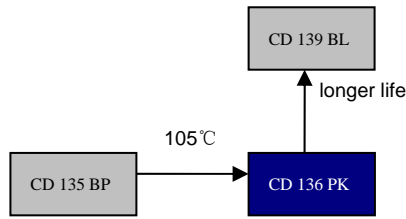


2000h at 105°C

- Features
 - Standard at 105°C
 - RoHS Compliant
- Applications
 - Professional Inverters and Power Supplies

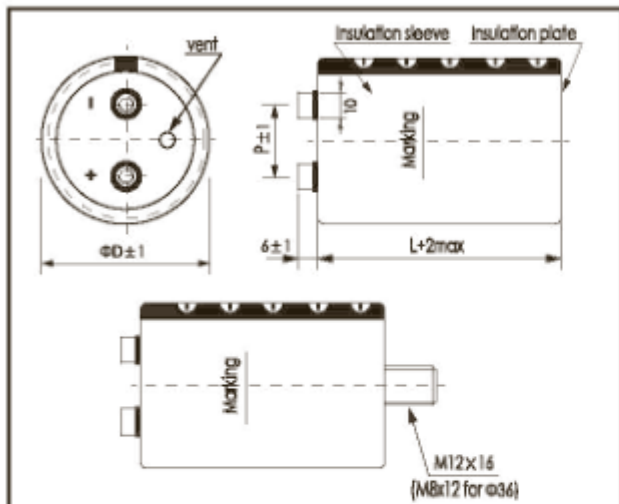


Items	Characteristics	
Operating Temperature Range(°C)	-40 ~ +105	-25~+105
Voltage Range (V)	25~100	160~450
Capacitance Range(μF)	220~33000	
Capacitance Tolerance (20°C,120Hz)	±20%	
Leakage Current (μA)	After 5 minutes at 20°C application of rated voltage, leakage current is not more than 0.01CV or 5mA, 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
Life Time	>4000h	>200000h	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 105°C	U_R $1.2 \times I_R$ 40°C	U_R I_R 105°C	U_R $I_R = 0$ 105°C	$U_R = 0$ $I_R = 0$ 105°C
					After test: U_R to be applied for 60min>24h before measurement

Dimensions

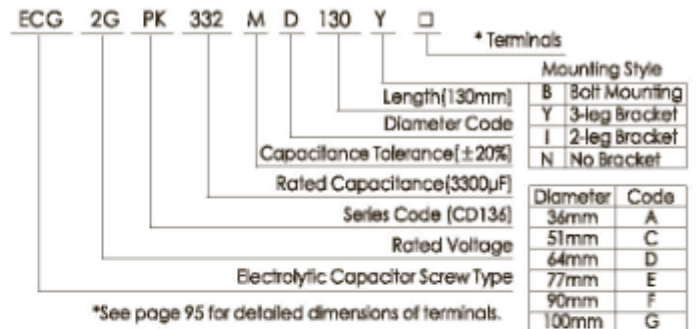
mm



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: 6Nm. Max torque for bolt mounting M12: 12.5Nm.
 *Screws, Bracket and cap nut will be delivered separately. See "Accessories" (page 94,95) for shape and dimensions.

Part Number System (Ex: 400v3300μF)



Ripple Current Coefficient

Rated Voltage(V)	Frequency(Hz)				
	50/60	120	300	1K	>10k
25~100	0.95	1.00	1.04	1.10	1.15
160~250	0.90	1.00	1.08	1.15	1.20
350~450	0.80	1.00	1.18	1.35	1.40

Coefficient	Ambient Temp(°C)				
	40	55	70	85	105
	25~100V	4.9	3.9	3.0	1.8
160~250V	3.8	3.3	2.5	2.0	1.0
350~450V	2.44	2.28	2.12	2.0	1.0

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.

