C-CON MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

LH CD117H

2000h at 105℃

- Load life of 2000 hours at 105℃
- Low Leakage Current
- Close Tolerance

□□□	LH	□□□	□	□□	DXL
Rated voltage	Series	Rated Capacitance	Capacitance tolerance	Terminal Code	Sleeve Color

Items	Characteristics
Operating Temperature Range (℃)	-40 ~ +105
Capacitance Tolerance (20℃, 120Hz)	±20% or ±10%
Leakage Current (μA)	After 1 minute at 20℃application of rated voltage, leakage current is not more than 0.008CV or 1.0μA, whichever is greater. C: Nominal Capacitance (μF) V: Rated Voltage (V)

Dissipation Factor (20℃, 120Hz)

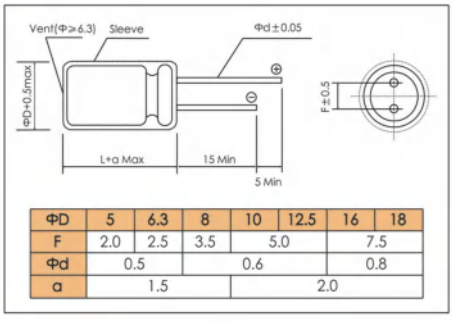
Rated Voltage (V)		6.3	10	16	25	35	50	63	100
Tan δ (max)	≤Φ10×12.5	0.18	0.15	0.12	0.08	0.08	0.08	0.07	0.07
	≥Φ10×16	0.21	0.17	0.14	0.12	0.12	0.1	0.08	0.08

Stability at Low Temperature (Impedance Ratio at 120Hz)

Rated Voltage (V)		6.3	10	16	25	35	50	63	100
Impedance ratio	$Z_{-25℃}/Z_{+20℃}$	4	3	2	1.5				
	$Z_{-40℃}/Z_{+20℃}$	8	6	4		3			

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	3000h	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 ± 15% of initial value	Within ± 15% of initial value	Within ± 15% of initial value
Dissipation Factor	Not more than 300% of specified value		Not more than 150% of specified value	Not more than 150% of specified value	Not more than 150% of specified value
Condition: Applied Voltage Applied Current Applied Temperature	U_R I_R 105℃	U_R 1.2 x I_R 40℃	U_R I_R 105℃	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



ΦD	5	6.3	8	10	12.5	16	18
F	2.0	2.5	3.5	5.0		7.5	
Φd	0.5		0.6			0.8	
a	1.5			2.0			

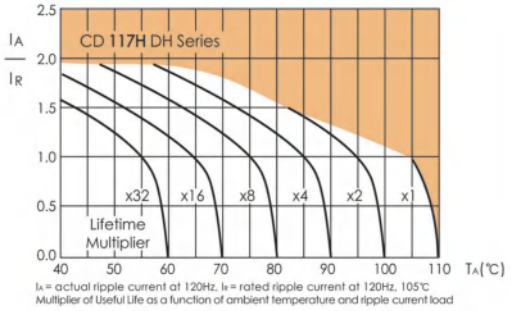
Temperature Coefficient

Temperature(℃)	+70	+85	+105
Coefficient	1.80	1.40	1.00

Frequency Coefficient

Cap (μF) \ Frequency	50~60Hz	120Hz	1kHz	≥10kHz
10 ~ 68	0.75	1.00	1.57	2.10
100 ~ 680	0.80	1.00	1.34	1.50
1000 ~ 10000	0.85	1.00	1.13	1.15

Lifetime Diagram



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

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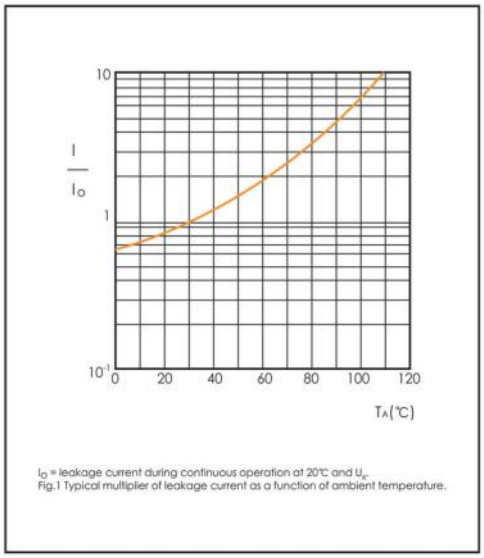
Ratings for CD 117H Series

