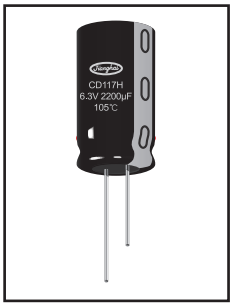
CD 117H DH SERIES

2000h at 105℃

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

CD 117 DL → (105℃) → CD 117H DH



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)

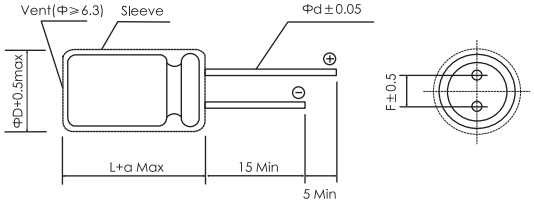
Rated Voltage (V)		6.3	10	16	25	35	50	63	100
Tan δ (max)	≤Φ10×12.5	0.18	0.15	0.12	0.08	0.08	0.08	0.07	0.07
	≥Φ10×16	0.21	0.17	0.14	0.12	0.12	0.1	0.08	0.08

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			

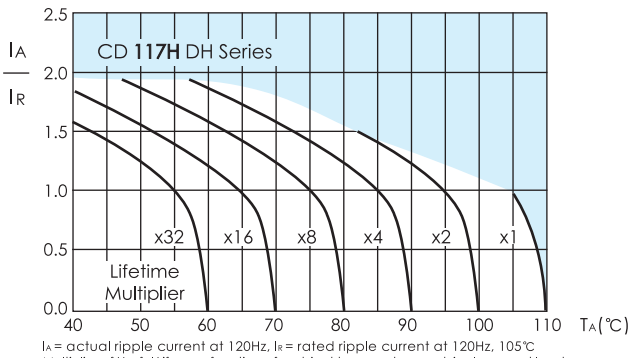
Frequency Coefficient

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

Temperature Coefficient

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

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

MINIATURE

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Ratings for CD **117H** DH Series

