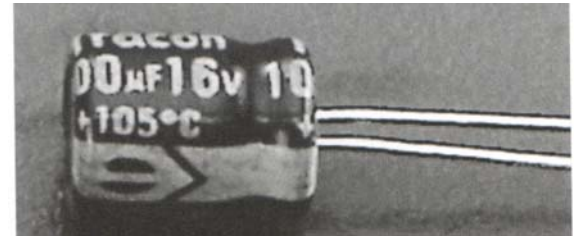


LER series

Aluminum Electrolytic Capacitors

Low ESR 105°C/1000-2000hrs Radial type



◆ Features

- » Used in mother board, computer peripheral, etc..
- » Safety vent construction design.

◆ Part Number

LER	106	M	250	R	B	0511
Series	Capacitance	Tolerance	Voltage	Lead form	package	Size
LER	0.1µF=104	20%=M	10V=100	Radial=R	Bulk=B	5x11=0511
	4.7µF=475		25V=250	Axial=A	Taping=T	6x11=0611
	10µF=106		50V=500			8x11=0811
			100V=101			10x12=1012

◆ Specification

Test Item	Performance Characteristics																																
Operating Temperature Range	-40 to +105°C																																
Rated voltage Range	6.3 to 100 VDC																																
Capacitance Range	0.1 to 10000uF																																
Capacitance Tolerance	±20%(120Hz, +20°C)																																
Leakage Current (+20°C, max.)	$I \leq 0.01 CV$ or $3(\mu A)$ After 2minutes whichever is greater measured with rated working voltage applied.																																
Dissipation Factor ($\tan\delta$)	<table border="1"> <tr> <td>Working Voltage (VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>D.F.(%)max</td> <td>22</td> <td>19</td> <td>16</td> <td>14</td> <td>12</td> <td>10</td> <td>9</td> <td>8</td> </tr> </table> <table border="1"> <tr> <td>Working Voltage (VDC)</td> <td>160</td> <td>200</td> <td>250</td> <td>350</td> <td>400</td> <td>450</td> </tr> <tr> <td>D.F.(%)max</td> <td>15</td> <td>15</td> <td>16</td> <td>20</td> <td>20</td> <td>20</td> </tr> </table> <p>For Capacitance > 1000uF , add 2% per another 1000uF (+20°C, at 120Hz)</p>	Working Voltage (VDC)	6.3	10	16	25	35	50	63	100	D.F.(%)max	22	19	16	14	12	10	9	8	Working Voltage (VDC)	160	200	250	350	400	450	D.F.(%)max	15	15	16	20	20	20
Working Voltage (VDC)	6.3	10	16	25	35	50	63	100																									
D.F.(%)max	22	19	16	14	12	10	9	8																									
Working Voltage (VDC)	160	200	250	350	400	450																											
D.F.(%)max	15	15	16	20	20	20																											
Low Temperature Characteristics (120Hz)	<table border="1"> <tr> <td>Working Voltage (VDC)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table> <p>Impedance ratio max.</p>	Working Voltage (VDC)	6.3	10	16	25	35	50	63	100	Z-25°C/Z+20°C	2	2	2	2	2	2	2	2	Z-40°C/Z+20°C	3	3	3	3	3	3	3	3					
Working Voltage (VDC)	6.3	10	16	25	35	50	63	100																									
Z-25°C/Z+20°C	2	2	2	2	2	2	2	2																									
Z-40°C/Z+20°C	3	3	3	3	3	3	3	3																									
Load Life	<p>Test conditions Duration time : 5Ø~6Ø1000Hrs D ≥ 8Ø 2000Hrs Ambient temperature:+105°C Applied voltage: Rated DC working voltage After test requirements:at+20°C After test requirements: ≤ ±20% of the initial measured value Dissipation Factor: ≤ 200% of the initial specified value Leakage current: ≤ The initial specified value</p>																																
Shelf Life	<p>Test conditions Duration time :500Hrs Ambient temperature:+105°C Applied voltage: None After test requirements at +20°C: Some limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.</p>																																

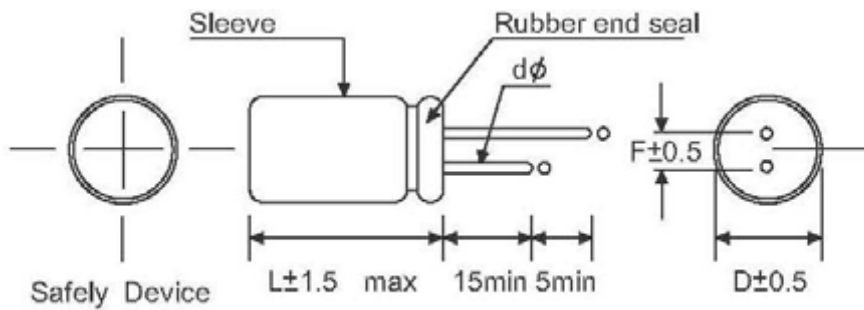
Multiplier for Ripple Current VS, Frequency