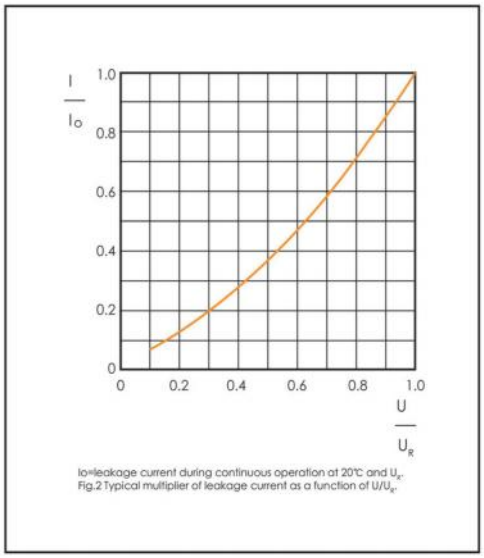
U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 105℃, 120Hz	Size ΦD x L
(V)	(μF)	(Ω)	(mArms)	(mm)
6.3 (7.2) 0J	470	0.51	390	10×12.5
	680	0.41	480	10×16
	1000	0.28	650	10×20
	1500	0.19	910	12.5×25
	2200	0.13	1060	12.5×25
	3300	0.08	1270	16×25
	4700	0.06	1500	16×31.5
	6800	0.04	1760	18×35.5
	10000	0.03	1900	18×40
10 (13) 1A	47	4.23	110	5×11.5
	68	2.93	150	6.3×11.5
	100	1.99	180	6.3×11.5
	150	1.33	250	8×11.5
	220	0.90	310	8×11.5
	330	0.60	400	10×12.5
	470	0.48	530	10×16
	680	0.33	600	10×20
	1000	0.23	810	12.5×20
	1500	0.15	1020	12.5×25
	2200	0.10	1200	16×25
	3300	0.07	1420	16×31.5
	4700	0.05	1650	16×35.5
	6800	0.03	1890	18×35.5
16 (20) 1C	10	15.92	55	5×11.5
	15	10.62	70	5×11.5
	22	7.24	85	5×11.5
	33	4.83	100	5×11.5
	47	3.39	140	6.3×11.5
	68	2.34	160	6.3×11.5
	100	1.59	230	8×11.5
	150	1.06	280	8×11.5
	220	0.72	370	10×12.5
	330	0.56	420	10×16
	470	0.40	550	10×20
	680	0.27	730	12.5×20
	1000	0.19	910	12.5×25
	1500	0.12	1150	16×25
	2200	0.08	1300	16×25
	3300	0.06	1550	16×35.5
	4700	0.04	1820	16×35.5
25 (32) 1E	4.7	22.59	45	5×11.5
	6.8	15.61	55	5×11.5
	10	10.62	70	5×11.5
	15	7.08	85	5×11.5
	22	4.83	100	5×11.5
	33	3.22	140	6.3×11.5
	47	2.26	170	6.3×11.5
	68	1.56	230	8×11.5
	100	1.06	280	8×11.5
	150	0.71	370	10×12.5
	220	0.72	400	10×16
	330	0.48	490	10×20
	470	0.34	600	12.5×20
	680	0.23	810	12.5×25
	1000	0.16	1010	16×25
	1500	0.11	1270	16×31.5
	2200	0.07	1440	16×35.5
	3300	0.05	1720	18×40
35 (44) 1V	15	7.08	85	5×11.5
	22	4.83	110	6.3×11.5
	33	3.22	140	6.3×11.5
	47	2.26	190	8×11.5
	68	1.56	230	8×11.5
	100	1.06	300	10×12.5
	150	1.06	400	10×16
	220	0.72	440	10×20
	330	0.48	550	12.5×20
	470	0.34	680	12.5×25
	680	0.23	840	16×25
	1000	0.16	1100	16×25
	1500	0.11	1390	16×35.5
	2200	0.07	1580	16×35.5

