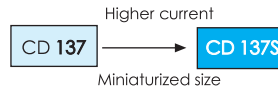


5000h at 85°C

- Features
 - Extremely compact
 - High ripple current & High Reliability
 - RoHS Compliant
- Applications
 - Higher Currents for High Professional Power Application and Inverters



Specifications

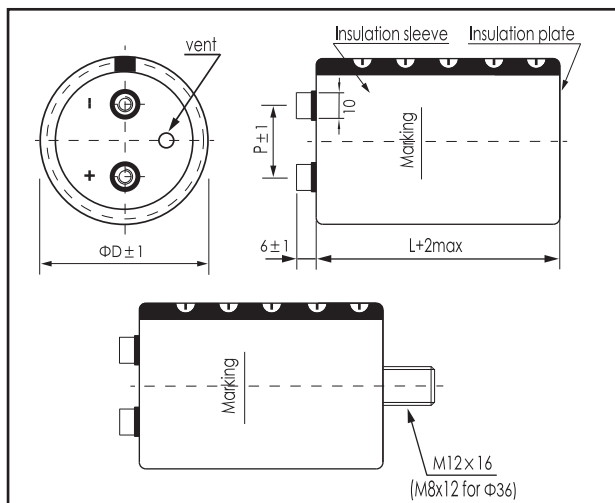
Items	Characteristics
Operating Temperature Range	-40 ~ +85 °C
Rated Voltage U_R	350 ~ 500V _{dc}
Capacitance Range	1000 ~ 22000 μ F
Capacitance Tolerance	$\pm 20\%$ (M) (at 20°C, 120Hz)
Leakage Current I_L	$I_L=0.01C_R U_R$ (μ A) or 5mA, whichever is smaller. (C_R : Nominal Capacitance, in μ F) (at 20°C, 5minutes)
Dissipation Factor $\tan \delta$	Less than 0.15 (at 20°C, 120Hz)
Stability at Low Temperature	$C(-25^\circ\text{C})/C(+20^\circ\text{C}) \geq 0.7$, $C(-40^\circ\text{C})/C(+20^\circ\text{C}) \geq 0.6$ (at 120Hz)

	Useful Life		Load Life	Endurance Life	Shelf Life
Lifetime	12000h	>150000h	5000h	5000h	1000h
Leakage Current I_L	Not more than specified value		Not more than specified value	Not more than specified value	Not more than specified value
Capacitance Change ΔC	Within $\pm 20\%$ of initial value		Within $\pm 15\%$ of initial value	Within $\pm 10\%$ of initial value	Within $\pm 20\%$ of initial value
Dissipation Factor $\tan \delta$	Not more than 200% of specified value		Not more than 175% of specified value	Not more than 130% of specified value	Not more than 200% of specified value
Condition:	U_R I_R 85°C	U_R $1.4 \times I_R$ 40°C	U_R I_R 85°C	U_R 85°C	85°C

*Shelf Life test: U_R to be applied for 60min, >24h before measurement

Dimensions

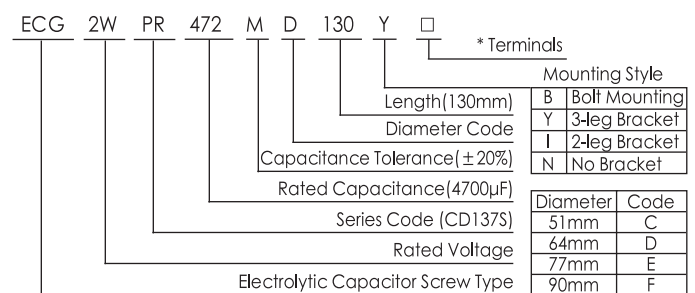
mm



ΦD /mm	51	64	77	90
P/mm	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" for shape and dimensions.

Part Number System (Ex: 450v4700 μ F)



Ripple Current Coefficient

Frequency (Hz)	50/60	120	300	1k	>10k
Coefficient	0.80	1.00	1.18	1.30	1.40

Ambient Temp (°C)	40	60	70	85
Coefficient	2.24	1.81	1.56	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.

