



### 5 Long Life Capacitors Type GH



#### Features

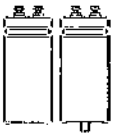
- very long useful life
- all contacts welded
- threaded terminals
- type GHA for clamp mounting
- type GHB for bolt mounting

#### Applications

- standard- and switched mode power supply
- computer
- telecommunication
- industries electrical and electronic
- inverter

#### Quick reference

	$U_R < 400 \text{ V}$	$U_R \geq 400 \text{ V}$
Temperature range	- 40°C ... + 105°C	- 40°C ... + 85°C
Tolerance	+ 30% -10%	
Max. reverse voltage	2V	
Useful life	see diagram useful life p. 35	
Leakage current 5 min @ $U_R$	0,006 * C [µF] * U [V] + 4 µA [µA]	
Leakage current 1 h @ $U_R$	0,15 * leakage current 5 min @ $U_R$	
Specs.	DIN 41332 IEC 384 - 4 LL	
Insulation	shrink - on sleeve voltage proof $\geq 2500 \text{ V AC}$	
Content of supply	GA... connecting screws GB... connecting screws and fixing nut	
Terminals	up to 75 mm Ø M 5 , beyond M 6	

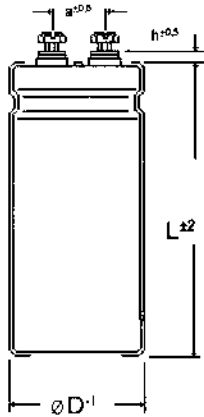


# Aluminium Electrolytic Capacitors

## 5.1 Mechanical Data Type GH

### GHA

clamp mounted

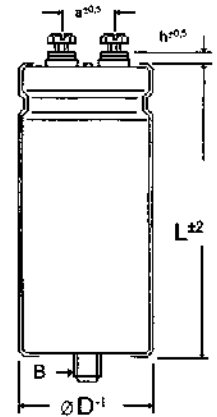


D [mm]	h [mm]	a [mm]	B	terminals
35	6	13	M 8 x 12	M 5
50	5	22	M 12 x 16	M 5
65	5	28,5	M 12 x 16	M 5
75	5	31,7	M 12 x 16	M 5
90	5	31,7	M 12 x 16	M 6

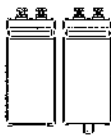
	thread	max. tightening torque
terminals	M 5	2,0 Nm
terminals	M 6	2,5 Nm
mounting	M 8	4,0 Nm
mounting	M 12	10,0 Nm

### GHB

stud mounted

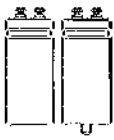


Capacitance [µF]	Rated voltage [V]									
	16	25	40	63	100	160	250	350	400	450
220								35 x 54	35 x 80	35 x 100
330								35 x 80	50 x 70	50 x 70
470						35 x 54	35 x 80	50 x 70	50 x 80	50 x 80
680						35 x 70	50 x 70	50 x 80	50 x 100	50 x 100
1000					35 x 54	35 x 80	50 x 80	50 x 100	65 x 100	65 x 100
1500					35 x 70	50 x 70	50 x 100	65 x 100	75 x 100	75 x 100
2200				35 x 54	35 x 80	50 x 80	65 x 100	75 x 100	75 x 145	75 x 145
3300				35 x 70	50 x 70	65 x 100	75 x 100	75 x 145	75 x 145	
4700			35 x 70	35 x 80	50 x 80	75 x 100	75 x 145			
6800		35 x 54	35 x 80	35 x 100	50 x 100	75 x 145				
10000	35 x 54	35 x 70	35 x 100	50 x 80	65 x 100					
15000	35 x 70	35 x 100	50 x 70	50 x 100	75 x 100					
22000	35 x 100	50 x 70	50 x 100	65 x 100	75 x 145					
33000	50 x 70	50 x 80	65 x 100	75 x 100						
47000	50 x 100	65 x 100	75 x 100	75 x 145						
68000	65 x 100	75 x 100	75 x 100							
100000	75 x 100	75 x 145	75 x 145							
150000	75 x 145	75 x 145								
220000	75 x 145									



