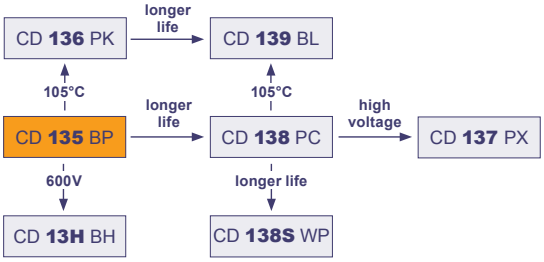
CD **135** BP Series

4 000h at 85°C

- Standard at 85°C
- High Ripple Current
- Power Supplies & Inverters



Item	Characteristics	
Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85
	The usage at lower temperatures than indicated may be possible. Please contact the Jianghai Europe sales office for approval.	
Voltage Range (V)	10 ~ 250	350 ~ 500
Capacitance Range (µF)	270 ~ 820 000	
Capacitance Tolerance (20°C, 120Hz)	± 20%	
Leakage Current (µA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0,01CV or 5mA, whichever is smaller C: Nominal Capacitance (µF) V: Rated Voltage (V)	
Fast Charge-Discharge	Please consult Jianghai for a appropriate choice of the capacitor or possible technical adaptions. Typical applications: Welding, Photoflash, Servo motors, X-Ray	

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	**4000h**	>65 000h	2 000h	2 000h	1 000h
Leakage Current	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacitance Change	Within ± 30% of initial value		Within ± 20% of initial value	Within ± 10% of initial value	Within ± 20% of initial value
Condition:					
Applied Voltage	U_R	U_R	U_R	U_R	$U_R = 0$
Applied Current	I_R	1,2 x I_R	I_R	$I_R = 0$	$I_R = 0$
Applied Temperature	85°C	40°C	85°C	85°C	85°C
Outlier Percentage	≤ 1%	≤ 1%	0%	IEC 60384	0%
					After test: U_R to be applied for 60min >24h before measurement

Terminal and Construction	The terminal version has an impact on the current capability and mechanical behavior (vibration). For high current applications the terminals C,D and E are preferred, see page 12.
Optional	Self-extinguishing Electrolyte on request

Multiplier for Ripple Current

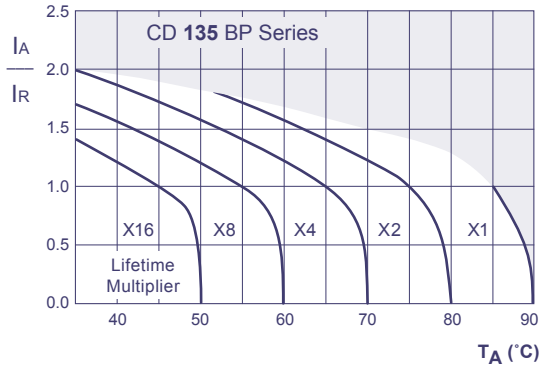
Frequency Coefficient

Frequency / Rated Voltage (V)	50Hz	120Hz	300Hz	1kHz	3kHz	5kHz	≥10kHz
10 ~ 50	0,95	1,00	1,04	1,10	1,12	1,13	1,15
63 ~ 100	0,95	1,00	1,06	1,16	1,22	1,26	1,30
160 ~ 500	0,80	1,00	1,10	1,25	1,35	1,40	1,50

Multipliers for typical operating conditions.

Multiplier for Lifetime

Lifetime Diagram



I_A = actual ripple current at 120Hz, I_R = rated ripple current at 120Hz, 85°C
Multiplier of Useful Life as a function of ambient temperature and ripple current load

Safety Factor: This diagram includes a safety margin.
In many cases the allowed current capability/lifetime may be increased.
For details and approvals please contact your local Jianghai Europe sales office.

