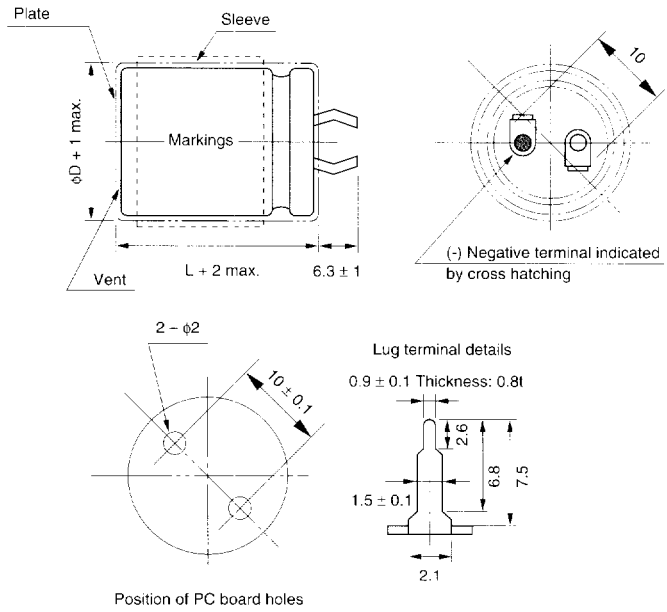


## LP4 Large Capacitance Aluminum Electrolytic Capacitors

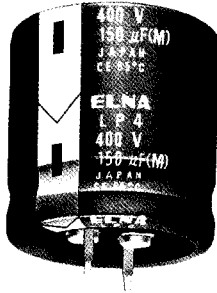
### Series LP4 PC Board Plug-in Miniaturized Capacitors

- Case size is one to two ranks smaller than LP3 Series
- Allowable ripple current is augmented to 1.3 to 2.0 times of previous one.
- Guarantee time is extended to 2 times of previous one.
- Of all capacitors whose case diameters ranging from 22 mm to 35 mm, those capacitors as high as 20 mm are grouped up as one series.
- 4 different case dimensions available for the same rating.

#### Outline Drawing



#### Photo



Unit: mm

#### Specifications

No.	Item	Performance																														
1	Temperature range (°C)	-40 to +85 (450 V is at -25 to +85)																														
2	Leakage current	Less than 0.01 CV (μA) or 1.5 mA whichever is smaller (after five minutes). C: Capacitance (μF), V: Voltage (V)																														
3	Capacitance tolerance (%)	±20 (20°C, 120Hz)																														
4	Tangent of loss angle (tan δ)	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>10 to 16</th> <th>25</th> <th>35 to 50</th> <th>63</th> <th>80 to 100</th> </tr> </thead> <tbody> <tr> <td>2700 or less</td> <td>—</td> <td>—</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> </tr> <tr> <td>3300 to 4700</td> <td>—</td> <td>0.35</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> </tr> <tr> <td>5600 to 6800</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.20</td> <td>0.20</td> </tr> <tr> <td>8200 or more</td> <td>0.40</td> <td>0.35</td> <td>0.35</td> <td>0.25</td> <td>—</td> </tr> </tbody> </table>	Rated voltage (V)	10 to 16	25	35 to 50	63	80 to 100	2700 or less	—	—	0.20	0.15	0.15	3300 to 4700	—	0.35	0.25	0.20	0.15	5600 to 6800	0.40	0.35	0.30	0.20	0.20	8200 or more	0.40	0.35	0.35	0.25	—
		Rated voltage (V)	10 to 16	25	35 to 50	63	80 to 100																									
2700 or less	—	—	0.20	0.15	0.15																											
3300 to 4700	—	0.35	0.25	0.20	0.15																											
5600 to 6800	0.40	0.35	0.30	0.20	0.20																											
8200 or more	0.40	0.35	0.35	0.25	—																											
<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>160 to 200</th> <th>250 to 450</th> </tr> </thead> <tbody> <tr> <td>22 to 30</td> <td>0.10</td> <td>0.15</td> </tr> <tr> <td>35</td> <td>0.12</td> <td>0.15</td> </tr> </tbody> </table>	Rated voltage (V)	160 to 200	250 to 450	22 to 30	0.10	0.15	35	0.12	0.15																							
Rated voltage (V)	160 to 200	250 to 450																														
22 to 30	0.10	0.15																														
35	0.12	0.15																														
5	Stability at low temperature	<table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>10</th> <th>16 to 35</th> <th>50 to 100</th> <th>160 to 200</th> <th>250 to 400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Impedance ratio</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> </tr> <tr> <td></td> <td>18</td> <td>15</td> <td>10</td> <td>6</td> <td>8</td> <td>—</td> </tr> </tbody> </table> <p>(120 Hz)</p>	Rated voltage (V)	10	16 to 35	50 to 100	160 to 200	250 to 400	450	Impedance ratio	5	4	3	3	4	4		18	15	10	6	8	—									
Rated voltage (V)	10	16 to 35	50 to 100	160 to 200	250 to 400	450																										
Impedance ratio	5	4	3	3	4	4																										
	18	15	10	6	8	—																										
6	Endurance (85°C) (Applied ripple current)	Test time	2000h																													
		Leakage current	Initial specified value or less																													
		Change in capacitance	Within ±20% of initial value																													
		tan δ	200% or less of initial specified value																													
7	Hot storage (85°C)	Test time	1000h																													
		Leakage current	Initial specified value or less																													
		Change in capacitance	Within ±15% of initial value																													
		tan δ	150% or less of initial specified value																													
		Voltage application treatment.																														
8	Applicable Standards	JIS C 5101-1, 5101-4 1998 (IEC 60384-1 1992, 60384-4 1985)																														