### 5.2 Standard Values Type GH

U <sub>R</sub> [V]	C <sub>R</sub> [μF]	Case size Ø x L [mm]	ESR <sub>100Hz</sub>	ESR <sub>100Hz</sub>	Z <sub>10kHz</sub>	Rated ripple current 100Hz		Order code GHA... GHB...
			20°C typ. [mΩ]	20°C max. [mΩ]	20°C max. [mΩ]	85°C [A]	105°C [A]	
16	10000	35 x 54	26	39	34		3,7	...10301635054
16	15000	35 x 70	17	26	22		5,1	...15301635070
16	22000	35 x 100	14	21	18		6,5	...22301635100
16	33000	50 x 70	10	15	13		7,4	...33301650070
16	47000	50 x 100	9	14	12		9,0	...47301650100
16	68000	65 x 100	8	12	10		10,8	...68301665100
16	100000	75 x 100	7	11	9		11,5	...10401675100
16	150000	75 x 145	6	9	8		14,3	...15401675145
16	220000	75 x 145	6	9	8		14,3	...22401675145
25	6800	35 x 54	27	41	35		3,6	...68202535054
25	10000	35 x 70	23	35	30		4,4	...10302535070
25	15000	35 x 100	21	32	27		5,3	...15302535100
25	22000	50 x 70	13	20	17		6,5	...22302550070
25	33000	50 x 80	11	17	14		7,5	...33302550080
25	47000	65 x 100	10	15	13		9,6	...47302565100
25	68000	75 x 100	8	12	10		10,8	...68302575100
25	100000	75 x 145	7	11	9		13,2	...10402575145
25	150000	75 x 145	6	9	8		14,3	...15402575145
40	4700	35 x 70	28	42	36		4,0	...47204035070
40	6800	35 x 80	23	35	30		4,6	...68204035080
40	10000	35 x 100	19	29	25		5,6	...10304035100
40	15000	50 x 70	14	21	18		6,3	...15304050070
40	22000	50 x 100	12	18	16		7,8	...22304050100
40	33000	65 x 100	10	15	13		9,6	...33304065100
40	47000	75 x 100	8	12	10		10,8	...47304075100
40	68000	75 x 100	5	8	7		13,6	...68304075100
40	100000	75 x 145	4	6	5		17,5	...10404075145
63	2200	35 x 54	49	74	64		2,7	...22206335054
63	3300	35 x 70	33	50	43		3,7	...33206335070
63	4700	35 x 80	22	33	29		4,8	...47206335080
63	6800	35 x 100	18	27	23		5,7	...68206335100
63	10000	50 x 80	12	18	16		7,1	...10306350080
63	15000	50 x 100	9	14	12		9,0	...15306350100
63	22000	65 x 100	8	12	10		10,8	...22306365100
63	33000	75 x 100	6	9	8		12,4	...33306375100
63	47000	75 x 145	5	8	7		15,7	...47306375145
100	1000	35 x 54	63	95	82		2,4	...10210035054
100	1500	35 x 70	40	60	52		3,3	...15210035070
100	2200	35 x 80	30	45	39		4,0	...22210035080
100	3300	50 x 70	25	38	33		4,7	...33210050070
100	4700	50 x 80	22	33	29		5,3	...47210050080
100	6800	50 x 100	19	29	25		6,2	...68210050100
100	10000	65 x 100	12	18	16		8,8	...10310065100
100	15000	75 x 100	9	14	12		10,1	...15310075100
100	22000	75 x 145	8	12	10		12,4	...22310075145