CAP (uF) \ HZ		50(60)	120	400	1K	10K	50K-100K
Multiplier	CAP ≤ 10	0.47	0.59	0.76	0.85	0.97	1.0
	10 < CAP ≤ 100	0.52	0.62	0.80	0.89	0.97	1.0
	100 < CAP ≤ 1000	0.58	0.72	0.84	0.90	0.98	1.0
	1000 < CAP	0.63	0.78	0.87	0.91	0.98	1.0

Multiplier for Ripple Current VS, Temperature

Temperature (°C)	45	60	70	85	95	105
Multiplier	1.8	1.5	1.4	1.3	1.2	1.0

Diagram of Dimensions: (Unit: mm)



D Ø	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
d Ø	0.5		0.6		0.8		

◆ Standard Products Table

Ø D x L (mm)

WV uF	6.3			10			16			25		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
10	-	-	-	-	-	-	5x11	37	1.30	5x11	56	1.30
22	5x11	56	1.2	5x11	56	1.00	5x11	70	0.95	5x11	120	0.85
33	-	-	-	5x11	58	0.90	5x11	130	0.85	5x11 6.3x11	150 160	0.80 0.75
47	5x11	88	0.8	5x11	120	0.80	5x11	180	0.70	5x11	210	0.60
56	5x11	100	0.6	5x11	130	0.60	5x11	205	0.55	5x11	245	0.44
68	-	-	-	5x11	145	0.55	5x11	230	0.45	6.3x11	270	0.39
82	-	-	-	5x11	185	0.50	6.3x11	280	0.37	6.3x11	285	0.33
100	5x11	200	0.48	5x11	242	0.46	5x11 6.3x11	300 320	0.36 0.31	6.3x11	370	0.29
220	6.3x11	310	0.32	6.3x11	350	0.25	6.3x11 8x11	420 440	0.28 0.20	8x11 8x14 10x15	500 600 700	0.14 0.12 0.095
330	6.3x11	365	0.15	6.3x11 8x11	420 470	0.14 0.12	8x11	560	0.10	8x11 8x14 8x16 10x12	600 625 640 670	0.085 0.080 0.072 0.069
470	6.3x11 8x11	370 420	0.145 0.12	6.3x11 8x11 8x14 10x12 10x15	450 520 570 1000 1050	0.13 0.10 0.095 0.070 0.068	8x11 8x16 8x20 10x12	600 660 790 700	0.095 0.090 0.083 0.085	8x14 8x20 10x12 10x15	780 880 790 900	0.068 0.068 0.066 0.065
560	8x11	550	0.11	8x11 8x14	640 670	0.092 0.089	10x12	760	0.078	10x17	1010	0.060
680	8x11	630	0.098	8x14	700	0.085	8x14 8x16 10x12	850 870 910	0.076 0.075 0.070	10x17 10x20	1100 1130	0.055 0.054
820	8x14	710	0.085	8x16	840	0.078	10x15	1020	0.062	10x20	1300	0.047
1000	8x11 8x14 8x16 10x12	750 755 760 800	0.095 0.085 0.081 0.076	8x14 8x16 8x20 10x12 10x15	950 960 1000 1015 1020	0.075 0.074 0.070 0.070 0.068	8x16 10x15 10x17 10x20 10x25	1050 1100 1120 1140 1200	0.062 0.058 0.050 0.044 0.043	10x17 10x20 10x25 13x16 13x21	1350 1380 1500 1455 1550	0.0421 0.040 0.040 0.039 0.038
1200	8x16 10x12 10x15	840 870 890	0.075 0.070 0.068	10x15 10x20	1110 1150	0.064 0.060	10x17 10x20 10x25	1200 1230 1250	0.050 0.042 0.041	13x21	1620	0.035
1500	8x16 10x12 10x15 10x17	960 1000 1030 1050	0.062 0.060 0.059 0.058	10x15 102x0	1200 1250	0.068 0.058	10x20 10x25	1300 1420	0.039 0.037	13x26	1730	0.032
1800	10x20	1170	0.050	10x25	1380	0.048	13x21	1610	0.036	13x26	1850	0.031
2200	8x20 10x12 10x25	1200 1320 1360	0.044 0.040 0.040	10x20 10x25 13x21	1480 1490 1570	0.039 0.038 0.038	10x20 10x25 13x16 13x26	1700 1760 1740 1850	0.035 0.032 0.034 0.034	13x21 13x26	1480 2000	0.024 0.030
2700	10x25 13x21	1420 1480	0.038 0.037	10x25 13x21	1610 1700	0.036 0.034	13x26	2050	0.030	16x26	2360	0.026
3300	10x25 13x21	1550 1620	0.035 0.033	13x21 13x26	1850 1890	0.029 0.030	13x21 13x26	2280 2330	0.029 0.028	16x26 16x31	2450 2500	0.022 0.025
4700	13x26	2000	0.028	13x26 16x26	2010 2030	0.027 0.026	16x26 16x31	2510 2550	0.025 0.025	16x31	2780	0.024
6800	16x26	2210	0.025	16x31	2240	0.024	18x36	2680	0.024	18x40	2900	0.024
8200	16x31	2530	0.024	16x36	2580	0.024	18x36	2780	0.024	-	-	-
10000	18x36	2740	0.024	18x36	2770	0.024	18x41	3200	0.024	18x40 22x42	3350 3450	0.024