Large Capacitance LP4

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

Case size by working voltage & capacitance (in mm)

(mm)

WV(V) Cap.(µF)	10	16	25	35	50	63	80	100
470								22 x 20
560								
680							22 x 20	22 x 25 / 25 x 20
820								22 x 30
1000						22 x 20	22 x 25 / 25 x 20	25 x 25 / 30 x 20
1200							22 x 30 / 30 x 20	22 x 35 / 25 x 30 / 35 x 20
1500					22 x 20	22 x 25 / 25 x 20	25 x 25 / 35 x 20	22 x 40 / 25 x 35 / 30 x 25
1800					25 x 20	30 x 20	22 x 35 / 25 x 30	22 x 50 / 25 x 40 30 x 30 / 35 x 25
2200				22 x 20	22 x 25	22 x 30 / 25 x 25 / 35 x 20	22 x 40 / 25 x 35 / 30 x 25	25 x 45 / 30 x 35 / 35 x 30
2700				25 x 20	22 x 30 / 25 x 25 / 30 x 20	22 x 35 / 25 x 30	22 x 50 / 25 x 40 30 x 30 / 35 x 25	25 x 50 / 30 x 40
3300			22 x 20	22 x 25	35 x 20	22 x 40 / 25 x 35 / 30 x 25	25 x 45 / 30 x 35	50 x 45 / 35 x 35
3900			25 x 20	22 x 30 / 30 x 20	22 x 35 / 25 x 30 / 30 x 25	22 x 45 / 25 x 40 30 x 30 / 35 x 25	25 x 50 / 30 x 40 / 35 x 30	30 x 50 / 35 x 40
4700		22 x 20		25 x 25	22 x 40 / 25 x 35		30 x 45 / 35 x 35	35 x 50
5600			22 x 25 / 30 x 20	22 x 35 / 25 x 30 / 35 x 20	22 x 50 / 25 x 40 30 x 30 / 35 x 25	25 x 45 / 30 x 35 / 35 x 30	30 x 50 / 35 x 40	
6800	22 x 20	25 x 20	22 x 30 / 25 x 25	22 x 40 / 25 x 35 / 30 x 25	25 x 45 / 30 x 35	30 x 40 / 35 x 35	35 x 50	
8200	25 x 20	22 x 25	22 x 35 / 35 x 20	22 x 50 / 25 x 40 30 x 30 / 35 x 25	25 x 50 / 30 x 40 / 35 x 30	30 x 50 / 35 x 40		
10000	22 x 25	22 x 30 / 25 x 25 / 30 x 20	22 x 40 / 25 x 30 / 30 x 25	25 x 45 / 30 x 35	30 x 45 / 35 x 35	35 x 45		
12000	30 x 20	22 x 35 / 35 x 20	22 x 45 / 25 x 35 / 30 x 30	25 x 50 / 30 x 40 / 35 x 30	30 x 50 / 35 x 40	35 x 50		
15000	22 x 30 / 25 x 25	22 x 40 / 25 x 30 / 30 x 25	25 x 40 / 35 x 25	30 x 45 / 35 x 35	35 x 50			
18000	22 x 35 / 25 x 30 / 35 x 20	22 x 45 / 25 x 35	25 x 50 / 30 x 35 / 35 x 30	30 x 50 / 35 x 40				
22000	22 x 40 / 25 x 35 / 30 x 25	22 x 50 / 25 x 40 30 x 30 / 35 x 25	30 x 40 / 35 x 35	35 x 45				