Screw

Ratings for CD **135** BP Series

$U_{R.DC}$ (Surge Voltage) Code	Rated Capa-citance	Max Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	-	(mΩ)	(Arms)	(mm)
10 (13) 1A	33000	0,8	20,5	4,3	36 x 53
	39000	0,8	17,6	4,7	36 x 53
	47000	0,8	14,6	5,2	36 x 65
	56000	0,8	12,5	6,1	36 x 83
	68000	0,8	10,1	6,7	36 x 83
	82000	0,8	9,0	7,7	36 x 100
	100000	0,8	7,5	8,8	36 x 100
	120000	0,8	7,1	10,0	36 x 121
	150000	1,0	6,5	10,8	36 x 121
	180000	1,0	6,0	12,0	51 x 96
	220000	1,5	5,0	11,2	51 x 121
	270000	1,5	4,4	12,8	51 x 121
	330000	1,5	3,8	15,3	64 x 96
	390000	1,5	3,4	17,3	64 x 115
	470000	2,0	2,9	16,7	64 x 130
	560000	2,0	2,7	19,0	77 x 115
	680000	2,0	2,5	21,7	77 x 130
	820000	2,0	2,4	24,7	77 x 155
16 (20) 1C	22000	0,6	22,0	4,1	36 x 53
	27000	0,6	19,1	4,5	36 x 53
	33000	0,6	15,7	5,0	36 x 53
	39000	0,6	13,1	5,9	36 x 65
	47000	0,6	11,0	6,4	36 x 83
	56000	0,6	9,5	7,3	36 x 83
	68000	0,6	7,9	8,4	36 x 100
	82000	0,8	6,8	8,3	36 x 100
	100000	0,8	5,8	9,5	36 x 121
	120000	0,8	5,1	10,9	36 x 121
	150000	1,0	4,4	11,3	51 x 96
	180000	1,0	4,0	12,8	51 x 115
	220000	1,0	3,4	15,3	51 x 130
	270000	1,0	3,0	17,6	64 x 96
	330000	1,5	2,8	16,8	64 x 115
	390000	1,5	2,6	18,3	64 x 130
	470000	1,5	2,4	21,3	77 x 115
	560000	1,5	2,2	23,6	77 x 130
	680000	1,5	2,0	27,6	77 x 155
	820000	2,0	1,9	27,1	90 x 157
25 (32) 1E	15000	0,5	22,0	3,7	36 x 53
	18000	0,5	18,0	4,1	36 x 53
	22000	0,5	15,8	4,5	36 x 53
	27000	0,5	12,8	5,0	36 x 65
	33000	0,5	11,0	5,9	36 x 83
	39000	0,5	9,4	6,7	36 x 83
	47000	0,5	7,8	7,7	36 x 100
	56000	0,6	6,8	7,9	36 x 100
	68000	0,6	5,8	9,1	36 x 121
	82000	0,6	5,1	10,4	36 x 121
	100000	0,8	4,4	10,3	51 x 96
	120000	0,8	4,0	11,7	51 x 115
	150000	0,8	3,4	14,1	51 x 130
	180000	0,8	3,0	15,7	64 x 96
	220000	1,0	2,8	16,1	64 x 115
	270000	1,0	2,5	18,6	64 x 130
	330000	1,0	2,3	21,9	64 x 155
	390000	1,2	2,2	22,0	77 x 115
	470000	1,2	2,0	25,6	77 x 155
	560000	1,2	1,8	27,9	90 x 131
	680000	1,2	1,5	32,5	90 x 157
35 (44) 1V	10000	0,4	23,6	3,4	36 x 53
	12000	0,4	20,0	3,7	36 x 53
	15000	0,4	17,0	4,2	36 x 65
	18000	0,4	13,7	4,7	36 x 83
	22000	0,4	11,6	5,7	36 x 83
	27000	0,4	9,4	6,3	36 x 100
	33000	0,4	9,0	7,2	36 x 100
	39000	0,5	8,2	8,3*	36 x 121
	47000	0,5	7,9	8,7	51 x 80*
	56000	0,6	7,6	8,6	51 x 96
	68000	0,6	6,0	9,8	51 x 115
	82000	0,6	4,8	11,6	64 x 96
	100000	0,6	4,0	13,3	64 x 100*
	120000	0,8	3,9	14,8	64 x 121
	150000	0,8	3,6	14,9	64 x 130
	180000	0,8	3,2	17,0	77 x 115
	220000	0,8	2,9	20,0	77 x 130

$U_{R.DC}$ (Surge Voltage) Code	Rated Capa-citance	Max Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	-	(mΩ)	(Arms)	(mm)
35 (44) 1V	270000	1,0	2,5	20,3	77 x 130*
	330000	1,0	2,3	23,5	77 x 140
		1,0	2,3	23,5	90 x 131
	390000	1,0	2,0	26,4	90 x 157
	470000	1,0	1,8	29,6	90 x 157
50 (63) 1H	5600	0,3	46,0	3,0	36 x 53
	6800	0,3	38,0	3,3	36 x 53
	8200	0,3	31,4	3,6	36 x 53
	10000	0,3	25,8	4,0	36 x 60*
	12000	0,3	21,5	4,7	36 x 80*
	15000	0,3	15,0	5,5	36 x 80*
	18000	0,3	12,0	6,2	36 x 100
	22000	0,4	10,8	6,3	36 x 121
	27000	0,4	9,5	7,1	36 x 121
		0,4	9,5	7,1	51 x 96
	33000	0,4	8,9	8,2	51 x 96
	39000	0,5	8,2	8,1	51 x 96
	47000	0,5	7,6	9,3	51 x 115
	56000	0,5	6,4	10,5	64 x 96
	68000	0,5	5,3	12,0	64 x 96
	82000	0,5	4,2	13,7	64 x 115
	100000	0,6	3,9	14,7	64 x 120
		0,6	3,9	14,7	77 x 115
	120000	0,6	3,3	16,7	77 x 115
	150000	0,6	3,0	19,3	77 x 130
	180000	0,6	2,5	21,9	77 x 130*
	220000	0,6	2,0	21,4	77 x 130
		0,6	2,0	21,4	90 x 131
	270000	0,6	1,8	24,6	90 x 157
63 (79) 1J	3900	0,25	47,2	2,7	36 x 53
	4700	0,25	39,0	3,0	36 x 53
	5600	0,25	38,4	3,3	36 x 53
	6800	0,25	31,6	3,6	36 x 65
	8200	0,25	26,2	4,3	36 x 83
	10000	0,25	23,3	4,9	36 x 83
		0,25	23,3	4,9	51 x 60
	12000	0,25	18,0	5,6	36 x 100
	15000	0,3	16,0	5,9	36 x 100
	18000	0,3	14,6	6,7	36 x 121
	22000	0,3	13,0	7,8	36 x 121
		0,3	13,0	7,8	51 x 80
	27000	0,4	12,4	7,4	51 x 96
	33000	0,4	7,9	8,4	51 x 96
	39000	0,4	7,4	9,5	51 x 115
	47000	0,4	6,2	11,3	51 x 130
		0,4	6,2	11,3	64 x 115
	56000	0,4	5,5	12,8	64 x 115
	68000	0,5	5,3	12,7	64 x 120*
	82000	0,5	4,4	14,5	64 x 130
	100000	0,5	3,6	16,7	77 x 115
	120000	0,5	3,0	18,9	77 x 120*
	150000	0,5	2,4	22,4	77 x 155
	180000	0,6	2,4	22,4	77 x 143
		0,6	2,4	22,4	90 x 131
	220000	0,6	2,0	26,2	90 x 157
80 (100) 1K	3300	0,25	54,0	2,5	36 x 53
	3900	0,25	46,0	2,8	36 x 53
	4700	0,25	38,1	3,0	36 x 65
	5600	0,25	32,0	3,6	36 x 83
	6800	0,25	26,4	3,9	36 x 83
	8200	0,25	22,1	4,5	36 x 83
	10000	0,25	17,1	5,2	36 x 100
		0,25	17,1	5,2	51 x 75
	12000	0,25	15,0	5,9	36 x 100
	15000	0,25	12,0	6,8	36 x 121
	18000	0,25	10,4	7,8	36 x 121
	22000	0,3	9,8	8,0	51 x 96
	27000	0,3	8,0	9,2	51 x 96
	33000	0,3	6,5	10,5	51 x 115
	39000	0,3	6,0	12,0	51 x 130
	47000	0,3	4,9	13,6	64 x 115
	56000	0,4	4,3	13,4	64 x 130
	68000	0,4	4,0	15,4	77 x 115
	82000	0,4	3,5	17,5	77 x 130
	100000	0,4	2,8	20,5	77 x 155
	120000	0,4	2,4	22,4	90 x 131
	150000	0,4	2,0	26,5	90 x 157

