CD296 Series

- Long life snap-in series
- Endurance: 5000 hours at 105℃
- Applicable to SMP and frequency converters
- Sleeve color: Gold Print in Black Sleeve

Item	Characteristics	
Operating Temperature Range(℃)	-40~+105	-25~+105
Voltage Range(V)	10~100	160~450
Capacitance Range (μF)	68~56000	
Capacitance Tolerance (20℃,120Hz)	±20%	
Leakage Current (μA)	After 5 minutes at 20℃ application of rated voltage,leakage current is not more than 0.01 CV or 1.5mA,whichever is smaller. C:Nominal Capacitance (μF) V:Rated Voltage (V)	

Dissipation Factor (20℃,120Hz)

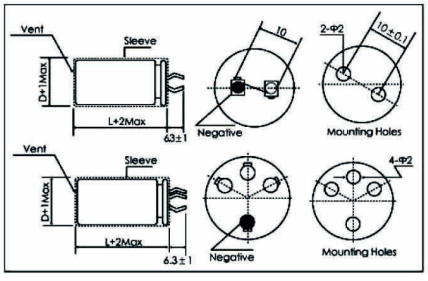
Rated Voltage (V)	10	16	25	35	50	63	80	100	160~250	315~400	450
Tanδ(max)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.20	0.25

Stability at Low Temperature (Impedance Ratio at 120Hz)

Rated Voltage (V)	10~100	160~250	350~450
Z-25℃ / Z+20℃	4	3	8
Z-40℃/Z+20℃	15	-	-

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	7000h	>200000h	5000h	5000h	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 ±20% 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 200% of specified value	Not more than 200% of specified value
Condition: Applied Voltage / Applied Current / Applied Temperature / Failure Rate Level	U_R / I_R / 105℃ / ≤1% Failure Rate	U_R / 1.6×I_R / 40℃ / ≤1% Failure Rate	U_R / I_R / 105℃ / guaranteed	U_R / I_R=0 / 105℃	U_R=0 / I_R=0 / 105℃ / After test: U_R to be applied for 30min >24h before measurement

Dimensions(mm)



Frequency Coefficient

Freq.(HZ) / Voltage(V)	50Hz	120Hz	500Hz	1kHz	≥10kHz
10~100	0.90	1.00	1.05	1.10	1.15
160~250	0.80	1.00	1.20	1.30	1.50
315~450	0.80	1.00	1.20	1.25	1.40

CD296 Series

Ratings

VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
10 (13)	8200	89	62	1.36	22×25
	1000	73	51	1.65	22×30
	12000	61	43	1.85	22×35
		61	43	1.82	25×25
	15000	49	34	2.12	22×40
		49	34	2.11	25×30
		49	34	2.14	30×25
	18000	41	28	2.4	22×45
		41	28	2.32	25×35
	22000	33	23	2.59	25×40
		33	23	2.73	30×30
	27000	27	19	3.01	25×45
		27	19	3.13	30×35
		27	19	3.05	35×30
	33000	22	16	3.43	25×50
		22	16	3.53	30×40
		22	16	3.49	35×35
	39000	19	13	3.78	30×45
		19	13	3.96	35×40
	47000	16	11	4.58	30×50
		16	11	4.6	35×45
	56000	13	9	5.06	35×50
16 (20)	5600	119	83	1.44	22×25
	6800	98	68	1.66	22×30
	8200	81	57	1.67	25×25
	10000	66	46	2.08	22×35
		66	46	2.07	25×30
	12000	55	39	2.36	22×40
		55	39	2.37	25×35
		55	39	2.33	30×25
	15000	44	31	2.69	22×45
		44	31	2.72	25×40
		44	31	2.54	30×30
	18000	37	26	3.06	25×45
		37	26	3.02	30×35
		37	26	3.09	35×30
	22000	30	21	3.39	25×50
		30	21	3.46	30×40
	27000	25	17	3.88	30×45
		25	17	3.85	35×35
	33000	20	14	4.33	30×50
		20	14	4.33	35×40
	39000	17	12	4.96	35×45
	47000	14	10	5.49	35×50
25 (32)	3900	153	107	1.31	22×25
	4700	127	89	1.55	22×30
	5600	107	75	1.77	22×35
		107	75	1.76	25×25
	6800	88	62	2.02	22×40
		88	62	1.88	25×30
	8200	73	51	2.27	22×45
		73	51	2.18	25×35
		73	51	2.19	30×25
	10000	60	42	2.56	22×50
		60	42	2.53	25×40
		60	42	2.38	30×30
	12000	50	35	2.79	25×45
		50	35	2.7	30×35
		50	35	2.76	35×30
	15000	40	28	3.13	30×40
	18000	33	23	3.52	30×45
		33	23	3.5	35×35
	22000	27	19	3.92	30×50
		27	19	3.95	35×40
	27000	22	16	4.72	35×50

