

2000 h at 85°C

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

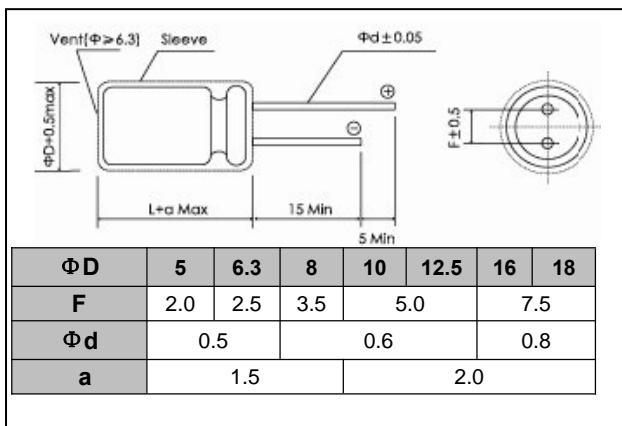


Items	Characteristics																													
Operating Temperature Range(°C)	-40~ +85																													
Capacitance Tolerance (20°C,120Hz)	±20% or ±10%																													
Leakage Current (µA)	After 1 minute at 20°C application of rated voltage, leakage current is not more than 0.008CV or 1.0µA, whichever is greater. C:Nominal Capacitance(µF) V:Rated Voltage(V)																													
Dissipation Factor (20°C, 120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Tan δ(max)</td> <td>φ 10×12.5</td> <td>0.18</td> <td>0.15</td> <td>0.12</td> <td>0.08</td> <td>0.08</td> <td>0.08</td> <td>0.07</td> <td>0.07</td> </tr> <tr> <td></td> <td>φ 10×16</td> <td>0.21</td> <td>0.17</td> <td>0.14</td> <td>0.12</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> </tr> </tbody> </table>	Rated Voltage(V)	6.3	10	16	25	35	50	63	100	Tan δ(max)	φ 10×12.5	0.18	0.15	0.12	0.08	0.08	0.08	0.07	0.07		φ 10×16	0.21	0.17	0.14	0.12	0.12	0.10	0.08	0.08
	Rated Voltage(V)	6.3	10	16	25	35	50	63	100																					
Tan δ(max)	φ 10×12.5	0.18	0.15	0.12	0.08	0.08	0.08	0.07	0.07																					
	φ 10×16	0.21	0.17	0.14	0.12	0.12	0.10	0.08	0.08																					
Stability at Low Temperature (Impedance Ratio at 120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage(V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance ratio</td> <td>Z_{-25°C}/Z_{+20°C}</td> <td>4</td> <td>3</td> <td>2</td> <td colspan="3">1.5</td> <td></td> </tr> <tr> <td>Z_{-40°C}/Z_{+20°C}</td> <td>8</td> <td>6</td> <td>4</td> <td colspan="3">3</td> <td></td> </tr> </tbody> </table>	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						
	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	U _R I _R 85°C	U _R 1.2 x I _R 40°C	U _R I _R 85°C	U _R I _R = 0 85°C	<div style="border: 1px solid black; padding: 5px;"> After test: U_R to be applied for 30min>24h before measurement </div> U _R = 0 I _R = 0 85°C