Customer specific products and adaptions on request. * improved design

Screw

Ratings for CD **135** BP Series

$U_{R.DC}$ (Surge Voltage) Code	Rated Capa-citance	Max Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	-	(mΩ)	(Arms)	(mm)
100 (125) 2A	1800	0,25	48,2	1,9	36 x 53
	2200	0,25	44,0	2,1	36 x 53
	2700	0,25	38,5	2,3	36 x 53
	3300	0,25	34,6	2,6	36 x 65
	3900	0,25	28,4	3,0	36 x 80*
	4700	0,25	26,3	3,5	36 x 80*
	5600	0,25	23,0	3,9	36 x 100
	6800	0,25	21,8	4,5	36 x 100
	8200	0,25	20,0	5,1	36 x 121
	10000	0,25	18,7	5,9	36 x 121
		0,25	18,7	5,9	51 x 75
	12000	0,25	16,0	6,4	51 x 75
	15000	0,25	11,5	7,0	51 x 96
	18000	0,25	9,8	8,3	51 x 115
	22000	0,25	7,9	10,0	51 x 130
	27000	0,25	6,8	11,5	64 x 115
	33000	0,25	5,5	11,9	64 x 130
		0,25	5,5	11,9	77 x 105
	39000	0,25	4,9	13,4	77 x 115
	47000	0,35	4,5	14,2	77 x 130
	56000	0,35	4,0	16,0	77 x 155
	68000	0,35	3,4	18,8	90 x 131
	82000	0,35	3,0	20,5	90 x 157
	100000	0,35	2,5	24,0	90 x 171
160 (200) 2C	3300	0,25	30,7	5,2	36 x 121
	3900	0,25	26,2	5,3	51 x 75
	4700	0,25	20,8	5,9	51 x 75
	5600	0,25	18,8	7,0	51 x 96
	6800	0,25	16,2	7,8	51 x 96
	8200	0,25	13,5	9,1	51 x 115
	10000	0,25	12,9	10,4	64 x 96
	12000	0,25	10,2	11,3	51 x 120
	15000	0,25	9,0	14,3	64 x 130
	18000	0,25	7,5	15,6	64 x 130
	22000	0,25	6,4	18,3	77 x 130
	27000	0,25	5,2	20,2	77 x 130
	33000	0,25	3,6	23,8	90 x 131
	39000	0,25	2,2	27,9	90 x 157
200 (250) 2D	2200	0,25	38,5	3,9	36 x 100
	2700	0,25	26,4	4,7	36 x 121
	3300	0,25	23,5	4,9	51 x 75
	3900	0,25	21,4	5,3	51 x 75
	4700	0,25	19,5	6,4	51 x 96
	5600	0,25	17,5	7,6	51 x 115
	6800	0,25	13,7	8,8	51 x 130
	8200	0,25	11,3	9,4	64 x 96
	10000	0,25	9,4	10,4	64 x 96
	12000	0,25	8,6	12,1	77 x 96
	15000	0,25	7,3	14,4	77 x 96
	18000	0,25	5,9	16,5	77 x 130
	22000	0,25	4,1	19,6	77 x 155
	27000	0,25	3,2	21,5	90 x 131
	33000	0,25	2,5	25,3	90 x 157
250 (300) 2E	1500	0,25	49,1	3,2	36 x 100
	1800	0,25	41,1	3,5	36 x 100
	2200	0,25	32,5	4,0	51 x 75
	2700	0,25	27,7	4,4	51 x 75
	3300	0,25	23,1	5,4	51 x 96
	3900	0,25	20,0	6,3	51 x 115
	4700	0,25	16,5	7,1	64 x 96
	5600	0,25	14,2	7,8	64 x 96
	6800	0,25	11,8	9,1	64 x 115
	8200	0,25	11,1	10,0	64 x 115
	10000	0,25	10,7	11,7	64 x 130
	12000	0,25	9,2	12,9	77 x 115
	15000	0,25	7,3	15,1	77 x 130
	18000	0,25	5,8	17,7	77 x 155
	22000	0,25	3,2	20,9	90 x 157
350 (400) 2V	390	0,2	268	1,7	36 x 53
	470	0,2	228	2,2	36 x 83
	560	0,2	190	2,4	36 x 83
	680	0,2	152	2,6	36 x 83
	820	0,2	126	3,1	36 x 100
	1000	0,2	104	3,4	36 x 100
	1200	0,2	85,8	3,8	51 x 75
	1500	0,2	72,2	4,3	51 x 75
	1800	0,2	58,2	5,1	51 x 96