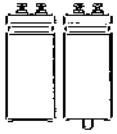
## Aluminium Electrolytic Capacitors

### Standard Values Type GH

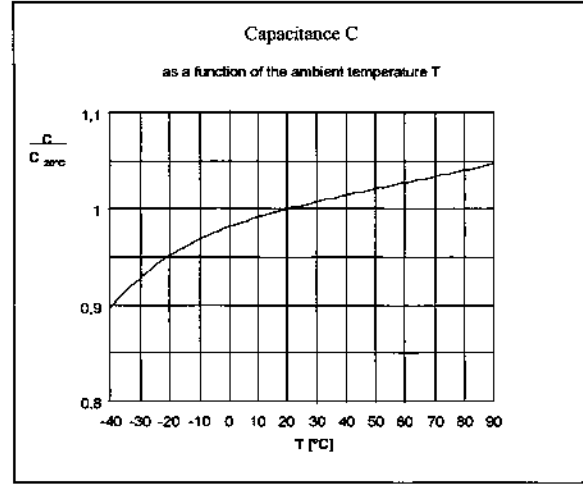
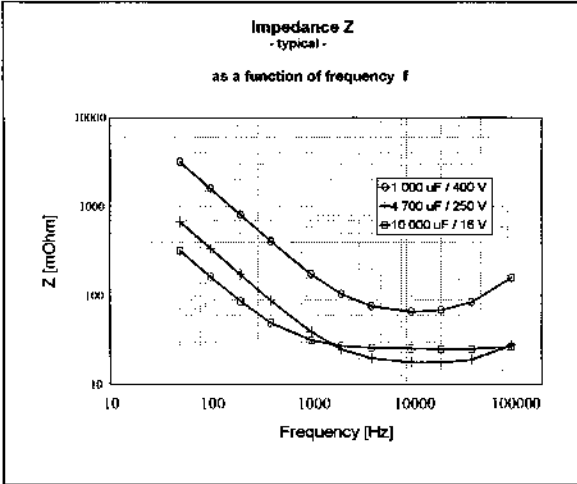
U <sub>R</sub> [V]	C <sub>R</sub> [μF]	Case size Ø x L [mm]	ESR <sub>100 Hz</sub>	ESR <sub>100 Hz</sub>	Z <sub>10 kHz</sub>	Rated ripple current 100 Hz		Order code GHA... GHB...
			20°C typ. [mΩ]	20°C max. [mΩ]	20°C max. [mΩ]	85°C [A]	105°C [A]	
160	470	35 x 54	160	240	208		1,5	...47116035054
160	680	35 x 70	100	150	130		2,1	...68116035070
160	1000	35 x 80	80	120	104		2,5	...10216035080
160	1500	50 x 70	60	90	78		3,0	...15216050070
160	2200	50 x 80	40	60	52		3,9	...22216050080
160	3300	65 x 100	27	41	35		5,9	...33216065100
160	4700	75 x 100	20	30	26		6,8	...47216075100
160	6800	75 x 145	16	24	21		8,8	...68216075145
250	470	35 x 80	160	240	208		1,8	...47125035080
250	680	50 x 70	110	165	143		2,2	...68125050070
250	1000	50 x 80	60	90	78		3,2	...10225050080
250	1500	50 x 100	50	75	65		3,8	...15225050100
250	2200	65 x 100	35	53	46		5,1	...22225065100
250	3300	75 x 100	23	35	30		6,3	...33225075100
250	4700	75 x 145	17	26	22		8,5	...47225075145
350	220	35 x 54	190	285	247		1,4	...22135035054
350	330	35 x 80	160	240	208		1,8	...33135035080
350	470	50 x 70	140	210	182		2,0	...47135050070
350	680	50 x 80	80	120	104		2,8	...68135050080
350	1000	50 x 100	50	75	65		3,8	...10235050100
350	1500	65 x 100	45	68	59		4,5	...15235065100
350	2200	75 x 100	30	45	39		5,6	...22235075100
350	3300	75 x 145	25	38	33		7,0	...33235075145
400	220	35 x 80	200	300	260	1,9		...22140035080
400	330	50 x 70	180	270	234	2,1		...33140050070
400	470	50 x 80	150	225	195	2,5		...47140050080
400	680	50 x 100	90	135	117	3,5		...68140050100
400	1000	65 x 100	60	90	78	4,8		...10240065100
400	1500	75 x 100	50	75	65	5,3		...15240075100
400	2200	75 x 145	35	53	46	7,3		...22240075145
400	3300	75 x 145	29	44	40	8,0		...33240075145
450	220	35 x 100	220	330	286	2,0		...22145035100
450	330	50 x 70	200	300	260	2,0		...33145050070
450	470	50 x 80	150	225	195	2,5		...47145050080
450	680	50 x 100	100	150	130	3,3		...68145050100
450	1000	65 x 100	70	105	91	4,5		...10245065100
450	1500	75 x 100	60	90	78	4,8		...15245075100
450	2200	75 x 145	40	60	52	6,8		...22245075145

Please choose type GM ( p. 23 ) for a higher CU product.

Please choose type G ( p. 14 ) for higher ripple currents.

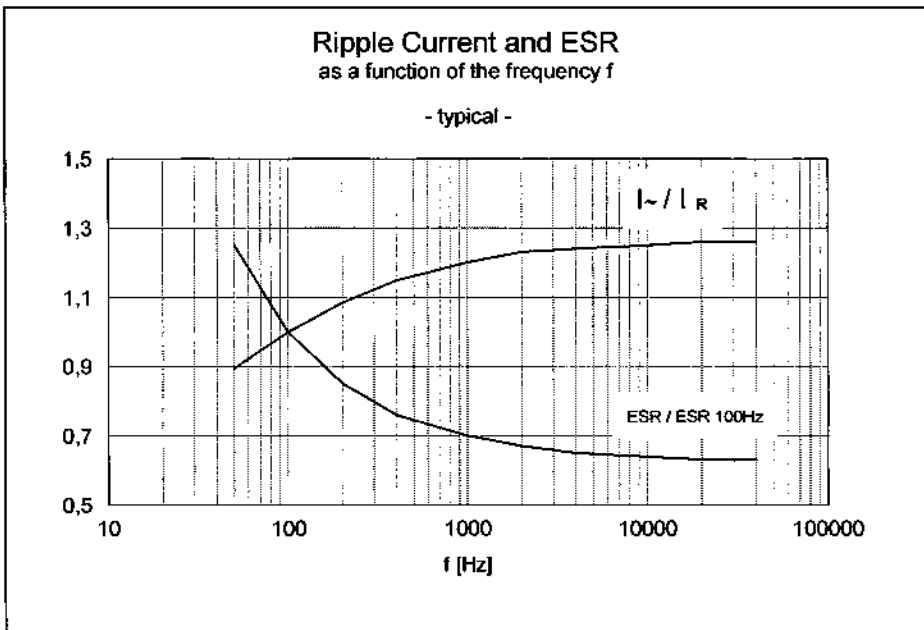


### 5.3 Technical Data Type GH



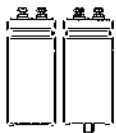
### ESL

diameter	≤ 50 mm	65 mm	75 mm	90 mm
ESL [nH]	≈ 10	≈ 15	≈ 20	≈ 20



Because the contact elements have a limited current loading, the following currents may not be exceeded.

diameter	≤ 50 mm	65 mm	75 mm	90 mm
max. ripple current	30 A	40 A	50 A	60 A



# Aluminium Electrolytic Capacitors

## 5.3.1 Useful Life Type GH