Ripple Current(mA,rms)at105°C 100KHz
Max Impedance {Ω} at 20°C 100KHz

Ø D x L (mm)

WV UF	35			50			63			100		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
0.47	-	-	-	5x11	18	16.00	-	-	-	-	-	-
1	-	-	-	5x11	25	3.30	5x11	27	3.30	-	-	-
2.2	-	-	-	5x11	33	2.40	5x11	38	2.20	-	-	-
3.3	-	-	-	5x11	45	1.80	5x11	48	2.00	-	-	-
4.7	-	-	-	5x11	58	1.89	5x11	80	1.80	5X11	84	2.00
10	5x11	70	1.30	5x11	100	1.20	5x11	118	1.20	6.3X11 8X11	135 170	1.20 1.15
22	5x11	130	1.00	5x11 6x11	160 180	0.90 0.84	6.3x11	200	0.80	8x11	230	0.85
33	5x11	175	0.82	6.3x11	240	0.74	6.3x11	270	0.70	8x11 8x16 10x12	300 320 330	0.75 0.72 0.70
47	5x11 6.3x11	230 250	0.60 0.53	6x11 8x11	265 280	0.51 0.50	8x11	320	0.50	10x12 10x16	380 395	0.50 0.45
56	6.3x11	270	0.40	8x11	300	0.39	8x11	340	0.39	10x12	400	0.43
68	6.3x11 8x11	300 310	0.35 0.34	8x11	340	0.33	10x12	400	0.34	10x17	440	0.35
82	8x11	340	0.29	8x11	370	0.28	10x15	460	0.27	10x20	470	0.30
100	6x11 8x11	390 400	0.24 0.22	8x11 10x12	440 500	0.26 0.21	10x12 10x17	500 530	0.20	10x25	560	0.21
220	8x11 8x14 8x16 10x20	580 620 650 660	0.10 0.095 0.090 0.085	8x16 10x12 10x17	720 730 720	0.089 0.084 0.082	10x15 10x20 10x25 13x21	750 800 850 820	0.12 0.10 0.08 0.098	13x21 13x26 16x21 16x26	850 900 1050 1320	0.095 0.085 0.082 0.070
330	10x12 10x15 10x17 10x20	880 900 920 920	0.073 0.070 0.065 0.065	10x20 10x25	1000 1070	0.060 0.060	13x21	1260	0.058	16x26	1460	0.060
470	10x15 10x17 10x20	1000 1070 1120	0.065 0.058 0.055	10x20 13x21	1200 1320	0.057 0.050	13x21 13x26 16x21	1500 1650 1670	0.055 0.048 0.046	16x26 16x31 16x36 18x26	1630 1680 1700 1690	0.055 0.050 0.048 0.049
560	10x20 10x25 13x21	1200 1220 1230	0.052 0.048 0.048	13x21	1480	0.047	13x26	1790	0.044	-	-	-
680	10x20 13x21	1300 1350	0.046 0.043	13x21 13x26	1550 1600	0.042 0.039	13x26 16x26	1880 1950	0.045 0.038	-	-	-
820	13x21	1500	0.039	13x26	1780	0.037	16x26	2140	0.032	-	-	-
1000	13x21 13x26	1650 1700	0.037 0.035	13x26 16x26	2000 2020	0.036 0.035	16x31 16x36	2380 2400	0.030 0.028	-	-	-
1200	16x26	1880	0.032	16x31	2130	0.030	16x36	2520	0.025	-	-	-
1500	16x26	2030	0.029	16x36 16x41	2290 2300	0.026 0.025	18x36	2640	0.024	-	-	-
1800	16x31	2190	0.027	16x36	2480	0.024	18x41	2780	0.024	-	-	-
2200	16x21 16x26	2400 2300	0.018 0.026	-	-	-	-	-	-	-	-	-
3300	16x31 18x36	2500 2580	0.024 0.024	22x40	2800	0.024	-	-	-	-	-	-
4700	18x41	2750	0.024	25x42	3200	0.024	-	-	-	-	-	-
5600	18x41	2855	0.024	-	-	-	-	-	-	-	-	-
6800	18x40	3000	0.023	-	-	-	-	-	-	-	-	-

Ripple Current(mA,rms)at105°C 100KHz

Max Impedance {Ω} at 20°C 100KHz