Ratings

VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
35 (44)	2700	197	138	1.29	22×25
	3300	161	113	1.54	22×30
	3900	136	95	1.77	22×35
		136	95	1.75	25×25
	4700	113	79	2.01	22×40
		113	79	1.97	25×30
	5600	95	66	2.25	22×45
		95	66	2.18	25×35
		95	66	2.08	30×25
	6800	78	55	2.49	22×50
		78	55	2.45	25×40
		78	55	2.28	30×30
	8200	65	45	2.8	25×45
		65	45	2.69	30×35
	10000	53	37	3.04	30×40
		53	37	2.78	35×30
	12000	44	31	3.38	30×45
		44	31	3.3	35×35
	15000	35	25	3.38	35×40
	18000	30	21	4.4	35×45
50 (63)	1500	310	217	1.21	22×25
	2200	211	148	1.52	22×30
		211	148	1.46	25×25
	2700	172	120	1.77	22×35
		172	120	176	25×30
	3300	141	99	192	22×40
		141	99	1.92	30×25
	3900	119	83	2.27	22×45
		119	83	2.2	25×35
		119	83	2.19	30×30
	4700	99	69	2.43	25×40
	5600	83	58	2.72	25×45
		83	58	2.58	30×35
		83	58	2.35	35×30
	6800	68	48	3.01	30×40
		68	48	2.91	35×35
	8200	57	40	3.63	30×50
		57	40	3.36	35×40
	10000	46	33	3.79	35×45
	12000	39	27	4.06	35×50
63 (79)	1000	398	279	1.1	22×25
	1500	265	186	1.41	22×30
		265	186	1.38	25×25
	1800	221	155	1.62	22×35
		221	155	1.63	25×30
	2200	181	127	1.85	22×40
		181	127	1.80	30×25
	2700	147	103	2.1	22×45
		147	103	2.03	25×35
		147	103	2.01	30×30
	3300	121	84	2.33	25×40
	3900	102	72	2.58	25×45
		102	72	2.46	30×35
		102	72	2.31	35×30
	4700	85	59	2.82	30×40
		85	59	2.77	35×35
	5600	71	50	3.22	30×45
		71	50	3.2	35×40
	6800	59	41	3.61	35×45
	8200	49	34	3.94	35×50
80 (100)	820	405	283	1.09	22×25
	1000	332	232	1.29	22×30
	1200	277	194	1.48	22×35
		277	194	1.38	25×25
	1500	221	155	1.7	22×40
		221	155	1.74	25×30
		221	155	1.75	30×25
	1800	184	129	1.91	22×45
		184	129	1.86	25×35
	2200	151	106	2.22	25×45
		151	106	2.02	30×30
	2700	123	86	2.38	30×35
		123	86	2.45	35×30
	3300	101	70	2.69	30×40
		101	70	2.6	35×35
	3900	85	60	2.94	30×45
		85	60	3	35×40
	4700	71	49	3.44	35×45
	5600	59	42	3.72	35×50

