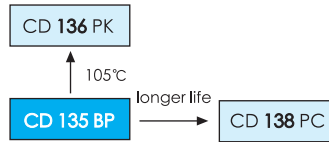


CD 135 BP SERIES



2000h at 85°C

- Features
 - Standard at 85°C
 - RoHS Compliant
- Applications
 - UPS
 - Drive, Inverter

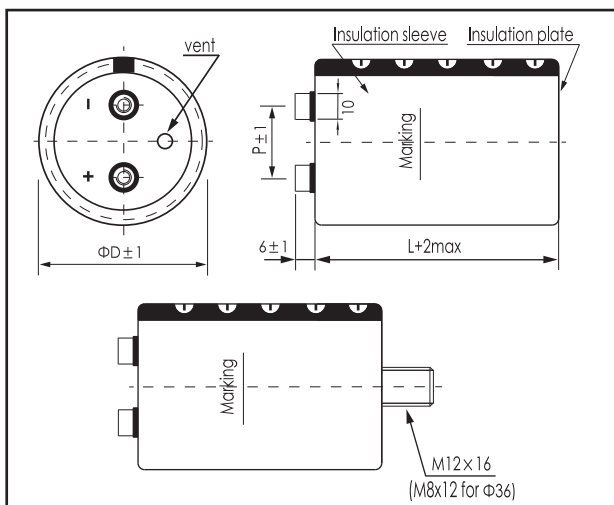


Items	Characteristics	
Operating Temperature Range (°C)	-40 ~ +85	-25 ~ +85
Voltage Range (V)	10 ~ 250	350 ~ 500
Capacitance Range (μF)	470 ~ 820000	
Capacitance Tolerance (20°C, 120Hz)	± 20%	
Leakage Current (μA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 5mA, whichever is smaller. C: Nominal Capacitance (μF) V: Rated Voltage (V)	
Dissipation Factor (20°C, 120Hz)	Less than values shown in the standard ratings	

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	>4000h	>65000h	2000h	2000h	1000h
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
Dissipation Factor	Not more than 300% of specified value		Not more than 200% of specified value	Not more than 130% of specified value	Not more than 200% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U_R I_R 85°C	U_R $1.2 \times I_R$ 40°C	U_R I_R 85°C	U_R $I_R = 0$ 85°C	$U_R = 0$ $I_R = 0$ 85°C After test: U_R to be applied for 60min >24h before measurement

Dimensions

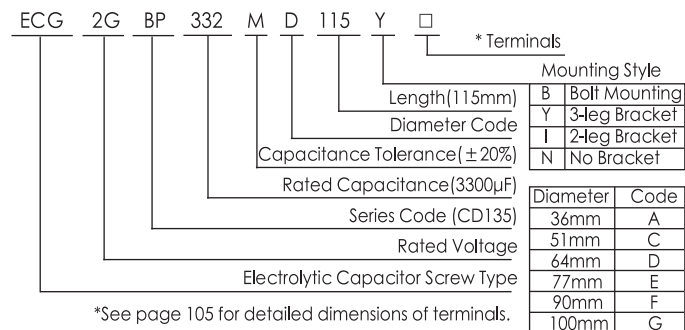
mm



ΦD/mm	36	51	64	77	90
P/mm	12.7	22.0	28.2	31.4	31.4

*Hex head screw M5 x 10 and M6 x 12 are standard screws. Longer screws are available on request.
 *Max tightening torque for screw terminal M5: 3Nm, M6: 4Nm. Max torque for bolt mounting M12: 12.5Nm.
 *Screws, Bracket and cap nut will be delivered separately. See "Accessories" (page 104,105) for shape and dimensions.

Part Number System (Ex: 400v3300μF)



*See page 105 for detailed dimensions of terminals.

Ripple Current Coefficient

Rated Voltage(V)	Frequency(Hz)				
	50/60	120	300	1k	>10k
10~50	0.95	1.00	1.04	1.10	1.15
63~100	0.95	1.00	1.06	1.16	1.30
160~500	0.80	1.00	1.10	1.25	1.50

Ambient Temp (°C)	40	60	70	85
Coefficient	2.70	2.00	1.70	1.00

The useful life can be prolonged by operating capacitor at loads below the rated values (e.g. lower operating voltage, Rms ripple current or ambient temperature) and by appropriate cooling measures.
 It is advisable not to apply a ripple current exceeding the rated ripple current without any cooling measures as this will shorten capacitor's life.

