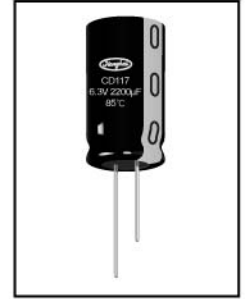


2000h at 85°C

- Load life of 2000 hours at 85°C
- Low Leakage Current
- Close Tolerance

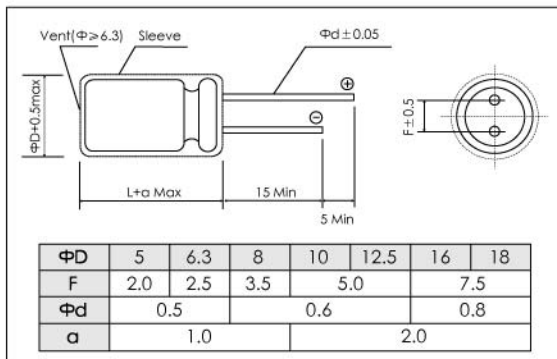


Items	Characteristics									
Operating Temperature Range (°C)	-40 ~ +85									
Capacitance Tolerance (20°C, 120Hz)	± 20% or ± 10%									
Leakage Current (µA)	After 1 minute at 20°C application of rated voltage, leakage current is not more than 0.008CV or 1.0µA, whichever is greater. C: Nominal Capacitance (µF) V: Rated Voltage (V)									
Dissipation Factor (20°C, 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	0.10	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°C} / Z _{+20°C}	4	3	2	1.5				
		Z _{-40°C} / Z _{+20°C}	8	6	4		3			

	Useful Life		Load Life	Endurance Test	Shelf Life
Lifetime	3000h	> 50000h	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 Failure Rate Level	U _R I _R 85°C ≤ 1% Failure Rate	U _R 1.2 × I _R 40°C ≤ 1% Failure Rate	U _R I _R 85°C guaranteed	U _R I _R = 0 85°C	U _R = 0 I _R = 0 85°C After test: U _R to be applied for 30min >24h before measurement

Dimensions

mm



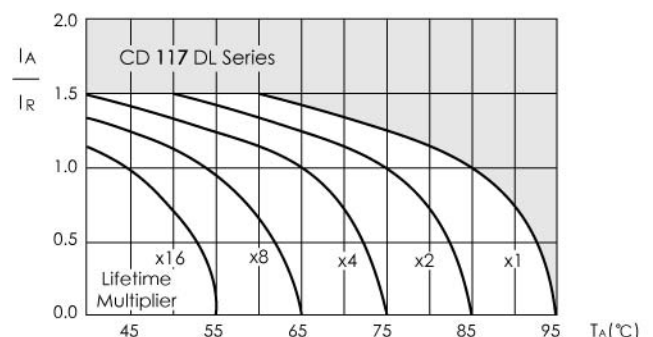
Temperature Coefficient

Temperature(°C)	+70	+85
Coefficient	1.35	1

Frequency Coefficient

Frequency Cap (µF)	50~60Hz	120Hz	1kHz	≥ 10kHz
~ 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, 85°C
Multiplier of Useful Life as a function of ambient temperature and ripple current load