CD296 Series

Ratings

VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
100 (125)	560	474	332	1.01	22×25
	680	390	273	1.19	22×30
	820	324	227	1.33	22×35
		324	227	1.26	25×25
	1000	265	186	1.56	22×40
		265	186	1.52	25×30
		265	186	1.47	30×25
	1200	221	155	1.76	22×45
		221	155	1.76	25×35
		221	155	1.76	30x30
	1500	177	124	2	22×50
		177	124	2.03	25×40
	1800	147	103	2.29	25×45
		147	103	2.19	30×35
		147	103	2.15	35×30
	2200	121	84	2.52	30×40
		121	84	2.48	35×35
	2700	98	69	2.86	30×45
		98	69	2.87	35×40
	3300	80	56	3.25	35×45
	3900	68	48	3.56	35×50
160 (200)	220	905	633	0.63	22×25
	270	737	516	0.76	22×30
	330	603	422	0.9	22×35
		603	422	0.84	25×25
	390	510	357	0.97	25×30
		510	357	1	30×25
	470	424	296	1.11	22×40
		424	296	1.14	25×35
		424	296	1.17	30×30
	560	355	249	1.26	22×45
	680	293	205	1.44	22×50
		293	205	1.43	25×40
		293	205	1.5	30×35
	820	243	170	1.63	25×45
		243	170	1.66	30×40
		243	170	1.63	35×30
	1000	199	139	1.89	30×45
		199	139	1.89	35×35
	1200	166	116	2.16	30×50
		166	116	2.23	35×40
	1500	133	93	2.61	35×45
	1800	111	77	2.97	35×50
180 (225)	220	905	633	0.63	22×25
	270	737	516	0.76	22×30
		737	516	0.76	25×25
	330	603	422	0.9	22×35
		603	422	0.9	25×30
	390	510	357	1.03	22×40
		510	357	1.06	25×35
		510	357	1.02	30×25
	470	424	296	1.17	22×45
		424	296	1.17	30×30
	560	355	249	1.32	22×50
		355	249	1.32	25×40
		355	249	1.33	30×35
	680	293	205	1.51	25×45
		293	205	1.49	35×30
	820	243	170	1.71	25×50
		243	170	1.74	30×40
		243	170	1.75	35×35
	1000	199	139	2.01	30×45
		199	139	2.07	35×40
	1200	166	116	2.25	30×50
		166	116	2.23	35×45
	1500	133	93	2.76	35×50

Ratings

VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
200 (250)	180	1106	774	0.57	22×25
	220	905	633	0.7	22×30
	270	737	516	0.83	22×35
		737	516	0.76	25×25
	330	603	422	0.96	22×40
		603	422	0.9	25×30
	390	510	357	1.06	25×35
		510	357	1.02	30×25
	470	424	296	1.17	22×45
		424	296	1.22	25×40
		424	296	1.17	30×30
	560	355	249	1.39	25×45
		355	249	1.38	30×35
	680	293	205	1.58	25×50
		293	205	1.61	30×40
		293	205	1.49	35×30
	820	243	170	1.85	30×45
		243	170	1.75	35×35
	1000	199	139	2.11	30×50
		199	139	2.07	35×40
	1200	166	116	2.38	35×45
	1500	133	93	2.76	35×50
250 (300)	150	1327	929	0.52	22×25
	180	1106	774	0.64	22×30
		1106	774	0.62	25×25
	220	905	633	0.76	22×35
		905	633	0.76	25×30
	270	737	516	0.88	22×40
		737	516	0.9	25×35
		737	516	0.85	30×25
	330	603	422	1.01	22×45
		603	422	1	30×30
	390	510	357	1.13	22×50
		510	357	1.13	25×40
		510	357	1.15	30×35
	470	424	296	1.29	25×45
		424	296	1.24	35×30
	560	355	249	1.45	25×50
		355	249	1.48	30×40
		355	249	1.49	35×35
	680	293	205	1.71	30×45
		293	205	1.74	35×40
	820	243	170	1.94	30×50
	1000	199	139	2.2	35×45
315 (365)	68	3903	2732	0.32	22×25
	82	3237	2266	0.38	22×30
	100	2654	1858	0.41	25×25
	120	2212	1548	0.48	22×35
		2212	1548	0.49	25×30
	150	1769	1239	0.56	22×40
		1769	1239	0.51	30×25
	180	1474	1032	0.63	22×45
		1474	1032	0.62	25×35
		1474	1032	0.63	30×30
	220	1206	844	0.72	22×50
		1206	844	0.71	25×40
		1206	844	0.74	30×35
	270	983	688	0.81	25×45
		983	688	0.85	30×40
		983	688	0.82	35×30