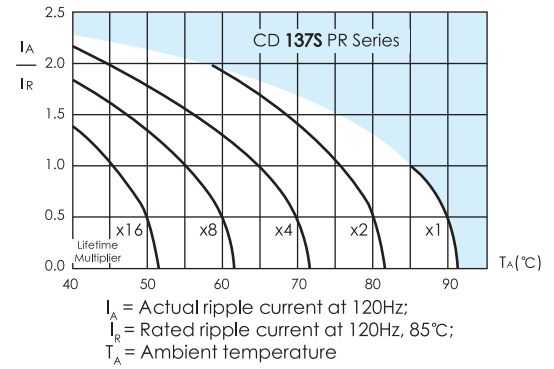
CD 137S PR SERIES



Ratings for CD 137S PR Series

U_r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Typ ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD x L	P/N	
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)		
350 (400) 2V	2200	56	28	8.38	51 × 80	ECG2VPR222MC080 □□	
	2700	46	23	9.90	51 × 96	ECG2VPR272MC096 □□	
	3300	40	20	11.0	51 × 105	ECG2VPR332MC105 □□	
		40	20	11.4	64 × 80	ECG2VPR332MD080 □□	
	3900	34	17	12.7	51 × 117	ECG2VPR392MC117 □□	
		34	17	13.2	64 × 96	ECG2VPR392MD096 □□	
	4700	28	14	14.4	64 × 96	ECG2VPR472MD096 □□	
		24	12	16.8	64 × 115	ECG2VPR562MD115 □□	
	5600	24	12	17.2	77 × 96	ECG2VPR562ME096 □□	
		20	10	18.8	64 × 130	ECG2VPR682MD130 □□	
	6800	20	10	19.5	77 × 105	ECG2VPR682ME105 □□	
		18	9	22.3	77 × 117	ECG2VPR822ME115 □□	
	10000	14	7	28.3	90 × 115	ECG2VPR103MF115 □□	
	12000	12	6	29.8	77 × 155	ECG2VPR123ME155 □□	
		12	6	32.0	90 × 130	ECG2VPR123MF130 □□	
	15000	10	5	36.0	90 × 145	ECG2VPR153MF145 □□	
	18000	9	4.5	40.4	90 × 171	ECG2VPR183MF171 □□	
	22000	7	3.5	46.9	90 × 196	ECG2VPR223MF196 □□	
	400 (450) 2G	1800	68	34	7.58	51 × 80	ECG2GPR182MC080 □□
		2200	56	28	9.05	51 × 96	ECG2GPR222MC096 □□
2700		46	23	10.4	51 × 105	ECG2GPR272MC105 □□	
		46	23	10.5	64 × 80	ECG2GPR272MD080 □□	
3300		38	19	12.5	51 × 130	ECG2GPR332MC130 □□	
		38	19	12.4	64 × 96	ECG2GPR332MD096 □□	
3900		32	16	13.3	64 × 96	ECG2GPR392MD096 □□	
		28	14	15.2	64 × 115	ECG2GPR472MD115 □□	
4700		28	14	16.3	77 × 96	ECG2GPR472ME096 □□	
		24	12	17.1	64 × 130	ECG2GPR562MD130 □□	
5600		24	12	18.2	77 × 105	ECG2GPR562ME100 □□	
		20	10	20.6	77 × 117	ECG2GPR682ME115 □□	
8200		18	9	23.3	77 × 130	ECG2GPR822ME130 □□	
		14	7	27.0	77 × 155	ECG2GPR103ME155 □□	
10000		14	7	29.1	90 × 130	ECG2GPR103MF130 □□	
		12	6	31.5	77 × 190	ECG2GPR123ME190 □□	
12000		12	6	32.4	90 × 145	ECG2GPR123MF145 □□	
		10	5	37.2	77 × 220	ECG2GPR153ME220 □□	
15000		10	5	38.3	90 × 170	ECG2GPR153MF170 □□	
		9	4.5	42.4	90 × 196	ECG2GPR183MF196 □□	
450 (500) 2W	1500	112	56	7.10	51 × 80	ECG2WPR152MC080 □□	
	1800	94	47	8.03	51 × 96	ECG2WPR182MC096 □□	
	2200	78	39	9.22	51 × 105	ECG2WPR222MC105 □□	
		78	39	9.70	64 × 80	ECG2WPR222MD080 □□	
	2700	66	33	10.5	51 × 117	ECG2WPR272MC117 □□	
		66	33	10.9	64 × 96	ECG2WPR272MD096 □□	
	3300	56	28	12.1	64 × 100	ECG2WPR332MD100 □□	
		48	24	13.9	64 × 115	ECG2WPR392MD115 □□	
	3900	48	24	15.2	77 × 96	ECG2WPR392ME096 □□	
		40	20	15.5	64 × 130	ECG2WPR472MD130 □□	
	4700	40	20	16.9	77 × 105	ECG2WPR472ME105 □□	
		34	17	18.2	64 × 155	ECG2WPR562MD155 □□	
	5600	34	17	19.4	77 × 117	ECG2WPR562ME115 □□	
		28	14	21.5	77 × 130	ECG2WPR682ME130 □□	
	6800	28	14	24.3	90 × 115	ECG2WPR682MF115 □□	
		24	12	24.5	77 × 155	ECG2WPR822ME155 □□	
	8200	24	12	27.5	90 × 130	ECG2WPR822MF130 □□	
		20	10	29.2	77 × 190	ECG2WPR103ME190 □□	
	10000	20	10	30.3	90 × 145	ECG2WPR103MF145 □□	
		17	8.5	33.4	77 × 220	ECG2WPR123ME220 □□	
12000	17	8.5	34.6	90 × 170	ECG2WPR123MF170 □□		
	15000	14	6.8	39.8	90 × 196	ECG2WPR153MF196 □□	
500 (550) 2H	1000	176	88	6.14	51 × 80	ECG2HPR102MC080 □□	
	1200	146	73	7.00	51 × 92	ECG2HPR122MC092 □□	
	1500	120	60	8.06	51 × 105	ECG2HPR152MC105 □□	
		120	60	8.15	64 × 80	ECG2HPR152MD080 □□	
	1800	102	51	9.25	51 × 117	ECG2HPR182MC117 □□	
		86	43	10.6	64 × 100	ECG2HPR222MD100 □□	
	2200	86	43	11.0	77 × 85	ECG2HPR222ME085 □□	
		72	36	12.2	64 × 115	ECG2HPR272MD115 □□	
	3300	60	30	14.1	77 × 105	ECG2HPR332ME105 □□	
		52	26	16.5	77 × 130	ECG2HPR392ME130 □□	
	4700	42	21	18.8	77 × 143	ECG2HPR472ME143 □□	
		42	21	19.2	90 × 115	ECG2HPR472MF115 □□	
	5600	38	19	21.4	90 × 130	ECG2HPR562MF130 □□	
	6800	32	16	24.6	90 × 145	ECG2HPR682MF145 □□	
	8200	26	13	28.5	90 × 170	ECG2HPR822MF170 □□	
	10000	22	11	32.9	90 × 196	ECG2HPR103MF196 □□	
	12000	20	10	34.7	90 × 220	ECG2HPR123MF220 □□	

Lifetime Diagram



Customer products are available on request.