Dimensions

mm



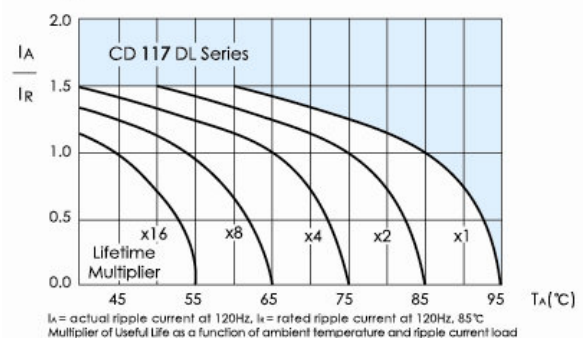
Temperature Coefficient

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

Frequency Coefficient

Frequency Cap(µF)	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





Ratings for CD 117 DL Series

U _r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD×L	P/N
(v)	(μF)	(Ω)	(mArms)	(mm)	-
6.3 (7.2) 0J	470	0.51	390	10x12.5	ECR0JDL471M□□100012
	680	0.41	480	10X16	ECR0JDL681M□□100016
	1000	0.28	650	10x20	ECR0JDL102M□□100020
	1500	0.19	910	12.5x25	ECR0JDL152M□□125025
	2200	0.13	1060	12.5x25	ECR0JDL222M□□125025
	3300	0.08	1270	16x25	ECR0JDL332M□□160025
	4700	0.06	1500	16x31.5	ECR0JDL472M□□160031
	6800	0.04	1760	18x35.5	ECR0JDL682M□□180035
	10000	0.03	1900	18x40	ECR0JDL103M□□180040
10 (13) 1A	47	4.23	110	5X11.5	ECR1ADL470M□□050011
	68	2.93	150	6.3x11.5	ECR1ADL680M□□063011
	100	1.99	180	6.3x11.5	ECR1ADL101M□□063011
	150	1.33	250	8x11.5	ECR1ADL151M□□080011
	220	0.90	310	8x11.5	ECR1ADL221M□□080011
	330	0.60	400	10x12.5	ECR1ADL331M□□100012
	470	0.48	530	10x16	ECR1ADL471M□□100016
	680	0.33	600	10x20	ECR1ADL681M□□100020
	1000	0.23	810	12.5x20	ECR1ADL102M□□125020
	1500	0.15	1020	12.5x25	ECR1ADL152M□□125025
	2200	0.10	1200	16x25	ECR1ADL222M□□160025
	3300	0.07	1420	16x31.5	ECR1ADL332M□□160031
	4700	0.05	1650	16x35.5	ECR1ADL472M□□160035
6800	0.03	1890	18x35.5	ECR1ADL682M□□180035	
16 (20) 1C	10	15.92	55	5x11.5	ECR1CDL100M□□050011
	15	10.62	70	5x11.5	ECR1CDL150M□□050011
	22	7.24	85	5x11.5	ECR1CDL220M□□050011
	33	4.83	100	5x11.5	ECR1CDL330M□□050011
	47	3.39	140	6.3x11.5	ECR1CDL470M□□063011
	68	2.34	160	6.3x11.5	ECR1CDL680M□□063011
	100	1.59	230	8x11.5	ECR1CDL101M□□080011
	150	1.06	280	8x11.5	ECR1CDL151M□□080011
	220	0.72	370	10x12.5	ECR1CDL221M□□100012
	330	0.56	420	10x16	ECR1CDL331M□□100016
	470	0.40	550	10x20	ECR1CDL471M□□100020
	680	0.27	730	12.5x20	ECR1CDL681M□□125020
	1000	0.19	910	12.5x25	ECR1CDL102M□□125025
	1500	0.12	1150	16x25	ECR1CDL152M□□160025
	2200	0.08	1300	16x25	ECR1CDL222M□□160025
3300	0.06	1550	16x35.5	ECR1CDL332M□□160035	
4700	0.04	1820	16x35.5	ECR1CDL472M□□160035	
25 (32) 1E	4.7	22.59	45	5x11.5	ECR1EDL477M□□050011
	6.8	15.61	55	5X11.5	ECR1EDL688M□□050011
	10	10.62	70	5x11.5	ECR1EDL100M□□050011
	15	7.08	85	5x11.5	ECR1EDL150M□□050011
	22	4.83	100	5x11.5	ECR1EDL220M□□050011
	33	3.22	140	6.3x11.5	ECR1EDL330M□□063011
	47	2.26	170	6.3x11.5	ECR1EDL470M□□063011
	68	1.56	230	8x11.5	ECR1EDL680M□□080011
	100	1.06	280	8x11.5	ECR1EDL101M□□080011
	150	0.71	370	10x12.5	ECR1EDL151M□□100012
	220	0.72	400	10x16	ECR1EDL221M□□100016
	330	0.48	490	10x20	ECR1EDL331M□□100020
	470	0.34	600	12.5x20	ECR1EDL471M□□125020
	680	0.23	810	12.5x25	ECR1EDL681M□□125025
	1000	0.16	1010	16X25	ECR1EDL102M□□160025