CD296 Series

Ratings

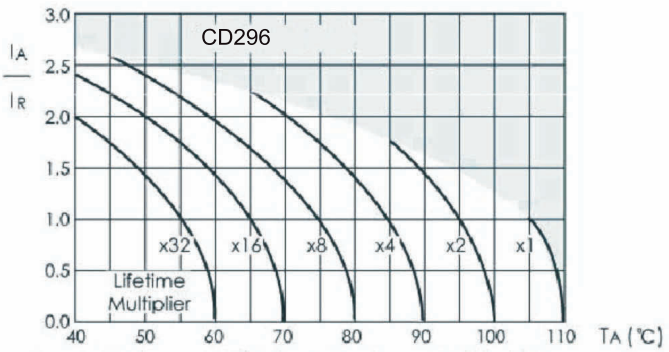
VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
315 (365)	330	804	563	0.92	25×50
		804	563	0.9	35×35
	390	681	476	1.04	30×45
		681	476	1.05	35×40
	470	565	395	1.15	30×50
		565	395	1.18	35×45
	560	474	332	1.34	35×50
350 (400)	68	3903	2732	0.34	22×25
	82	3237	2266	0.4	22×30
	100	2654	1858	0.47	25×25
	120	2212	1548	0.52	22×35
		2212	1548	0.53	25×30
		2212	1548	0.53	30×25
	150	1769	1239	0.59	22×40
		1769	1239	0.6	25×35
	180	1474	1032	0.68	22×45
		1474	1032	0.7	25×40
		1474	1032	0.71	30×30
	220	1206	844	0.78	22×50
		1206	844	0.82	25×45
		1206	844	0.82	30×35
	270	983	688	0.94	25×50
		983	688	0.93	30×40
		983	688	0.9	35×30
	330	804	563	1.05	30×45
		804	563	1.01	35×35
	390	681	476	1.18	30×50
		681	476	1.13	35×40
	470	565	395	1.26	35×45
	560	474	332	1.39	35×50
400 (450)	68	3903	2732	0.38	22×30
	82	3237	2266	0.41	25×25
	100	2654	1858	0.46	22×35
		2654	1858	0.48	25×30
		2654	1858	0.48	30×25
	120	2212	1548	0.53	22×40
		2212	1548	0.55	25×35
		2212	1548	0.56	30×30
	150	1769	1239	0.63	22×50
		1769	1239	0.65	25×40
	180	1474	1032	0.72	25×45
		1474	1032	0.74	30×35
	220	1206	844	0.79	25×50
		1206	844	0.85	30×40
		1206	844	0.89	35×30
	270	983	688	0.98	30×45
		983	688	0.96	35×35
	330	804	563	1.12	30×50
		804	563	1.12	35×40
	390	681	476	1.27	35×45
	470	565	395	1.33	35×50

Ratings

VDC (Surge Voltage)	Rated Capa-citance	Max. ESR 20℃, 120Hz	Typ. ESR 20℃, 120Hz	Rated RIpple Current 105℃, 120Hz	Size φDxL
(V)	(μF)	(mΩ)	(mΩ)	(Arms)	(mm)
450 (500)	68	3903	2732	0.38	22×30
	82	3237	2266	0.44	22×35
		3237	2266	0.45	25×30
		3237	2266	0.46	30×25
	100	2654	1858	0.5	22×40
		2654	1858	0.52	25×35
	120	2212	1548	0.58	22×50
		2212	1548	0.58	25×40
		2212	1548	0.58	30×30
	150	1769	1239	0.66	25×45
		1769	1239	0.68	30×35
	180	1474	1032	0.74	25×50
		1474	1032	0.77	30×40
		1474	1032	0.77	35×30
	220	1206	844	0.88	30×45
		1206	844	0.88	35×35
	270	983	688	0.99	30×50
		983	688	1.01	35×40
	330	804	563	1.15	35×45
	390	681	476	1.28	35×50

Customer products are available on request.