CD 136 PK SERIES



Ratings for CD 136 PK Series

U _r (Surge Voltage) Code	Rated Capacitance	Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size Φ D x L	P/N
(v)	(μF)	-	(mΩ)	(Arms)	(mm)	-
25 (32) 1E	10000	0.35	25	2.9	36X53	ECG1EPK103MA053□□
	15000	0.35	20	4.2	36X83	ECG1EPK153MA063□□
	22000	0.40	13	5.1	36X83	ECG1EPK223MA063□□
	33000	0.40	10	6.3	36X100	ECG1EPK333MA100□□
	47000	0.40	7	8	51X75	ECG1EPK473MC075□□
	68000	0.50	6	10	51X115	ECG1EPK683MC115□□
	100000	0.60	5	11.3	64X96	ECG1EPK104MD096□□
	150000	0.80	4	12.9	64X115	ECG1EPK154MD115□□
	220000	1.00	3	14.8	77X115	ECG1EPK224ME115□□
330000	1.00	2	19.9	90X131	ECG1EPK334MF131□□	
35 (44) 1V	6800	0.30	25	2.6	36X53	ECG1VPK682MA053□□
	10000	0.30	20	3.7	36X83	ECG1VPK103MAC83□□
	15000	0.30	13	4.5	36X83	ECG1VPK153MAC83□□
	22000	0.35	10	5.5	36X100	ECG1VPK223MA100□□
	33000	0.40	7	6.7	51X75	ECG1VPK333MC075□□
	47000	0.45	6	8.1	51X96	ECG1VPK473MC096□□
	68000	0.50	5	10	51X115	ECG1VPK683MC115□□
	100000	0.60	4	12.1	64X115	ECG1VPK104MD115□□
	150000	0.70	3	13.8	77X115	ECG1VPK154ME115□□
220000	0.70	2	17.6	90X131	ECG1VPK224MF131□□	
50 (63) 1H	3300	0.20	50	2.2	36X53	ECG1HPK332MA053□□
	4700	0.25	36	3.3	36X53	ECG1HPK472MA053□□
	6800	0.25	32	3.4	36X83	ECG1HPK682MA083□□
	10000	0.25	22	4.1	36X83	ECG1HPK103MA083□□
	15000	0.30	14	4.9	36X100	ECG1HPK153MA100□□
	22000	0.35	10	5.9	51X75	ECG1HPK223MC075□□
	33000	0.40	7	7.8	51X115	ECG1HPK333MC115□□
	47000	0.40	6	9.5	64X96	ECG1HPK473MD096□□
	68000	0.45	5	11.6	64X115	ECG1HPK683MD115□□
100000	0.50	4	14.1	77X115	ECG1HPK104ME115□□	
150000	0.50	3	18.9	90X131	ECG1HPK154MF131□□	
63 (79) 1J	2200	0.15	70	2.1	36X53	ECG1JPK222MAD53□□
	3300	0.20	50	2.2	36X53	ECG1JPK332MAD53□□
	4700	0.20	36	3.1	36X83	ECG1JPK472MAD83□□
	6800	0.20	25	3.7	36X83	ECG1JPK682MAD83□□
	10000	0.25	20	4.4	36X100	ECG1JPK103MA100□□
	15000	0.25	14	5.7	51X75	ECG1JPK153MC075□□
	22000	0.30	10	6.8	51X96	ECG1JPK223MC096□□
	33000	0.30	7	9.2	64X96	ECG1JPK333MD096□□
	47000	0.35	6	10.9	64X115	ECG1JPK473MD115□□
68000	0.40	5	13	77X115	ECG1JPK683ME115□□	
100000	0.40	4	17.2	90X131	ECG1JPK104MF131□□	
80 (100) 1K	2200	0.15	57	2.1	36X53	ECG1KPK222MA053□□
	3300	0.15	38	3	36X83	ECG1KPK332MA063□□
	4700	0.15	27	3.6	36X83	ECG1KPK472MAC83□□
	6800	0.20	19	4	36X100	ECG1KPK682MA100□□
	10000	0.20	17	5.2	51X75	ECG1KPK103MC075□□
	15000	0.25	11	6.2	51X96	ECG1KPK153MC096□□
	22000	0.25	8	8.2	64X96	ECG1KPK223MD096□□
	33000	0.30	7	9.7	77X96	ECG1KPK333ME096□□
	47000	0.30	6	12.5	77X115	ECG1KPK473ME115□□
68000	0.30	5	16.4	90X131	ECG1KPK683MF131□□	
100 (125) 2A	1000	0.15	70	1.4	36X53	ECG2APK102MA053□□
	1500	0.15	55	1.7	36X53	ECG2APK152MA053□□
	2200	0.15	38	2.5	36X83	ECG2APK222MA083□□
	3300	0.15	25	3	36X83	ECG2APK332MA083□□
	4700	0.15	21	3.9	36X100	ECG2APK472MA100□□
	6800	0.15	19	5	51X75	ECG2APK682MC075□□
	10000	0.15	13	6.5	51X96	ECG2APK103MC096□□
	15000	0.20	9	7.6	64X96	ECG2APK153MD096□□
	22000	0.20	7	9.7	77X96	ECG2APK223ME096□□
33000	0.25	6	11.8	77X130	ECG2APK333ME130□□	
47000	0.25	5	15	90X131	ECG2APK473MF131□□	