CD 117 DL Series



Ratings for CD 117 DL Series

Ur (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Φ D x L	P/N	
(V)	(μ F)	(Ω)	(mA rms)	(mm)	-	
6.3 (7.2) 0J	470	0.51	390	10 x 12.5	ECR0JDL471M□□100012	
	680	0.41	480	10 x 16	ECR0JDL681M□□100016	
	1000	0.28	650	10 x 20	ECR0JDL102M□□100020	
	1500	0.19	910	12.5 x 25	ECR0JDL152M□□125025	
	2200	0.13	1060	12.5 x 25	ECR0JDL222M□□125025	
	3300	0.08	1270	16 x 25	ECR0JDL332M□□160025	
	4700	0.06	1500	16 x 31.5	ECR0JDL472M□□160031	
	6800	0.04	1760	18 x 35.5	ECR0JDL682M□□180035	
	10000	0.03	1900	18 x 40	ECR0JDL103M□□180040	
	10 (13) 1A	47	4.23	110	5 x 11.5	ECR1ADL470M□□050011
68		2.93	150	6.3 x 11.5	ECR1ADL680M□□063011	
100		1.99	180	6.3 x 11.5	ECR1ADL101M□□063011	
150		1.33	250	8 x 11.5	ECR1ADL151M□□080011	
220		0.90	310	8 x 11.5	ECR1ADL221M□□080011	
330		0.60	400	10 x 12.5	ECR1ADL331M□□100012	
470		0.48	530	10 x 16	ECR1ADL471M□□100016	
680		0.33	600	10 x 20	ECR1ADL681M□□100020	
1000		0.23	810	12.5 x 20	ECR1ADL102M□□125020	
1500		0.15	1020	12.5 x 25	ECR1ADL152M□□125025	
2200		0.10	1200	16 x 25	ECR1ADL222M□□160025	
3300		0.07	1420	16 x 31.5	ECR1ADL332M□□160031	
4700		0.05	1650	16 x 35.5	ECR1ADL472M□□160035	
6800		0.03	1890	18 x 35.5	ECR1ADL682M□□180035	
16 (20) 1C		10	15.92	55	5 x 11.5	ECR1CDL100M□□050011
		15	10.62	70	5 x 11.5	ECR1CDL150M□□050011
	22	7.24	85	5 x 11.5	ECR1CDL220M□□050011	
	33	4.83	100	5 x 11.5	ECR1CDL330M□□050011	
	47	3.39	140	6.3 x 11.5	ECR1CDL470M□□063011	
	68	2.34	160	6.3 x 11.5	ECR1CDL680M□□063011	
	100	1.59	230	8 x 11.5	ECR1CDL101M□□080011	
	150	1.06	280	8 x 11.5	ECR1CDL151M□□080011	
	220	0.72	370	10 x 12.5	ECR1CDL221M□□100012	
	330	0.56	420	10 x 16	ECR1CDL331M□□100016	
	470	0.40	550	10 x 20	ECR1CDL471M□□100020	
	680	0.27	730	12.5 x 20	ECR1CDL681M□□125020	
	1000	0.19	910	12.5 x 25	ECR1CDL102M□□125025	
	1500	0.12	1150	16 x 25	ECR1CDL152M□□160025	
	2200	0.08	1300	16 x 25	ECR1CDL222M□□160025	
	25 (32) 1E	3300	0.06	1550	16 x 35.5	ECR1CDL332M□□160035
4700		0.04	1820	16 x 35.5	ECR1CDL472M□□160035	
4.7		22.59	45	5 x 11.5	ECR1EDL47M□□050011	
6.8		15.61	55	5 x 11.5	ECR1EDL68M□□050011	
10		10.62	70	5 x 11.5	ECR1EDL100M□□050011	
15		7.08	85	5 x 11.5	ECR1EDL150M□□050011	
22		4.83	100	5 x 11.5	ECR1EDL220M□□050011	
33		3.22	140	6.3 x 11.5	ECR1EDL330M□□063011	
47		2.26	170	6.3 x 11.5	ECR1EDL470M□□063011	
68		1.56	230	8 x 11.5	ECR1EDL680M□□080011	
100		1.06	280	8 x 11.5	ECR1EDL101M□□080011	
150		0.71	370	10 x 12.5	ECR1EDL151M□□100012	
220		0.72	400	10 x 16	ECR1EDL221M□□100016	
330		0.48	490	10 x 20	ECR1EDL331M□□100020	
470		0.34	600	12.5 x 20	ECR1EDL471M□□125020	
35 (44) 1V		680	0.23	810	12.5 x 25	ECR1EDL681M□□125025
	1000	0.16	1010	16 x 25	ECR1EDL102M□□160025	
	1500	0.11	1270	16 x 31.5	ECR1EDL152M□□160031	
	2200	0.07	1440	16 x 35.5	ECR1EDL222M□□160035	
	3300	0.05	1720	18 x 40	ECR1EDL332M□□180040	
	15	7.08	85	5 x 11.5	ECR1VDL150M□□050011	
	22	4.83	110	6.3 x 11.5	ECR1VDL220M□□063011	
	33	3.22	140	6.3 x 11.5	ECR1VDL330M□□063011	
	47	2.26	190	8 x 11.5	ECR1VDL470M□□080011	
	68	1.56	230	8 x 11.5	ECR1VDL680M□□080011	
	100	1.06	300	10 x 12.5	ECR1VDL101M□□100012	
	150	1.06	400	10 x 16	ECR1VDL151M□□100016	
	220	0.72	440	10 x 20	ECR1VDL221M□□100020	
	330	0.48	550	12.5 x 20	ECR1VDL331M□□125020	
	470	0.34	680	12.5 x 25	ECR1VDL471M□□125025	
	680	0.23	840	16 x 25	ECR1VDL681M□□160025	
1000	0.16	1100	16 x 25	ECR1VDL102M□□160025		
1500	0.11	1390	16 x 35.5	ECR1VDL152M□□160035		
2200	0.07	1580	16 x 35.5	ECR1VDL222M□□160035		