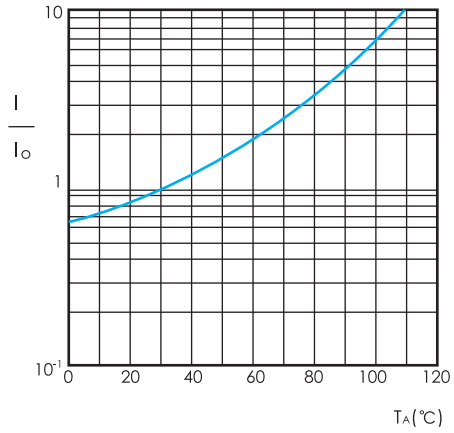
U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 105℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
6.3 (7.2) 0J	470	0.51	390	10×12.5	ECR0JDH471M□□100012
	680	0.41	480	10×16	ECR0JDH681M□□100016
	1000	0.28	650	10×20	ECR0JDH102M□□100020
	1500	0.19	910	12.5×25	ECR0JDH152M□□125025
	2200	0.13	1060	12.5×25	ECR0JDH222M□□125025
	3300	0.08	1270	16×25	ECR0JDH332M□□160025
	4700	0.06	1500	16×31.5	ECR0JDH472M□□160031
	6800	0.04	1760	18×35.5	ECR0JDH682M□□180035
	10000	0.03	1900	18×40	ECR0JDH103M□□180040
10 (13) 1A	47	4.23	110	5×11.5	ECR1ADH470M□□050011
	68	2.93	150	6.3×11.5	ECR1ADH680M□□063011
	100	1.99	180	6.3×11.5	ECR1ADH101M□□063011
	150	1.33	250	8×11.5	ECR1ADH151M□□080011
	220	0.90	310	8×11.5	ECR1ADH221M□□080011
	330	0.60	400	10×12.5	ECR1ADH331M□□100012
	470	0.48	530	10×16	ECR1ADH471M□□100016
	680	0.33	600	10×20	ECR1ADH681M□□100020
	1000	0.23	810	12.5×20	ECR1ADH102M□□125020
	1500	0.15	1020	12.5×25	ECR1ADH152M□□125025
	2200	0.10	1200	16×25	ECR1ADH222M□□160025
	3300	0.07	1420	16×31.5	ECR1ADH332M□□160031
	4700	0.05	1650	16×35.5	ECR1ADH472M□□160035
	6800	0.03	1890	18×35.5	ECR1ADH682M□□180035
16 (20) 1C	10	15.92	55	5×11.5	ECR1CDH100M□□050011
	15	10.62	70	5×11.5	ECR1CDH150M□□050011
	22	7.24	85	5×11.5	ECR1CDH220M□□050011
	33	4.83	100	5×11.5	ECR1CDH330M□□050011
	47	3.39	140	6.3×11.5	ECR1CDH470M□□063011
	68	2.34	160	6.3×11.5	ECR1CDH680M□□063011
	100	1.59	230	8×11.5	ECR1CDH101M□□080011
	150	1.06	280	8×11.5	ECR1CDH151M□□080011
	220	0.72	370	10×12.5	ECR1CDH221M□□100012
	330	0.56	420	10×16	ECR1CDH331M□□100016
	470	0.40	550	10×20	ECR1CDH471M□□100020
	680	0.27	730	12.5×20	ECR1CDH681M□□125020
	1000	0.19	910	12.5×25	ECR1CDH102M□□125025
	1500	0.12	1150	16×25	ECR1CDH152M□□160025
	2200	0.08	1300	16×25	ECR1CDH222M□□160025
	3300	0.06	1550	16×35.5	ECR1CDH332M□□160035
	4700	0.04	1820	16×35.5	ECR1CDH472M□□160035
25 (32) 1E	4.7	22.59	45	5×11.5	ECR1EDH4R7M□□050011
	6.8	15.61	55	5×11.5	ECR1EDH6R8M□□050011
	10	10.62	70	5×11.5	ECR1EDH100M□□050011
	15	7.08	85	5×11.5	ECR1EDH150M□□050011
	22	4.83	100	5×11.5	ECR1EDH220M□□050011
	33	3.22	140	6.3×11.5	ECR1EDH330M□□063011
	47	2.26	170	6.3×11.5	ECR1EDH470M□□063011
	68	1.56	230	8×11.5	ECR1EDH680M□□080011
	100	1.06	280	8×11.5	ECR1EDH101M□□080011
	150	0.71	370	10×12.5	ECR1EDH151M□□100012
	220	0.72	400	10×16	ECR1EDH221M□□100016
	330	0.48	490	10×20	ECR1EDH331M□□100020
	470	0.34	600	12.5×20	ECR1EDH471M□□125020
	680	0.23	810	12.5×25	ECR1EDH681M□□125025
	1000	0.16	1010	16×25	ECR1EDH102M□□160025
	1500	0.11	1270	16×31.5	ECR1EDH152M□□160031
	2200	0.07	1440	16×35.5	ECR1EDH222M□□160035
	3300	0.05	1720	18×40	ECR1EDH332M□□180040
35 (44) 1V	15	7.08	85	5×11.5	ECR1VDH150M□□050011
	22	4.83	110	6.3×11.5	ECR1VDH220M□□063011
	33	3.22	140	6.3×11.5	ECR1VDH330M□□063011
	47	2.26	190	8×11.5	ECR1VDH470M□□080011
	68	1.56	230	8×11.5	ECR1VDH680M□□080011
	100	1.06	300	10×12.5	ECR1VDH101M□□100012
	150	1.06	400	10×16	ECR1VDH151M□□100016
	220	0.72	440	10×20	ECR1VDH221M□□100020
	330	0.48	550	12.5×20	ECR1VDH331M□□125020
	470	0.34	680	12.5×25	ECR1VDH471M□□125025
	680	0.23	840	16×25	ECR1VDH681M□□160025
	1000	0.16	1100	16×25	ECR1VDH102M□□160025
	1500	0.11	1390	16×35.5	ECR1VDH152M□□160035
	2200	0.07	1580	16×35.5	ECR1VDH222M□□160035