Ratings for CD 135 BP Series

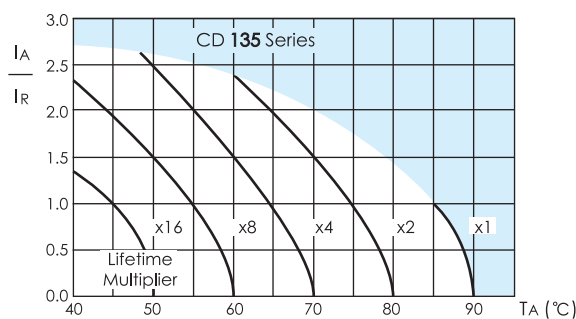
U _r (Surge Voltage) Code	Rated Capaci- tance	Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	-	(mΩ)	(Arms)	(mm)	-	
160 (200) 2C	3300	0.25	31	5.2	36×121	ECG2CBP332MA121 □□	
	4700	0.25	21	5.9	51×75	ECG2CBP472MC075 □□	
	5600	0.25	19	7.0	51×96	ECG2CBP562MC096 □□	
	6800	0.25	16	7.8	51×96	ECG2CBP682MC096 □□	
	10000	0.25	13	0.4	64×96	ECG2CBP103MD096 □□	
	12000	0.25	10	1.6	51×120	ECG2CBP123MC120 □□	
	15000	0.25	9	4.3	64×130	ECG2CBP153MD130 □□	
	18000	0.25	8	5.6	64×130	ECG2CBP183MD130 □□	
	22000	0.25	6	18.3	77×130	ECG2CBP223MC130 □□	
	33000	0.25	4	23.8	90×131	ECG2CBP333MF131 □□	
	39000	0.25	2	27.9	90×157	ECG2CBP393MF157 □□	
	200 (250) 2D	2200	0.25	38	3.9	36×100	ECG2DBP222MA100 □□
		3300	0.25	24	4.9	51×75	ECG2DBP332MC075 □□
		4700	0.25	20	6.4	51×96	ECG2DBP472MC096 □□
5600		0.25	18	7.6	51×115	ECG2DBP562MC115 □□	
6800		0.25	14	8.8	51×130	ECG2DBP682MC130 □□	
8200		0.25	11	9.4	64×96	ECG2DBP822MD096 □□	
10000		0.25	9	10.4	64×96	ECG2DBP103MD096 □□	
15000		0.25	7	14.4	77×96	ECG2DBP153ME096 □□	
18000		0.25	6	16.5	77×130	ECG2DBP183ME130 □□	
22000		0.25	4	19.6	77×155	ECG2DBP223ME155 □□	
33000		0.25	3	25.3	90×157	ECG2DBP333MF157 □□	
250 (300) 2E		1500	0.25	49	3.2	36×100	ECG2EBP152MA100 □□
		2200	0.25	33	4.0	51×75	ECG2EBP222MC075 □□
		3300	0.25	23	5.4	51×96	ECG2EBP332MC096 □□
	4700	0.25	17	7.1	64×96	ECG2EBP472MD096 □□	
	6800	0.25	12	9.1	64×115	ECG2EBP682MD115 □□	
	8200	0.25	11	10.0	64×115	ECG2EBP822MD115 □□	
	10000	0.25	11	11.7	64×130	ECG2EBP103MD130 □□	
	15000	0.25	7	15.1	77×130	ECG2EBP153ME130 □□	
	18000	0.25	6	17.7	77×155	ECG2EBP183ME155 □□	
	22000	0.25	3	20.9	90×157	ECG2EBP223MF157 □□	
350 (400) 2V	470	0.2	228	2.2	36×83	ECG2VBP471MA083 □□	
	680	0.2	152	2.6	36×83	ECG2VBP681MA083 □□	
	1000	0.2	104	3.4	36×100	ECG2VBP102MA100 □□	
	1500	0.2	72	4.3	51×75	ECG2VBP152MC075 □□	
	1800	0.2	58	5.1	51×96	ECG2VBP182MC096 □□	
	2200	0.2	48	5.7	51×96	ECG2VBP222MC096 □□	
	2700	0.2	39	7.1	51×130	ECG2VBP272MC130 □□	
	3300	0.2	32	7.9	51×130	ECG2VBP332MC130 □□	
	3900	0.2	28	9.0	64×115	ECG2VBP392MD115 □□	
	4700	0.2	25	10.3	64×130	ECG2VBP472MD130 □□	
	5600	0.2	22	11.4	77×115	ECG2VBP562ME115 □□	
	6800	0.2	17	13.1	77×130	ECG2VBP682ME130 □□	
	8200	0.2	14	15.4	77×155	ECG2VBP822ME155 □□	
	10000	0.2	12	18.1	90×157	ECG2VBP103MF157 □□	
400 (450) 2G	12000	0.2	10	20.0	90×157	ECG2VBP123MF157 □□	
	15000	0.2	8	24.5	90×196	ECG2VBP153MF196 □□	
	18000	0.2	6	28.8	90×236	ECG2VBP183MF236 □□	
	470	0.2	178	2.2	36×83	ECG2GBP471MA083 □□	
	680	0.2	119	2.8	36×100	ECG2GBP681MA100 □□	
	1000	0.2	82	3.5	51×75	ECG2GBP102MC075 □□	
	1200	0.2	68	3.8	51×75	ECG2GBP122MC075 □□	
	1500	0.2	58	4.7	51×96	ECG2GBP152MC096 □□	
	1800	0.2	47	5.2	51×96	ECG2GBP182MC096 □□	
	2200	0.2	35	6.4	51×120	ECG2GBP222MC120 □□	
	2700	0.2	33	7.0	64×96	ECG2GBP272MD096 □□	
	3300	0.2	31	8.2	64×115	ECG2GBP332MD115 □□	