$U_{R.DC}$ (Surge Voltage) Code	Rated Capa-citance	Max Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Ø D x L
(V)	(µF)	-	(mΩ)	(Arms)	(mm)
350 (400) 2V	2200	0,2	47,9	5,7	51 x 96
	2700	0,2	39,0	7,1	51 x 130
	3300	0,2	32,1	7,9	51 x 130
	3900	0,2	27,8	9,0	64 x 115
	4700	0,2	25,0	10,3	64 x 130
	5600	0,2	22,5	11,4	77 x 115
	6800	0,2	17,1	13,1	77 x 130
	8200	0,2	14,4	15,4	77 x 155
	10000	0,2	11,5	18,1	90 x 157
	12000	0,2	9,8	20,0	90 x 157
	15000	0,2	7,9	24,5	90 x 196
	18000	0,2	6,5	28,8	90 x 236
400 (450) 2G	330	0,2	248	1,5	36 x 53
	390	0,2	208	2,0	36 x 83
	470	0,2	178	2,2	36 x 83
	560	0,2	145	2,4	36 x 83
	680	0,2	119	2,8	36 x 100
	820	0,2	98,5	3,1	36 x 100
	1000	0,2	82,3	3,5	51 x 75
	1200	0,2	67,5	3,8	51 x 75
	1500	0,2	58,0	4,7	51 x 96
	1800	0,2	47,2	5,2	51 x 96
	2200	0,2	34,8	6,4	51 x 120
	2700	0,2	33,2	7,0	64 x 96
	3300	0,2	31,2	8,2	64 x 115
	3900	0,2	25,1	9,4	64 x 130
	4700	0,2	23,7	10,4	77 x 115
	5600	0,2	19,0	11,9	77 x 130
	6800	0,2	15,5	14,1	77 x 155
	8200	0,2	13,5	16,4	90 x 157
	10000	0,2	11,1	18,3	90 x 157
	12000	0,2	9,8	21,8	90 x 196
	15000	0,2	8,0	26,3	90 x 236
450 (500) 2W	270	0,2	421	1,4	36 x 53
	330	0,2	280	1,8	36 x 83
	390	0,2	243	2,0	36 x 83
	470	0,2	200	2,2	36 x 83
	560	0,2	173	2,6	36 x 100
	680	0,2	140	2,8	36 x 100
	820	0,2	95,9	3,2	51 x 75
	1000	0,2	82,2	3,5	51 x 75
	1200	0,2	72,0	4,2	51 x 96
	1500	0,2	58,5	5,1	51 x 115
	1800	0,2	45,5	5,9	51 x 130
	2200	0,2	32,8	6,3	64 x 96
	2700	0,2	31,6	7,5	64 x 115
	3300	0,2	30,0	8,7	64 x 130
	3900	0,2	29,3	9,5	77 x 115
	4700	0,2	23,5	10,9	77 x 130
	5600	0,2	16,5	12,8	77 x 155
	6800	0,2	14,4	15,0	90 x 157
	8200	0,2	12,1	16,5	90 x 157
	10000	0,2	10,0	20,0	90 x 196
	12000	0,2	8,0	23,6	90 x 236
500 (550) 2H	1000	0,25	85	4,6	51 x 115
	1500	0,25	60	5,7	64 x 96
	2200	0,25	41	6,9	64 x 130
	2700	0,25	36	8,1	77 x 115
	3300	0,25	32	9,6	77 x 130
	3900	0,25	30	10,8	77 x 130
	4700	0,25	27	12,1	77 x 155
	5600	0,25	21	13,8	90 x 157
	6800	0,25	18	15,8	90 x 171
	8200	0,25	14	17,2	77 x 220
	10000	0,25	10	22,1	90 x 236

* improved design

Customer specific products and adaptions on request.

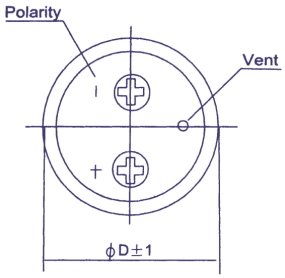
Part Number System

Order Code **Screw Type**

EC	G	1C	BP	101	M	B	E	160	A361		JExxxxx
Technology	Terminal Type	Rated Voltage Code	Series Code	Capacitance Code	Capacitance Tolerance	Mounting	Diameter	Length	For Terminal Code see tables below	Material Code	for Specials only
EC = Electrolytic Capacitor	Screw = G	For coding please refer to the pages of ratings	CD **135** = BP	100 = 101	**±20%** = **M**	Bolt = B	36 = A	53 = 053		-	
			CD **136** = PK	1 000 = 102	±10% = K	Flat bottom, no bracket, single sleeve = N	40 = B	65 = 065		V=PVC Sleeve	
			CD **137** = PX	10 000 = 103	+30 / -10% = Q	Flat bottom, no bracket, full double sleeve = D	51 = C	96 = 096		E=PET Sleeve	
			CD **137S** = PR		+20 / -0% = R	Flat bottom incl. 2 stoppers bracket = I	64 = D	100 = 100		O=Polyolefin	
			CD **138** = PC		+20 / -10% = V	Flat bottom incl. 3 stoppers bracket = Y	77 = E	115 = 115			
			CD **139** = BL		+50 / -10% = T	Details of Sleeving see table below	90 = F	236 = 236			
			CD **139S** = HC		**preferred**		101 = G				
			CD **13H** = BH								
			CD **138S** = WP								
			CD **837** = ZX								
			CD **838** = ZT								