U_R (Surge Voltage) Code	Rated Capa-citance	Max ESR 20℃, 120Hz	Rated Ripple Current 105℃, 120Hz	Size ΦD x L	P/N
(V)	(μF)	(Ω)	(mArms)	(mm)	-
50 (63) 1H	0.1	1061.57	1.1	5×11.5	ECR1HDH0R1M□□050011
	0.15	707.71	1.6	5×11.5	ECR1HDHR15M□□050011
	0.22	482.53	2.3	5×11.5	ECR1HDHR22M□□050011
	0.33	321.69	3.5	5×11.5	ECR1HDHR33M□□050011
	0.47	225.87	5.0	5×11.5	ECR1HDHR47M□□050011
	0.68	156.11	7.3	5×11.5	ECR1HDHR68M□□050011
	1	106.16	10.7	5×11.5	ECR1HDH010M□□050011
	1.5	70.77	16	5×11.5	ECR1HDH1R5M□□050011
	2.2	48.25	23	5×11.5	ECR1HDH2R2M□□050011
	3.3	32.17	40	5×11.5	ECR1HDH3R3M□□050011
	4.7	22.59	45	5×11.5	ECR1HDH4R7M□□050011
	6.8	15.61	55	5×11.5	ECR1HDH6R8M□□050011
	10	10.62	70	5×11.5	ECR1HDH100M□□050011
	15	7.08	95	6.3×11.5	ECR1HDH150M□□063011
	22	4.83	110	6.3×11.5	ECR1HDH220M□□063011
	33	3.22	165	8×11.5	ECR1HDH330M□□080011
	47	2.26	190	8×11.5	ECR1HDH470M□□080011
	68	1.56	250	10×12.5	ECR1HDH680M□□100012
	100	1.33	320	10×16	ECR1HDH101M□□100016
	150	0.88	420	10×20	ECR1HDH151M□□100020
	220	0.60	490	12.5×20	ECR1HDH221M□□125020
	330	0.40	600	12.5×20	ECR1HDH331M□□125020
	470	0.28	760	16×25	ECR1HDH471M□□160025
	680	0.20	910	16×25	ECR1HDH681M□□160025
	1000	0.13	1140	16×31.5	ECR1HDH102M□□160031
	1500	0.09	1480	18×40	ECR1HDH152M□□180040
63 (79) 1J	6.8	13.66	59	5×11.5	ECR1JDH6R8M□□050011
	10	9.29	75	6.3×11.5	ECR1JDH100M□□063011
	15	6.19	100	6.3×11.5	ECR1JDH150M□□063011
	22	4.22	115	8×11.5	ECR1JDH220M□□080011
	33	2.81	170	8×11.5	ECR1JDH330M□□080011
	47	1.98	200	10×12.5	ECR1JDH470M□□100012
	68	1.56	270	10×16	ECR1JDH680M□□100016
	100	1.06	330	10×20	ECR1JDH101M□□100020
	150	0.71	450	12.5×20	ECR1JDH151M□□125020
	220	0.48	550	12.5×20	ECR1JDH221M□□125020
	330	0.32	710	12.5×25	ECR1JDH331M□□125025
	470	0.23	850	16×25	ECR1JDH471M□□160025
	680	0.16	1050	16×31.5	ECR1JDH681M□□160031
	1000	0.11	1330	18×35.5	ECR1JDH102M□□180035
100 (125) 2A	0.1	928.87	2.1	5×11.5	ECR2ADH0R1M□□050011
	0.15	619.25	3.2	5×11.5	ECR2ADHR15M□□050011
	0.22	422.22	4.7	5×11.5	ECR2ADHR22M□□050011
	0.33	281.48	7.0	5×11.5	ECR2ADHR33M□□050011
	0.47	197.63	10.1	5×11.5	ECR2ADHR47M□□050011
	0.68	136.60	14.5	5×11.5	ECR2ADHR68M□□050011
	1	92.89	19	5×11.5	ECR2ADH010M□□050011
	1.5	61.92	23	5×11.5	ECR2ADH1R5M□□050011
	2.2	42.22	28	5×11.5	ECR2ADH2R2M□□050011
	3.3	28.15	45	5×11.5	ECR2ADH3R3M□□050011
	4.7	19.76	50	5×11.5	ECR2ADH4R7M□□050011
	6.8	13.66	65	6.3×11.5	ECR2ADH6R8M□□063011
	10	9.29	90	8×11.5	ECR2ADH100M□□080011
	15	6.19	110	8×11.5	ECR2ADH150M□□080011
	22	4.22	136	10×12.5	ECR2ADH220M□□100012
	33	3.22	180	10×16	ECR2ADH330M□□100016
	47	2.26	220	10×20	ECR2ADH470M□□100020
	68	1.56	290	10×20	ECR2ADH680M□□100020
	100	1.06	370	12.5×20	ECR2ADH101M□□125020
	150	0.71	470	12.5×25	ECR2ADH151M□□125025
	220	0.48	580	16×25	ECR2ADH221M□□160025
	330	0.32	730	16×31.5	ECR2ADH331M□□160031
	470	0.23	910	16×35.5	ECR2ADH471M□□160035

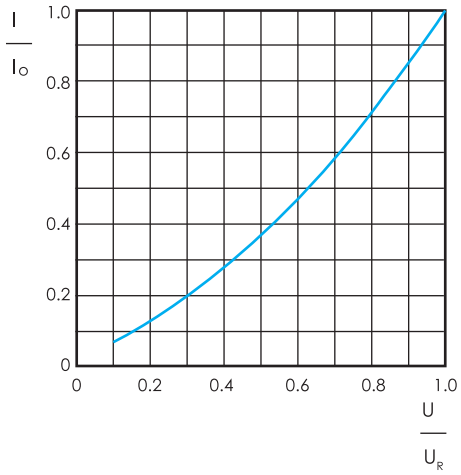
Customer products are available on request.

MINIATURE

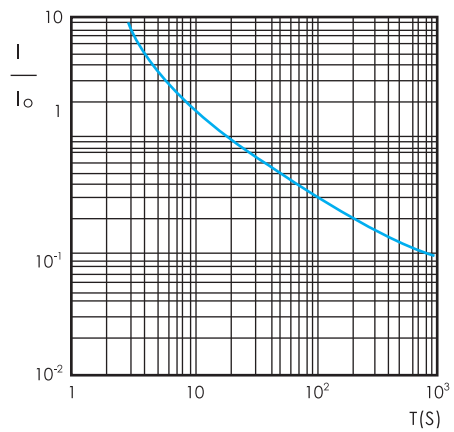
Typical Curves



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.