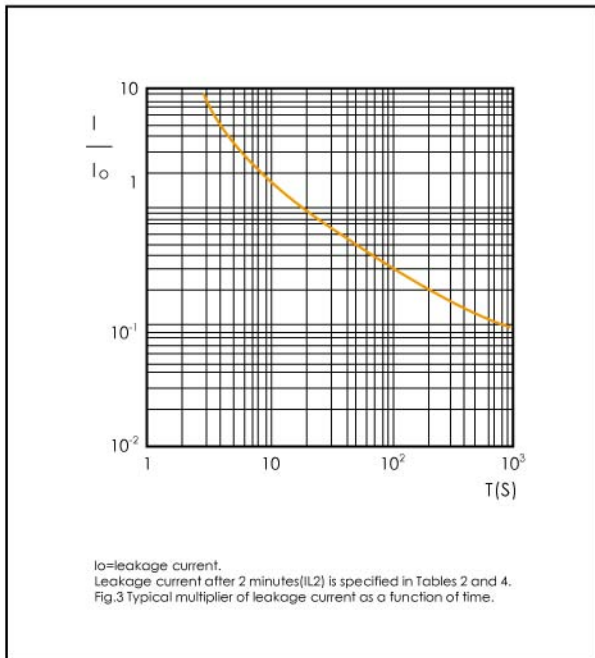
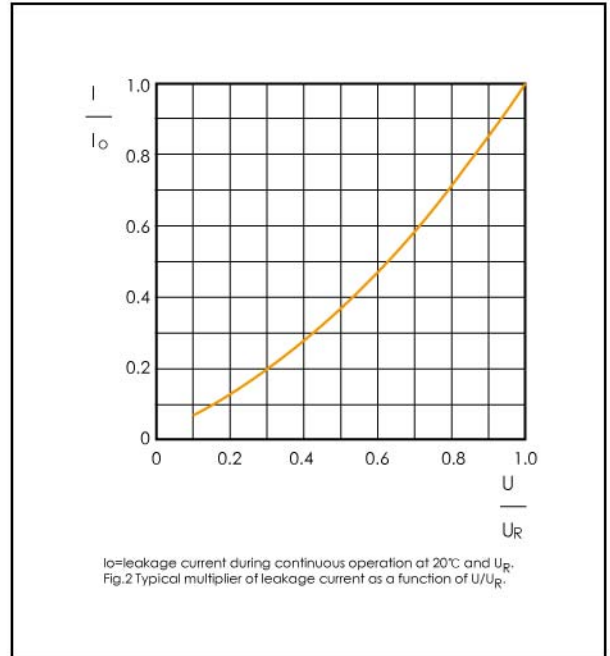
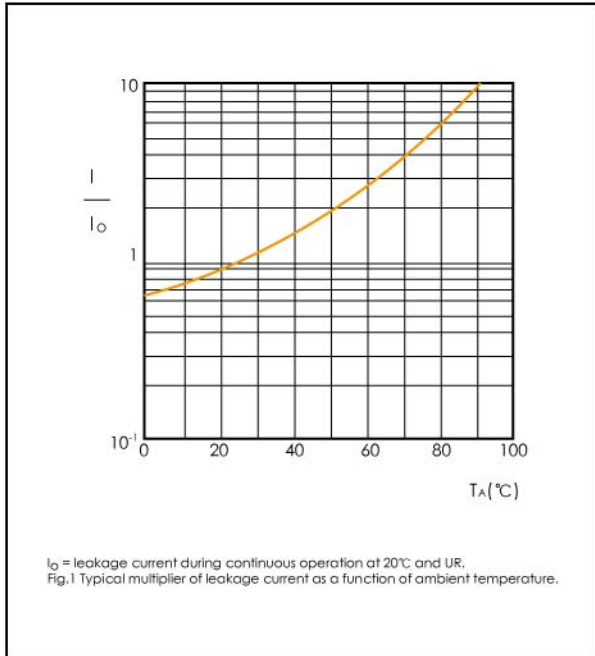
Ur (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size Φ D x L	P/N	
(V)	(μ F)	(Ω)	(mA rms)	(mm)	-	
50 (63) 1H	0.1	1061.57	1.1	5 x 11.5	ECR1HDL0R1M□□050011	
	0.15	707.71	1.6	5 x 11.5	ECR1HDLR15M□□050011	
	0.22	482.53	2.3	5 x 11.5	ECR1HDLR22M□□050011	
	0.33	321.69	3.5	5 x 11.5	ECR1HDLR33M□□050011	
	0.47	225.87	5.0	5 x 11.5	ECR1HDLR47M□□050011	
	0.68	156.11	7.3	5 x 11.5	ECR1HDLR68M□□050011	
	1	106.16	10.7	5 x 11.5	ECR1HDL010M□□050011	
	1.5	70.77	16	5 x 11.5	ECR1HDLR15M□□050011	
	2.2	48.25	23	5 x 11.5	ECR1HDLR22M□□050011	
	3.3	32.17	40	5 x 11.5	ECR1HDLR33M□□050011	
	4.7	22.59	45	5 x 11.5	ECR1HDLR47M□□050011	
	6.8	15.61	55	5 x 11.5	ECR1HDLR68M□□050011	
	10	10.62	70	5 x 11.5	ECR1HDLR100M□□050011	
	15	7.08	95	6.3 x 11.5	ECR1HDLR150M□□063011	
	22	4.83	110	6.3 x 11.5	ECR1HDLR220M□□063011	
	33	3.22	165	8 x 11.5	ECR1HDLR330M□□080011	
	47	2.26	190	8 x 11.5	ECR1HDLR470M□□080011	
	68	1.56	250	10 x 12.5	ECR1HDLR680M□□100012	
	63 (79) 1J	100	1.33	320	10 x 16	ECR1HDL101M□□100016
		150	0.88	420	10 x 20	ECR1HDL151M□□100020
220		0.60	490	12.5 x 20	ECR1HDL221M□□125020	
330		0.40	600	12.5 x 20	ECR1HDL331M□□125020	
470		0.28	760	16 x 25	ECR1HDL471M□□160025	
680		0.20	910	16 x 25	ECR1HDL681M□□160025	
1000		0.13	1140	16 x 31.5	ECR1HDL102M□□160031	
1500		0.09	1480	18 x 40	ECR1HDL152M□□180040	
6.8		13.66	59	5 x 11.5	ECR1JDL68M□□050011	
10		9.29	75	6.3 x 11.5	ECR1JDL151M□□063011	
15		6.19	100	6.3 x 11.5	ECR1JDL150M□□063011	
22		4.22	115	8 x 11.5	ECR1JDL220M□□080011	