U _r (Surge Voltage) Code	Rated Capaci- tance	Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD x L	P/N
(V)	(μF)	-	(mΩ)	(Arms)	(mm)	-
400 (450) 2G	3900	0.2	25	9.4	64×130	ECG2GBP392MD130□□
	4700	0.2	24	10.4	77×115	ECG2GBP472ME115□□
	5600	0.2	19	11.9	77×130	ECG2GBP562ME130□□
	6800	0.2	16	14.1	77×155	ECG2GBP682ME155□□
	8200	0.2	14	16.4	90×157	ECG2GBP822MF157□□
	10000	0.2	11	18.3	90×157	ECG2GBP103MF157□□
	12000	0.2	10	21.8	90×196	ECG2GBP123MF196□□
450 (500) 2W	15000	0.2	8	26.3	90×236	ECG2GBP153MF236□□
	470	0.2	200	2.2	36×83	ECG2WBP471MA083□□
	680	0.2	140	2.8	36×100	ECG2WBP681MA100□□
	820	0.2	96	3.2	51×75	ECG2WBP821MC075□□
	1000	0.2	82	3.5	51×75	ECG2WBP102MC075□□
	1200	0.2	72	4.2	51×96	ECG2WBP122MC096□□
	1500	0.2	58	5.1	51×115	ECG2WBP152MC115□□
	1800	0.2	46	5.9	51×130	ECG2WBP182MC130□□
	2200	0.2	33	6.3	64×96	ECG2WBP222MD096□□
	2700	0.2	32	7.5	64×115	ECG2WBP272MD115□□
	3300	0.2	30	8.7	64×130	ECG2WBP332MD130□□
	3900	0.2	29	9.5	77×115	ECG2WBP392ME115□□
	4700	0.2	24	10.9	77×130	ECG2WBP472ME130□□
	5600	0.2	16	12.8	77×155	ECG2WBP562ME155□□
6800	0.2	14	15.0	90×157	ECG2WBP682MF157□□	
8200	0.2	12	16.5	90×157	ECG2WBP822MF157□□	
10000	0.2	10	20.0	90×196	ECG2WBP103MF196□□	
500 (550) 2H	12000	0.2	8	23.6	90×236	ECG2WBP123MF236□□
	1000	0.25	85	4.6	51×115	ECG2HBP102MC115□□
	1500	0.25	60	5.7	64×96	ECG2HBP152MD096□□
	2200	0.25	41	6.9	64×130	ECG2HBP222MD130□□
	2700	0.25	36	8.1	77×115	ECG2HBP272ME115□□
	3300	0.25	32	9.6	77×130	ECG2HBP332ME130□□
	3900	0.25	30	10.8	77×130	ECG2HBP392ME130□□
	4700	0.25	27	12.1	77×155	ECG2HBP472ME155□□
	5600	0.25	21	13.8	90×157	ECG2HBP562MF157□□
	6800	0.25	18	15.8	90×171	ECG2HBP682MF171□□
8200	0.25	14	17.2	77×220	ECG2HBP822ME220□□	
10000	0.25	10	22.1	90×236	ECG2HBP103MF236□□	

Mounting code(" B" for bolt mounting, "Y/I/N" for bracket mounting) □
Terminal options(A,B,C see "Dimensions" for details.) □

Customer products are available on request.

Lifetime Diagram



I_A = Actual ripple current at 120Hz;
I_r = Rated ripple current at 120Hz, 85°C;
T_A = Ambient temperature