Standard =
V=PVC Sleeve

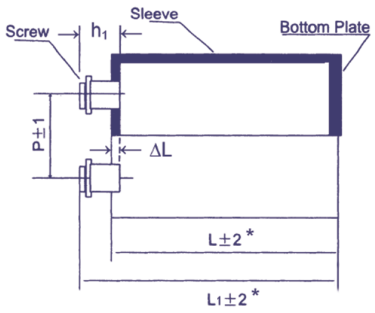
Technical Specification **Screw Type**



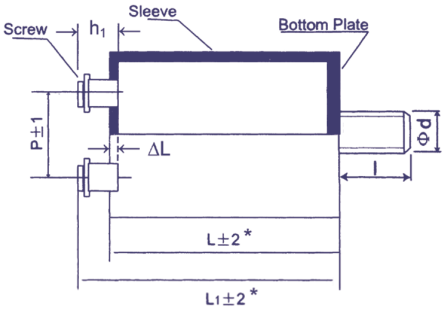
Terminal Detail

Screw Definition	
Hexagon-Head	M5x10
Hexagon-Head	M6x12
Hexagon-Head	M8x16

Flat Bottom Housing
Order Code: I, Y, D, N



Bolt Housing
Order Code: B



Order Code	Mounting Style	Sleeving Style (typical design)	Total Length L1 in mm
B	Bolt	Single Sleeve	L1 = L + h1 - 0,8mm
N	Flat bottom, no bracket	Single Sleeve	L1 = L + h1 - 0,8mm
D	Flat bottom, no bracket	Full length Double Sleeve	L1 = L + h1 - 0,4mm
I	I-Type Bracket	**Diameter 36:** Single Sleeve **Diameter 51-101:** Ur < 350V: ½ length Double Sleeve Ur ≥ 300V: full length Double Sleeve Other Sleeve Versions on request	L1 = L + h1 - 0,8mm L1 = L + h1- 0,6mm L1 = L + h1- 0,4mm
Y	Y-Type Bracket	Ur < 350V: ½ length Double Sleeve Ur ≥ 300V: full length Double Sleeve Other Sleeve Versions on request	L1 = L + h1 - 0,6mm L1 = L + h1 - 0,4mm

L = length of capacitor
h1 see table below
ΔL = 0,4 or 0,6 or 0,8

Bolt:

Ø D	Ø d	l
Ø 36	M8	12
≥ Ø 51	M12	16

in mm

Bolt: Maximum Torque M12: 12,5Nm

Terminal Screws:
Maximum Torque M5: 3Nm M6: 6Nm

Mounting

Position: Screw capacitors need to be mounted into an upright position. If a horizontal position is needed please ensure the safety vent is located on the highest position (12 o'clock).

Terminal Code

Terminal Code	ØD	Screw	Pitch P	d1	d2	h1	h2
A361	**36**	**M5**	**12,7**	**8**	**11**	**6,8**	**1,8**
A511	**51**	**M5**	**21,8**	**10**	**13,0**	**6,8**	**1,8**
D511	51	M5	21,8	10	13	5,5	0
A512	51	M5	21,8	10	13	7,14	0
A641	**64**	**M5**	**28,2**	**10**	**15,5**	**7,3**	**2,3**
C641	64	M5	28,5	13	0	7,2	0
C642	64	M6	28,6	13	0	5,5	0
D641	64	M5	28,2	13	15	6,4	0
D642	64	M6	28,2	13	15	6,4	0
D643	64	M5	28,2	13	15	7,14	0
E641/E642	64	M5	28,2	10	15,5	6,3	1,3
A771	**77**	**M5**	**31,4**	**10**	**15,5**	**6,3**	**1,3**
A772	77	M6	31,4	10	15,5	6,3	1,3
B771	77	M6	31,4	17,2	0	3,17	0
B772	**77**	**M6**	**31,4**	**17,2**	**0**	**6,4**	**0**
B774/**B776**	**77**	**M5**	**31,4**	**17,2**	**0**	**6,4**	**0**
C771	77	M5	31,4	17,2	0	3,5	0
C772	77	M6	31,4	17,2	0	3,5	0
C774	**77**	**M5**	**31,4**	**17,2**	**0**	**6,4**	**0**
C775	**77**	**M6**	**31,4**	**17,2**	**0**	**6,4**	**0**
C779	77	M6	31,4	13	0	5,5	0
D771	77	M5	31,4	13	15	6,4	0
D774	77	M5	31,4	13	14,2	6,4	0
D775	77	M5	31,4	13	15	7,14	0
D776	77	M6	31,4	13	15	6,4	0

Terminal Code	ØD	Screw	Pitch P	d1	d2	h1	h2
E772	77	M5	31,4	10	15,5	6,3	1,3
E774	77	M5	31,4	13	17,5	5,5	3,5
E775	77	M5	31,4	10	15,5	6,3	1,3
F771	77	M6	31,4	13	15	6,4	0
F772	77	M5	31,4	13	15	6,4	0
A901	**90**	**M5**	**31,4**	**10**	**15,5**	**6,3**	**1,3**
B901	**90**	**M6**	**31,4**	**17,2**	**0**	**6,4**	**0**
B902	**90**	**M5**	**31,4**	**17,2**	**0**	**6,4**	**0**
C901/**C905**	**90**	**M5**	**31,4**	**17,2**	**0**	**6,4**	**0**
C902	**90**	**M6**	**31,4**	**17,2**	**0**	**6,4**	**0**
C904	90	M8	31,4	17,2	0	6,4	0
D901	90	M5	31,4	10	13	5,5	0
D902	90	M5	31,4	13	15	6,4	0
D903	90	M6	31,4	13	15	6,4	0
E901	90	M6	31,4	15	20	8,6	2,4
E902	90	M5	31,4	10	15,5	6,3	1,3
F901	90	M6	31,4	13	15	6,4	0
A101	**101**	**M8**	**41,5**	**17,2**	**21,5**	**11**	**6**

preferred

in mm

Other forms on request, especially non-symmetrical layout, watercooling or laser welded terminals.
Terminal A101 = A991
Terminal A, B and F include a potting mass filling, Terminal C, D and E use a middle pin fixation without glue.
Extended Cathode designs only available with Terminal C, D and E.
Some series of the catalogue might only be available with Terminal C,D and E.