U _r (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD×L	P/N
(v)	(μF)	(Ω)	(mArms)	(mm)	-
25 (32) 1E	1500	0.11	1270	16x31.5	ECR1EDL152M□□160031
	2200	0.07	1440	16x35.5	ECR1EDL222M□□160035
	3300	0.05	1720	18x40	ECR1EDL332M□□180040
35 (44) 1V	15	7.08	85	5x11.5	ECR1VDL150M□□050011
	22	4.83	110	6.3x11.5	ECR1VDL220M□□063011
	33	3.22	140	6.3x11.5	ECR1VDL330M□□063011
	47	2.26	190	8x11.5	ECR1VDL470M□□080011
	68	1.56	230	8X11.5	ECR1VDL680M□□080011
	100	1.06	300	10x12.5	ECR1VDL101M□□100012
	150	1.06	400	10x16	ECR1VDL151M□□100016
	220	0.72	440	10x20	ECR1VDL221M□□100020
	330	0.48	550	12.5x20	ECR1VDL331M□□125020
	470	0.34	680	12.5x25	ECR1VDL471M□□125025
	680	0.23	840	16X25	ECR1VDL681M□□160025
	1000	0.16	1100	16X25	ECR1VDL102M□□160025
	1500	0.11	1390	16x35.5	ECR1VDL152M□□160035
	2200	0.07	1580	16x35.5	ECR1VDL222M□□160035
	50 (63) 1H	0.1	1061.57	1.1	5x11.5
0.15		707.71	1.6	5x11.5	ECR1HDLR15M□□050011
0.22		482.53	2.3	5X11.5	ECR1HDLR22M□□050011
0.33		321.69	3.5	5x11.5	ECR1HDLR33M□□050011
0.47		225.87	5.0	5x11.5	ECR1HDLR47M□□050011
0.68		156.11	7.3	5x11.5	ECR1HDLR68M□□050011
1		106.16	10.7	5x11.5	ECR1HDL010M□□050011
1.5		70.77	16	5x11.5	ECR1HDL1R5M□□050011
2.2		48.25	23	5X11.5	ECR1HDL2R2M□□050011
3.3		32.17	40	5X11.5	ECR1HDL3R3M□□050011
4.7		22.59	45	5x11.5	ECR1HDL4R7M□□050011
6.8		15.61	55	5x11.5	ECR1HDL6R8M□□050011
10		10.62	70	5x11.5	ECR1HDL100M□□050011
15		7.08	95	6.3x11.5	ECR1HDL150M□□063011
22		4.83	110	6.3x11.5	ECR1HDL220M□□063011
33		3.22	165	8x11.5	ECR1HDL330M□□080011
47		2.26	190	8x11.5	ECR1HDL470M□□080011
68	1.56	250	10x12.5	ECR1HDL680M□□100012	
100	1.33	320	10x16	ECR1HDL101M□□100016	
150	0.88	420	10x20	ECR1HDL151M□□100020	
220	0.60	490	12.5x20	ECR1HDL221M□□125020	
330	0.40	600	12.5X20	ECR1HDL331M□□125020	
470	0.28	760	16X25	ECR1HDL471M□□160025	
680	0.20	910	16x25	ECR1HDL681M□□160025	
1000	0.13	1140	16x31.5	ECR1HDL102M□□160031	
1500	0.09	1480	18x40	ECR1HDL152M□□180040	
63 (79) 1J	6.8	13.66	59	5x11.5	ECR1JDL688M□□050011
	10	9.29	75	6.3x11.5	ECR1JDL100M□□063011
	15	6.19	100	6.3x11.5	ECR1JDL150M□□063011
	22	4.22	115	8x11.5	ECR1JDL220M□□080011
	33	2.81	170	8x11.5	ECR1JDL330M□□080011
	47	1.98	200	10x12.5	ECR1JDL470M□□100012
	68	1.56	270	10x16	ECR1JDL680M□□100016
	100	1.06	330	10x20	ECR1JDL101M□□100020
	150	0.71	450	12.5x20	ECR1JDL151M□□125020
	220	0.48	550	12.5x20	ECR1JDL221M□□125020
	330	0.32	710	12.5x25	ECR1JDL331M□□125025

Ratings for CD 117 DL Series

U _R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120Hz	Rated Ripple Current 85°C, 120Hz	Size ΦD×L	P/N
(v)	(μF)	(Ω)	(mA _{rms})	(mm)	-
63 (79) 1J	470	0.23	850	16x25	ECR1JDL471M□□160025
	680	0.16	1050	16x31.5	ECR1JDL681M□□160031
	1000	0.11	1330	18x35.5	ECR1JDL102M□□180035
100 (125) 2A	0.1	928.87	2.1	5x11.5	ECR2ADL0R1M□□050011
	0.15	619.25	3.2	5X11.5	ECR2ADLR15M□□050011
	0.22	422.22	4.7	5X11.5	ECR2ADLR22M□□050011
	0.33	281.48	7.0	5X11.5	ECR2ADLR33M□□050011
	0.47	197.63	10.1	5X11.5	ECR2ADLR47M□□050011
	0.68	136.60	14.5	5x11.5	ECR2ADLR68M□□050011
	1	92.89	19	5x11.5	ECR2ADL010M□□050011
	1.5	61.92	23	5x11.5	ECR2ADL1R5M□□050011
	2.2	42.22	28	5X11.5	ECR2ADL2R2M□□050011
	3.3	28.15	45	5X11.5	ECR2ADL3R3M□□050011
	4.7	19.76	50	5X11.5	ECR2ADL4R7M□□050011
	6.8	13.66	65	6.3x11.5	ECR2ADL6R8M□□063011
	10	9.29	90	8x11.5	ECR2ADL100M□□080011
	15	6.19	110	8x11.5	ECR2ADL150M□□080011
	22	4.22	136	10x12.5	ECR2ADL220M□□100012
	33	3.22	180	10x16	ECR2ADL330M□□100016
	47	2.26	220	10x20	ECR2ADL470M□□100020
	68	1.56	290	10x20	ECR2ADL680M□□100020
	100	1.06	370	12.5x20	ECR2ADL101M□□125020
	150	0.71	470	12.5x25	ECR2ADL151M□□125025
220	0.48	580	16x25	ECR2ADL221M□□160025	
330	0.32	730	16x31.5	ECR2ADL331M□□160031	
470	0.23	910	16X35.5	ECR2ADL471M□□160035	

Customer products are available on request.

Typical Curves