Lifetime Diagram



I_A=actual ripple current at 120Hz,I_R=rated ripple current at 120Hz,105℃
Multiplier of Useful Life and ripple current load — as a function of ambient temperature

东莞市创慧电子有限公司
DONGGUAN CHUANGHUI ELECTRONICS CO.,LTD

9. 包装说明Packing instructions：

9.1 先用塑料袋包装，然后再放置于包装箱中，具体包装数量请参照《创慧包装标准》 Pack with plastic bags, and then placed in a carton, please refer to 《Packing Standard》for specific packing quantity.

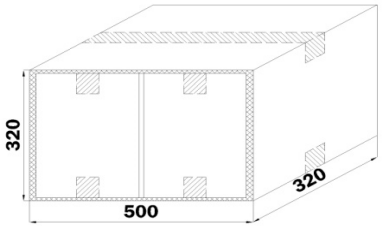
9.2 包装标识：采用中性标签，注明客户名、订单号、料号、产品系列、规格、尺寸、数量、生产日期和生产批号 Label Marking: indicate customer name, purchase number, part number, product series,specifications, size, quantity, production date and lot number, shown as below.

9.3 包装图示 Packing Figure

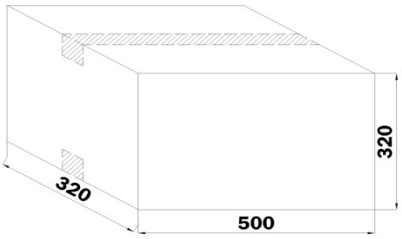
a) 标签Label

CH	T74800		
订单号 P.O	创慧	CH221102053	
料号P/N	CETW-181A-000		
系列series	CD288H	墨绿底金字	PET
规格Spec	400V180uF	±20%	
尺寸 Size	D18X25L	长脚	
数量 Qty	50PCS		

b) 内箱Inner Carton



c) 外箱Outer Carton



10. 料号编码规则 Material number encoding rules：

CD26LF1	2T	M	181	N45	0	T
①系列Series	②电压 Voltage	③容差 Capacitance Tolerance	④容量 Capacitance	⑤尺寸Size	⑥成型 Finishing	⑦胶管Sleeve

①系列 Series	CD110	CD288H	CD288L	CD26G	CD26M	CD26L	CD110L	NP	LL
	CD288S	CD26K	CD26C	CD293	CD294	CD296	CD133	CD134	CD136

②电压V	4	6.3	10	16	25	35	50	63	80	100	120	140	160	180	200	250	315	350	400	420	450	460	500	550
代号Code	OG	OJ	1A	1C	1E	1V	1H	1J	1K	2A	2B	2S	2C	2Z	2D	2E	2F	2V	2G	2J	2W	2T	2H	2L

③容差代码code	J	K	M	W	T	Q	P
容差C.T.	±5%	±10%	±20%	-0%～+20%	-10%～ + 20%	-20%～ + 30%	-15%～+20%

④容量Cap.	0.1	0.22	0.3	0.47	1	2	3.3	4.7	6.8	10	22	33	47	68	100	220	330	3300	…
编码Code	R10	R22	R33	R47	10	2R2	3R3	4R7	6R8	100	220	330	470	680	101	221	331	332	…

⑤尺寸														
直径D	4	5	6	8	10	12.5	13	16	18	20	22	25	30	35
编码Code	C	D	E	F	G	H	K	L	M	N	0	P	Q	R
高度H	5	7	11	12	13	16	18	20	27	25	30	35	45	
编码Code	5	7	11	12	13	16	18	20	27	25	30	35	45	

⑥成型 Finishing	散装 Bulk	编带 Taping P=5.0	编带 Taping P=2.5	剪脚 Cut Lead L = 3.5	K脚 剪脚 L=4.5	S脚 剪脚 L=4.5	卧式 H01=4.0	卧式 H02=4.0	贴片 SMD
编码Code	0	TP5	TP25	C35	K45	S45	H140	H240	S

⑦胶管Sleeve	PVC	PET
编码Code	C	T