Max. Ripple Current for M5: 60Arms M6: 100Arms

Terminal Form

Terminal A
Order Code: AXXX

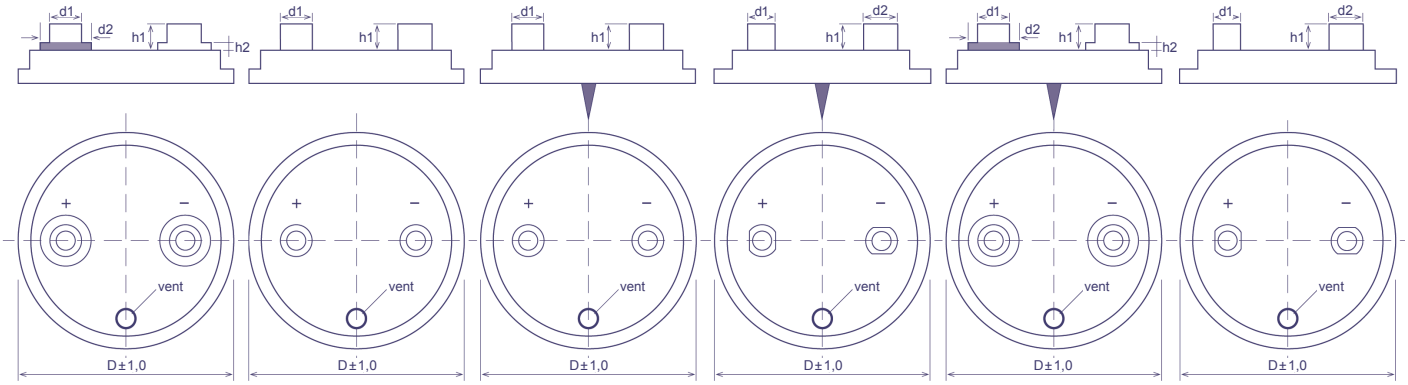
Terminal B
Order Code: BXXX

Terminal C
Order Code: CXXX

Terminal D
Order Code: DXXX

Terminal E
Order Code: EXXX

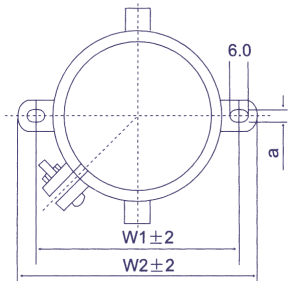
Terminal F
Order Code: FXXX



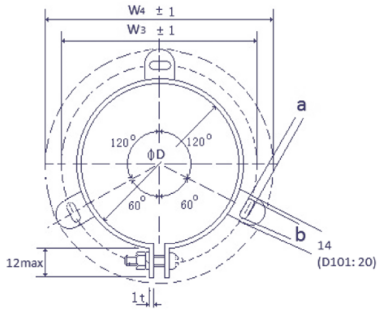
Terminals C, D and E for high current components preferred.
Other terminal designs available, especially for laser welded terminals, non-symmetrical layout and watercooling.
Please contact the Jianghai office for details.

Bracket Mounting

I -Type
Ø D 36-90



Y-Type
Ø D 51-101



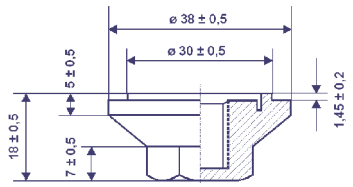
Ø D	W1	W2	W3	W4	a	b	h
36	**48,0**	**58,0**	**-**	**-**	**3,8**	**-**	**15**
51	68,0	80,0	**63,5**	**73,0**	**5,0**	**7,0**	**30**
64	81,0	93,0	**76,2**	**85,1**	**5,0**	**7,0**	**30**
77	93,5	106,0	**88,9**	**98,4**	**5,0**	**7,0**	**30**
90	108,0	120,5	**101,6**	**111,1**	**5,0**	**7,0**	**30**
101	-	-	**115,0**	**127,0**	**5,5**	**8,0**	**35**

preferred in mm

h = Height of brackets

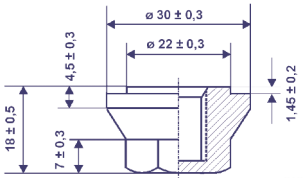
Accessories for Bolt Mounting

Cap Nut
Order Code: ACCNUT3038M12
For Screw Capacitors with M12 Bolt



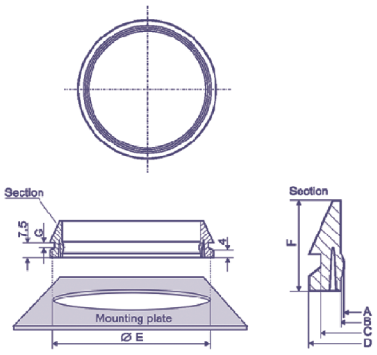
mm

Cap Nut
Order Code: ACCNUT2230M12
For Screw Capacitors with M12 Bolt

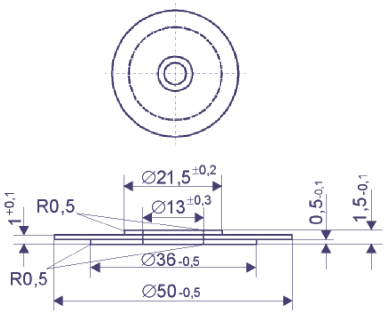


mm

Press Ring

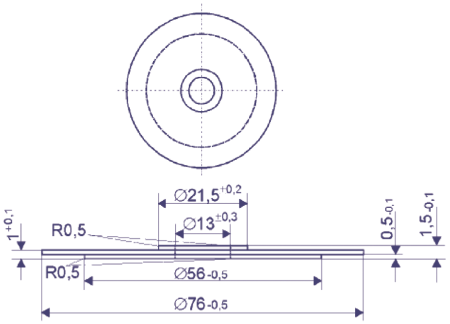


Insulation Washer
Order Code: ACCISO5113
For Screw Capacitors
with Diameter 51 und 64



mm

Insulation Washer
Order Code: ACCISO7713
For Screw Capacitors
with Diameter 77 und 90



mm

Ø Capacitor	64	77	90
A +0.3	62.3	74.8	88.0
B +0.3	64.1	77.0	90.0
C +0.3	70.5	84.5	97.9
D +0.3	74.5	88.6	102.0
E +0.2	71.2	85.5	98.6
F +0.2	18.0	20.0	23.5
G -0.25	3.0	2.4	3.0
Product Code Agree with RoHS	ACC PR164	ACC PR177	ACC PR190
Product Code Agree with RoHS and UL-94-V0	ACC PR464	ACC PR477	ACC PR490