U _r (Surge Voltage) Code	Rated Capacitance	Dissipation Factor 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 105°C, 120Hz	Size Φ D x L	P/N
(v)	(μF)	-	(mΩ)	(Arms)	(mm)	-
160 (200) 2C	470	0.15	265	1	36X53	ECG2CPK471MA053□□
	680	0.15	186	1.1	36X53	ECG2CPK681MA053□□
	1000	0.15	125	1.7	36X83	ECG2CPK102MA083□□
	1500	0.15	85	2	36X83	ECG2CPK152MA083□□
	2200	0.15	55	2.7	36X100	ECG2CPK222MA100□□
	3300	0.15	38	3.5	51X83	ECG2CPK332MC083□□
	4700	0.15	35	4.4	51X96	ECG2CPK472MC096□□
	6800	0.15	25	5.9	64X96	ECG2CPK682MD096□□
	10000	0.15	15	7.6	77X96	ECG2CPK103ME096□□
	15000	0.15	11	10.3	77X130	ECG2CPK153ME130□□
	22000	0.15	6	13.2	90X131	ECG2CPK223MF131□□
	330	0.15	375	0.8	36X53	ECG2DPK331MA053□□
	470	0.15	262	1	36X53	ECG2DPK471MA053□□
	680	0.15	180	1.1	36X53	ECG2DPK681MA053□□
	1000	0.15	125	1.7	36X83	ECG2DPK102MA083□□
200 (250) 2D	1500	0.15	75	2.2	36X100	ECG2DPK152MA100□□
	2200	0.15	50	2.8	51X75	ECG2DPK222MC075□□
	3300	0.15	36	3.7	51X96	ECG2DPK332MC096□□
	4700	0.15	24	4.9	64X96	ECG2DPK472MD096□□
	6800	0.15	16	6.3	64X115	ECG2DPK682MD115□□
	10000	0.15	12	8.1	77X115	ECG2DPK103ME115□□
	15000	0.15	6	10.9	90X131	ECG2DPK153MF131□□
	330	0.15	160	0.8	36X53	ECG2EPK331MA053□□
	470	0.15	120	1	36X53	ECG2EPK471MA053□□
	680	0.15	85	1.4	36X83	ECG2EPK681MA083□□
	1000	0.15	55	1.9	36X100	ECG2EPK102MA100□□
	1500	0.15	40	2.3	51X75	ECG2EPK152MC075□□
	2200	0.15	28	3.1	51X96	ECG2EPK222MC096□□
	3300	0.15	20	4.2	64X96	ECG2EPK332MD096□□
	4700	0.15	15	5.4	64X115	ECG2EPK472MD115□□
250 (300) 2E	6800	0.15	10	6.9	64X115	ECG2EPK682MD115□□
	10000	0.15	8	9.3	77X155	ECG2EPK103ME155□□
	15000	0.15	6	12.2	90X157	ECG2EPK153MF157□□
	1000	0.15	82	2.5	51X75	ECG2GPK102MC075□□
	1200	0.15	70	3	51X96	ECG2GPK122MC096□□
	1500	0.15	49	3.6	51X115	ECG2GPK152MC115□□
	1800	0.15	39	4.1	51X130	ECG2GPK182MC130□□
	2200	0.15	30	4.5	64X96	ECG2GPK222MD096□□
	2700	0.15	22	5.3	64X115	ECG2GPK272MD115□□
	3300	0.15	20	6.2	64X130	ECG2GPK332MD130□□
	3900	0.15	18	7.2	64X155	ECG2GPK392MD155□□
	3900	0.15	18	6.8	77X115	ECG2GPK392ME115□□
	4700	0.15	13	8.7	64X195	ECG2GPK472MD195□□
	4700	0.15	13	7.8	77X130	ECG2GPK472ME130□□
	400 (450) 2G	5600	0.15	12	9.6	64X195
5600		0.15	12	9.2	77X155	ECG2GPK562ME155□□
6800		0.15	11	10.7	90X157	ECG2GPK682MF157□□
8200		0.15	10	11.8	90X157	ECG2GPK822MF157□□
10000		0.15	9	14.1	90X196	ECG2GPK103MF196□□
220		0.15	415	1.1	36X53	ECG2WPK221MA053□□
330		0.15	277	1.5	36X100	ECG2WPK331MA100□□
470		0.15	195	2.1	51X83	ECG2WPK471MC083□□
680		0.15	135	2.7	51X96	ECG2WPK681MC096□□
1000		0.15	90	4.2	51X100	ECG2WPK102MC100□□
1500		0.15	54	5.7	51X130	ECG2WPK152MC130□□
2200		0.15	33	7.3	64X115	ECG2WPK222MD115□□
3300		0.15	22	10.1	77X130	ECG2WPK332ME130□□
4700		0.15	15	12.6	77X155	ECG2WPK472ME155□□
5600		0.15	11	15.8	90X157	ECG2WPK562MF157□□

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.