33		2.81	170	8 x 11.5	ECR1JDL330M□□080011	
47		1.98	200	10 x 12.5	ECR1JDL470M□□100012	
68		1.56	270	10 x 16	ECR1JDL680M□□100016	
100		1.06	330	10 x 20	ECR1JDL101M□□100020	
150		0.71	450	12.5 x 20	ECR1JDL151M□□125020	
220		0.48	550	12.5 x 20	ECR1JDL221M□□125020	
330		0.32	710	12.5 x 25	ECR1JDL331M□□125025	
470		0.23	850	16 x 25	ECR1JDL471M□□160025	
680	0.16	1050	16 x 31.5	ECR1JDL681M□□160031		
1000	0.11	1330	18 x 35.5	ECR1JDL102M□□180035		
100 (125) 2A	0.1	928.87	2.1	5 x 11.5	ECR2ADL0R1M□□050011	
	0.15	619.25	3.2	5 x 11.5	ECR2ADLR15M□□050011	
	0.22	422.22	4.7	5 x 11.5	ECR2ADLR22M□□050011	
	0.33	281.48	7.0	5 x 11.5	ECR2ADLR33M□□050011	
	0.47	197.63	10.1	5 x 11.5	ECR2ADLR47M□□050011	
	0.68	136.60	14.5	5 x 11.5	ECR2ADLR68M□□050011	
	1	92.89	19	5 x 11.5	ECR2ADL010M□□050011	
	1.5	61.92	23	5 x 11.5	ECR2ADLR15M□□050011	
	2.2	42.22	28	5 x 11.5	ECR2ADLR22M□□050011	
	3.3	28.15	45	5 x 11.5	ECR2ADLR33M□□050011	
	4.7	19.76	50	5 x 11.5	ECR2ADLR47M□□050011	
	6.8	13.66	65	6.3 x 11.5	ECR2ADLR68M□□063011	
	10	9.29	90	8 x 11.5	ECR2ADLR100M□□080011	
	15	6.19	110	8 x 11.5	ECR2ADLR150M□□080011	
	22	4.22	136	10 x 12.5	ECR2ADLR220M□□100012	
	33	3.22	180	10 x 16	ECR2ADLR330M□□100016	
	47	2.26	220	10 x 20	ECR2ADLR470M□□100020	
	68	1.56	290	10 x 20	ECR2ADLR680M□□100020	
	100	1.06	370	12.5 x 20	ECR2ADLR101M□□125020	
	150	0.71	470	12.5 x 25	ECR2ADLR151M□□125025	
220	0.48	580	16 x 25	ECR2ADLR221M□□160025		
330	0.32	730	16 x 31.5	ECR2ADLR331M□□160031		
470	0.23	910	16 x 35.5	ECR2ADLR471M□□160035		

Customer products are available on request.

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