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 105℃, 120Hz	Size ΦD x L
(V)	(μF)	(Ω)	(mArms)	(mm)
50 (63) 1H	0.1	1061.57	1.1	5×11.5
	0.15	707.71	1.6	5×11.5
	0.22	482.53	2.3	5×11.5
	0.33	321.69	3.5	5×11.5
	0.47	225.87	5.0	5×11.5
	0.68	156.11	7.3	5×11.5
	1	106.16	10.7	5×11.5
	1.5	70.77	16	5×11.5
	2.2	48.25	23	5×11.5
	3.3	32.17	40	5×11.5
	4.7	22.59	45	5×11.5
	6.8	15.61	55	5×11.5
	10	10.62	70	5×11.5
	15	7.08	95	6.3×11.5
	22	4.83	110	6.3×11.5
	33	3.22	165	8×11.5
	47	2.26	190	8×11.5
	68	1.56	250	10×12.5
	100	1.33	320	10×16
	150	0.88	420	10×20
	220	0.60	490	12.5×20
	330	0.40	600	12.5×20
	470	0.28	760	16×25
	680	0.20	910	16×25
	1000	0.13	1140	16×31.5
	1500	0.09	1480	18×40
63 (79) 1J	6.8	13.66	59	5×11.5
	10	9.29	75	6.3×11.5
	15	6.19	100	6.3×11.5
	22	4.22	115	8×11.5
	33	2.81	170	8×11.5
	47	1.98	200	10×12.5
	68	1.56	270	10×16
	100	1.06	330	10×20
	150	0.71	450	12.5×20
	220	0.48	550	12.5×20
	330	0.32	710	12.5×25
	470	0.23	850	16×25
	680	0.16	1050	16×31.5
	1000	0.11	1330	18×35.5
100 (125) 2A	0.1	928.87	2.1	5×11.5
	0.15	619.25	3.2	5×11.5
	0.22	422.22	4.7	5×11.5
	0.33	281.48	7.0	5×11.5
	0.47	197.63	10.1	5×11.5
	0.68	136.60	14.5	5×11.5
	1	92.89	19	5×11.5
	1.5	61.92	23	5×11.5
	2.2	42.22	28	5×11.5
	3.3	28.15	45	5×11.5
	4.7	19.76	50	5×11.5
	6.8	13.66	65	6.3×11.5
	10	9.29	90	8×11.5
	15	6.19	110	8×11.5
	22	4.22	136	10×12.5
	33	3.22	180	10×16
	47	2.26	220	10×20
	68	1.56	290	10×20
	100	1.06	370	12.5×20
	150	0.71	470	12.5×25
	220	0.48	580	16×25
	330	0.32	730	16×31.5
	470	0.23	910	16×35.5

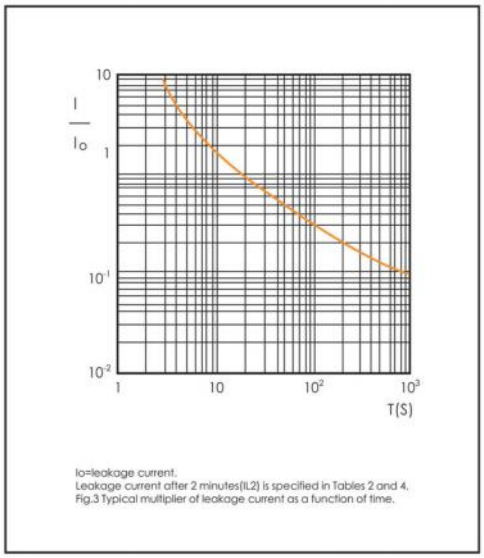
Typical Curves



I_O = leakage current during continuous operation at 20℃ and U_R.
Fig.1 Typical multiplier of leakage current as a function of ambient temperature.



Io=leakage current during continuous operation at 20℃ and U_R.
Fig.2 Typical multiplier of leakage current as a function of U/U_R.



Io=leakage current.
Leakage current after 2 minutes(IL2) is specified in Tables 2 and 4.
Fig.3 Typical multiplier of leakage current as a function of time.

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