2	mm 190 x 285 x 265
3	mm 190 x 285 x 325
4	mm 190 x 285 x 375
5	mm 335 x 220 x 375

(*) On request, available also on different diameters.

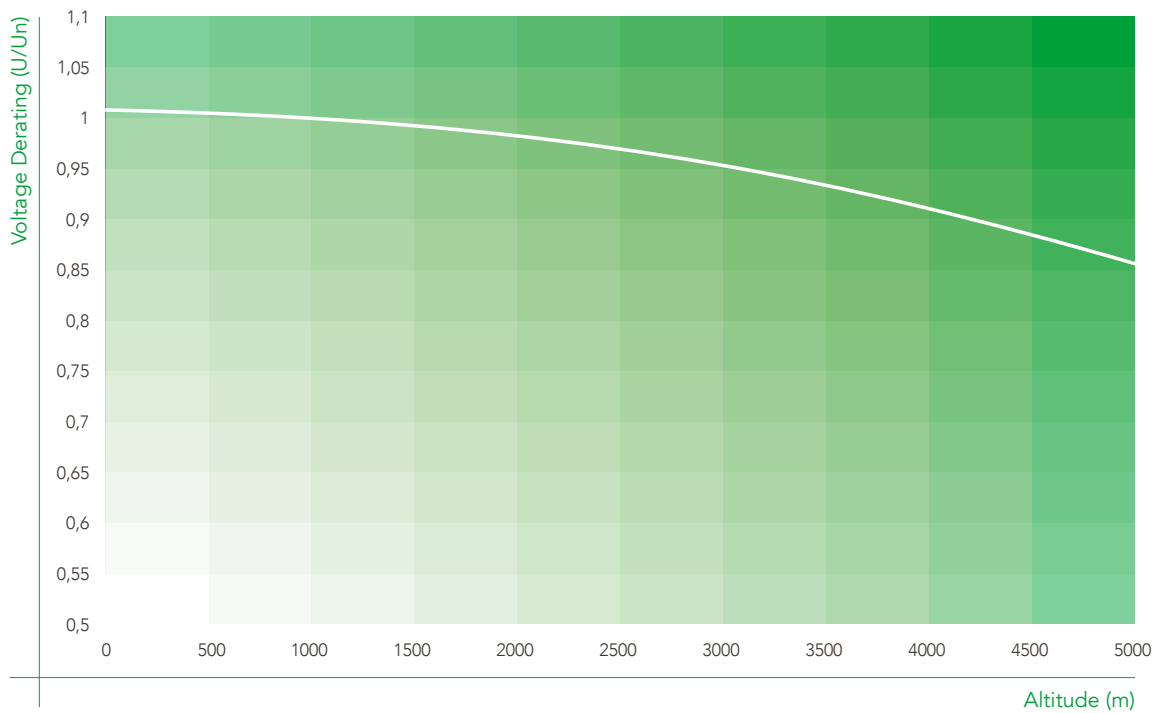




RMS working current vs Ambient temperature

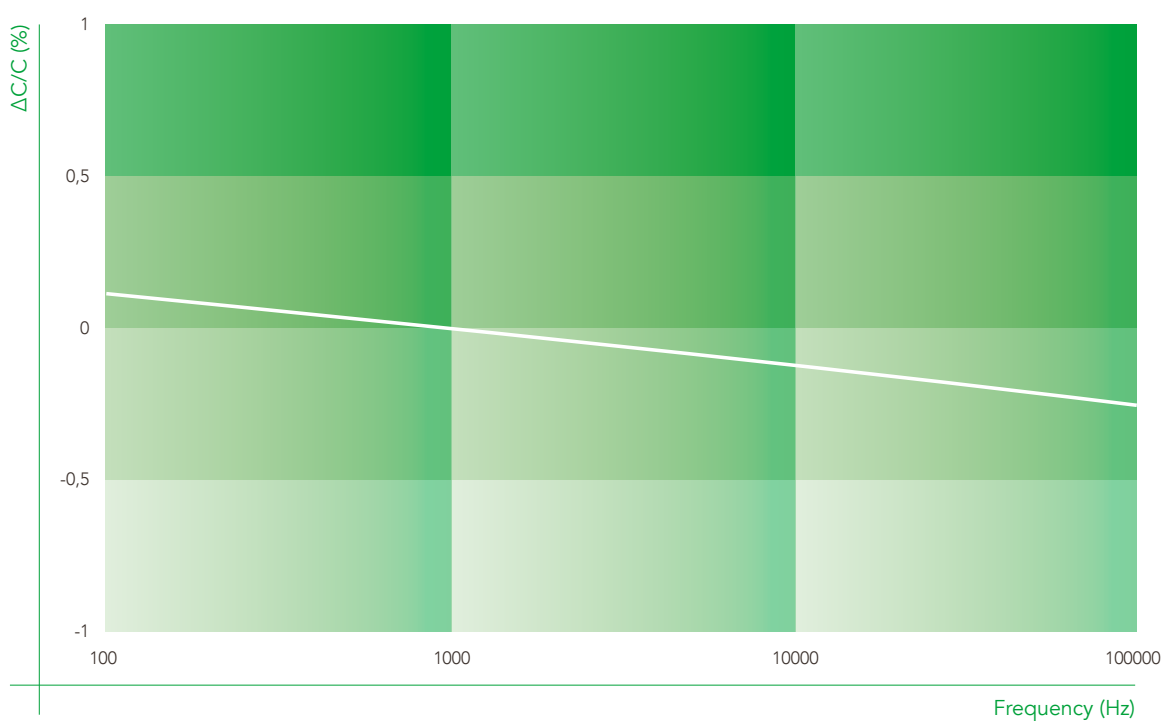


Voltage Derating vs Altitude





Capacitance change vs Frequency (25°C)



Dissipation factor change vs Frequency (25°C)