All dimensions in mm

Jianghai Electrolytic Capacitors

Warning: JIANGHAI is not responsible for any extent of possible damages to persons or things, of any kind, caused by the improper application of and/or operating conditions harmful to electrolytic capacitors.
Misapplications which may cause failures include, but are not limited to: * Ripple current or peak current or voltage above specification, * Operating voltage above surge voltage specified, * Temperature exposure beyond specified operating temperature range.
Examples of harmful operating conditions comprise, but are not limited to: * unusual storage or transport temperatures, * excessive and/or rapid changes of ambient temperature or humidity, * heavy mechanical shock or vibration, * corrosive and abrasive particles in the ambient (cooling) air, * conducting dust in the ambient (cooling) air, * oil or water vapor or corrosive substances, * explosive gas or dust, * operation under extremely high or low ambient pressure conditions (below or above sea level), * superimposed radio frequency voltages, * radioactivity. In case of doubt about the impact of operating conditions on capacitor performance, please contact JIANGHAI.

Personal Safety: Electrical or mechanical misapplication of electrolytic capacitors may be hazardous. Personal injury or property damage may result from explosion of a capacitor or from the expulsion of electrolyte due to mechanical disruption or the release of a safety vent of a capacitor.
In case of injury or skin or eye exposure to electrolyte, immediately seek professional medical advice. Before using electrolytic capacitors in any application, please read these Handling Precautions, familiarizing thoroughly with the information contained herein. Please check before using any of our electrolytic capacitors if these components fulfill the requirements of your application and warnings and instructions for use are followed.

Warranty: The information contained in this catalogue does not form part of any quotation or contract, is believed to be accurate, reliable and up to date. Quality data are based on the statistical evaluations of a large quantity of parts and do not constitute a guarantee in a legal sense. However, agreement on these specifications does mean that the customer may claim for replacement of individual defective capacitors within the terms of delivery. We will not assume any liability beyond the replacement of defective components. This applies in particular to any consequential damage caused by component failure. Furthermore it must be taken into consideration that the figures stated for lifetime, failure rates and outlier percentages refer to the average production status and are therefore to be understood as mean values (statistic expectations) for a large number of delivery lots of identical capacitors. These figures are based on application experience and data obtained from preceding tests under normal conditions, or – for purpose of accelerated aging – more severe conditions. JIANGHAI reserves the right to change these specifications without prior notice. Any application information given is advisory and does not form part of any specification. The products are not primarily designed for use in life support applications, devices or systems where malfunction of these products can reasonably be expected to result in personal injury. JIANGHAI customers using or selling these products for use in such applications without prior written consent of JIANGHAI do so at their own risk and agree fully to indemnify JIANGHAI for any damage resulting from such improper use or sale. This version of the catalogue supersedes all previous versions. Latest versions of datasheets can be found on our homepage: www.jianghai-europe.com
For more details on precautions and guidelines for aluminum electrolytic capacitors, please refer to CENELEC Technical Report CLC/TR 50454:2008 E, “Guide for the application of aluminum electrolytic capacitors”.

Polarity: Electrolytic capacitors are polar and shall never be used with incorrect polarity, as there is a possible danger of shorting or destruction.

Rated Voltage Ur: The Rated Voltage is marked on the capacitor and defined in the datasheets as Ur. This voltage should never be exceeded and is the maximum peak voltage including any ripple voltages allowed to avoid a shortening of the lifetime or damage of the capacitor. When a ripple current is applied to the capacitor, the sum of the peak ripple voltage and bias DC voltage shall never exceed the Rated Voltage. It might be necessary to lower the maximum allowed bias DC voltage, when certain ripple currents are applied to the capacitor.

Surge Voltage: Maximum Voltage, which may be applied to the capacitor for short periods of time: max. 1000 cycles of 30 sec. per 6 min., max. 5 pulses per hour. Capacitance drift +/- 15% max.

Reverse Voltage: Reverse voltages or voltages < 0 V are not allowed.

Recovery Voltage: Electric potential between the positive and negative terminal may exist as a result of dielectric absorption. Please take action that this load does not damage other devices or scare workers during the production process (sparks possible).
If needed please discharge the capacitor through a 1kΩ resistor.

Temperature Range: Use electrolytic capacitors only within the specified operating temperature range.

Over-Current: Currents exceeding the rated ripple currents should be avoided.

Ripple Current/Voltage: The combined value of DC voltage and peak AC voltage (due to ripple current) shall not exceed the rated voltage and shall never be < 0 V. Use of aluminum electrolytic capacitors under ripple current with wide amplitudes is equivalent to quick charge-discharge operation.

Rapid Charging/Discharging: Rapid Charging/Discharging generates severe heat and gas may be emitted which may lead to explosion. Consult JIANGHAI about specially designed capacitors suitable for such kind of applications. Example: Servo Drive Application

Balancing resistors: Balancing resistors should be utilized if capacitors are used in serial connection. Please choose low-tolerance resistors to limit voltage drift.

Charge-Discharge Proof: JIANGHAI capacitors are charge-discharge proof, which means that 10^6 switching cycles will cause capacitance reduction of less than 10%.

Lifetime: There are many different lifetime definitions known without any true standard definition. Take special care when capacitors are compared that the capacitors fulfill the needed requirements. JIANGHAI publishes all conditions to be as transparent as possible. In the case of lifetime tests with additional ripple currents, the bias DC voltage must be reduced, so that the sum of bias DC voltage and the peak of the ripple voltage does not exceed the Rated Voltage Ur.

- **Load Life:** Period of time, during which the technical parameters of all capacitors stay within the given limits. JIANGHAI defines this without allowing for outliers.
- **Useful Life:** defined like load life, but a given percentage of components may be outside the defined limits. Useful life data are usually calculated within a confidence level of 60%. See further details in specifications and data sheets. Outlier percentage: ≤ 1%.
- **Endurance Test:** IEC 60384-4 defines the acceptable drift criteria of electrical parameters after the endurance tests (continuous voltage test).
- **Shelf Life:** Definition of time with acceptable drift of capacitor parameters after storage at upper category temperature without load. JIS-C-5102-1994

Vibration and mechanical stress: Capacitors are sensitive to vibration and mechanical forces applied on the leads. Do not use capacitors, which have been dropped onto a rigid surface.

Insulation: If any defect of the sleeve is visible, the component should not be used – same for any kind of visible damage. A capacitor should be electrically isolated from the following parts: Aluminum case, cathode lead wire, anode lead wire and circuit pattern, and auxiliary terminal of snap-in type. The PVC sleeve is not recognized as an isolator and therefore the standard capacitor should not be used in a place where insulation function is needed. Please contact JIANGHAI if higher grade of insulation is required.

Environmental Conditions:
- Avoid direct contact with water, salt solution, oil, dewing conditions
- Halogens generally, especially fumigation treatment with bromides and flame retardent agents containing halogens must be avoided.
- Avoid exposing to direct sunshine, ozone, ultraviolet rays and x-ray radiation.
- Air Pressure: Max. 150kPa, min. 8kPa.
- No heavy air pressure changes are allowed.
- Do not use or store in an environment containing any hazardous gas (e.g., hydrogen sulphide, sulphurous acid, nitrous acid, chlorine, ammonia, bromine, methyl bromide, other halogens) or acidic or alkaline solutions.

Storage:
- Temperature 5 to 35°C, Relative Humidity below 75%.
- Electrolytic capacitors may accumulate charge naturally during storage. In this case discharge through a 1kOhm resistor before use (Recovery Voltage).
- Leakage current may be increased after long storage time. In this case the capacitor should be subjected to the rated voltage treatment through a 1kOhm resistor before use for 1 hour, then it should be discharged through a resistor of about 1 Ohm/Volt.
- Storage times above 1 year should be avoided or rated voltage treatment may be necessary.
- In accordance to IEC 60384-4 electrolytic capacitors are subject to a reforming process before acceptance testing. Rated voltage is applied via a series resistance (100Ω: Ur ≤ 100VDC, 1kΩ: Ur > 100VDC).

Soldering: Soldering conditions (temperature, times) should be within specified conditions, especially for SMD components. Avoid high soldering temperatures as this may reduce lifetime or damage the capacitor. Do never dip the capacitor body into molten solder. Flux should not be adhered to the capacitor’s body but only to its terminals. For details and different methods please contact us.

Cleaning and Coating: Do not use fixing agents or cleaning substances containing halogens and the epoxy resin coating materials. Also never use solvents containing: Halogenated hydrocarbons, alkali, petroleum, trichloroethylene/-ethane, xylene, acetones, trichlorotrifluoroethane, tetrachloroethylene, methylenechloride, chloroform, acetates, ketones, esters, chlorides and bromides. In case of questions see detailed instructions.

Mounting: Other devices, which are mounted near the capacitor, should not touch the capacitor. Additional heat coming from other components near the capacitor may reduce the lifetime of the capacitor. Do never bend or twist the capacitor after soldering to avoid stress on the leads. Radial capacitors are not protected against mechanical forces on the leads. Forces on the pins might damage the capacitor. No printed circuit board tracks are allowed between the lead pads of the capacitor. Screw Terminal capacitors should only be mounted in an upright position.

Transport: Avoid fumigation and spraying insecticides (especially with bromides) in the import or export procedures which can cause corrosion. This applies also to the finished devices.

Maintenance: Periodical inspection should be carried out for the capacitor: visual inspection to check pressure relief open or leakage of electrolyte, electrical characteristics as leakage current, capacitance, and dissipation factor.

Electrolyte and Separator paper: Electrolyte and separator paper used in Aluminum Capacitors may be flammable. Also electrolyte is electrically conductive. Therefore in case electrolyte gets in contact with PC board it may cause corrosion of circuit pattern or cause short circuit between patterns, and may lead to smoke generation or ignition in worst case.

Caution during Use of Capacitors: Do not touch the terminals of capacitors. Keep the capacitor free from conductive solution, such as acids, alkali and so on. Ensure that the operating environment of the equipment into which the capacitor has been built is within the specified conditions mentioned in the catalogue or specification sheets.

Safety Vent: The safety vent needs some free space to open properly. Allow for free headroom of at least 2mm for diameter ≤16mm, more than 3mm for diameter 18-35mm, more than 5mm for case diameter 40mm and larger.

Emergency Actions: When the pressure relief vent is open and some gas blows out from the capacitor, please turn the main switch of the equipment off or pull out the plug from the power outlet immediately. During safety vent operation, extremely hot gas (>100°C) may blow out of the capacitors. Do not stand close to the capacitors. In case of eye contact, rinse the open eye(s) with clean water immediately. In case of ingestion, gargle with water immediately, do not swallow. Do not touch electrolyte but wash skin with soap and water in case of skin contact.

Definition of electrical parameters: Separate documents as application notes, equivalent circuit diagrams and so on are available on request.

Packaging: Please refer to the data book for details. Further information is available on request.

Scrapping: Scrapped capacitors are classified as scrapped metal. For disposal they are handled as controllable industrial waste because of the nature of the contents (electrolyte). Most of the material is aluminum and cannot be completely burned.

Jianghai Europe Electronic Components GmbH

2017 v1