LP4 Large Capacitance Aluminum Electrolytic Capacitors

WV(V) Cap.(µF)	160	180	200	250	315	350	400	450
39								22 x 20
47							22 x 20	
56						22 x 20		25 x 20
68					22 x 20		22 x 25 / 25 x 20	22 x 30
82						22 x 25 / 25 x 20		30 x 20
100					22 x 25 / 25 x 20		22 x 30 / 25 x 25 / 30 x 20	22 x 35 / 25 x 30 / 35 x 20
120				22 x 20		22 x 30 / 25 x 25 / 30 x 20	22 x 35 / 35 x 20	22 x 40 / 25 x 35
150			22 x 20	25 x 20	22 x 30 / 25 x 25 / 30 x 20	22 x 35 / 25 x 30 / 35 x 20	22 x 40 / 25 x 30 / 30 x 25	22 x 50 / 25 x 40 / 30 x 30
180		22 x 20		22 x 25	22 x 35 / 25 x 30 / 35 x 20	22 x 40 / 30 x 25	22 x 45 / 25 x 35 30 x 30 / 35 x 25	25 x 45 / 30 x 35 / 35 x 25
220	22 x 20	25 x 20	22 x 25 / 25 x 20	22 x 30 / 25 x 25 / 30 x 20	22 x 40 / 25 x 35 / 30 x 25	22 x 45 / 25 x 35 30 x 30 / 35 x 25	22 x 50 / 25 x 40 / 30 x 35	25 x 50 / 30 x 40 / 35 x 30
270	25 x 20	22 x 25		22 x 35	22 x 45 / 25 x 40 30 x 30 / 35 x 25	25 x 45 / 30 x 35	25 x 45 / 30 x 40 / 35 x 30	30 x 45 / 35 x 35
330	22 x 25	22 x 30	22 x 30 / 25 x 25 / 30 x 20	22 x 40 / 25 x 30 30 x 25 / 35 x 20	25 x 45 / 30 x 35	25 x 50 / 35 x 30	30 x 45 / 35 x 35	
390	22 x 30 / 25 x 25 / 30 x 20	25 x 25 / 30 x 20	22 x 35 / 25 x 30 / 35 x 20	22 x 45 / 25 x 35	25 x 50 / 30 x 40 / 35 x 30	30 x 40 / 35 x 35	30 x 50 / 35 x 40	35 x 45
470		22 x 35 / 25 x 30 30 x 25 / 35 x 20	22 x 40 / 30 x 25	22 x 50 / 25 x 40 30 x 30 / 35 x 25	30 x 45 / 35 x 35	30 x 45 / 35 x 40	35 x 45	35 x 50
560	22 x 35 / 25 x 30 30 x 25 / 35 x 20	22 x 40 / 25 x 35	22 x 45 / 25 x 35 30 x 30 / 35 x 25	25 x 45 / 30 x 35	30 x 50 / 35 x 40	35 x 45	35 x 50	
680	22 x 40 / 25 x 35	22 x 50 / 25 x 40 30 x 30 / 35 x 25	25 x 40 / 30 x 35	30 x 40 / 35 x 30	35 x 45	35 x 50		
820	22 x 50 / 25 x 40 30 x 30 / 35 x 25	25 x 45 / 30 x 35 / 35 x 30	25 x 50 / 30 x 40 / 35 x 30	30 x 45 / 35 x 35				
1000	25 x 45 / 30 x 35 / 35 x 30	25 x 50 / 30 x 40	30 x 45 / 35 x 35	35 x 40				
1200	25 x 50 / 30 x 40 / 35 x 35	30 x 45 / 35 x 35	30 x 50 / 35 x 40	35 x 45				
1500	30 x 45 / 35 x 40	35 x 45	35 x 50					
1800	35 x 45	35 x 50						
2200	35 x 50							

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
<b>10 V</b>					
LP4-10V682MS1	6800	22 x 20	0.40	0.098	1.9
LP4-10V822MS2	8200	25 x 20	0.40	0.081	2.2
LP4-10V103MS1	10000	22 x 25	0.40	0.066	2.5
LP4-10V123MS3	12000	30 x 20	0.40	0.055	2.9
LP4-10V153MS1	15000	22 x 30	0.40	0.044	3.2
LP4-10V153MS2	15000	25 x 25	0.40	0.044	3.1
LP4-10V183MS1	18000	22 x 35	0.40	0.037	3.6
LP4-10V183MS2	18000	25 x 30	0.40	0.037	3.6
LP4-10V183MS4	18000	35 x 20	0.40	0.037	3.8
LP4-10V223MS1	22000	22 x 40	0.40	0.030	4.0
LP4-10V223MS2	22000	25 x 35	0.40	0.030	4.1
LP4-10V223MS3	22000	30 x 25	0.40	0.030	4.1
<b>16V</b>					
LP4-16V472MS1	4700	22 x 20	0.40	0.141	1.6
LP4-16V682MS2	6800	25 x 20	0.40	0.098	2.0
LP4-16V822MS1	8200	22 x 25	0.40	0.081	2.2
LP4-16V103MS1	10000	22 x 30	0.40	0.066	2.6
LP4-16V103MS2	10000	25 x 25	0.40	0.066	2.6
LP4-16V103MS3	10000	30 x 20	0.40	0.066	2.6
LP4-16V123MS1	12000	22 x 35	0.40	0.055	2.9
LP4-16V123MS4	12000	35 x 20	0.40	0.055	3.1
LP4-16V153MS1	15000	22 x 40	0.40	0.044	3.3
LP4-16V153MS2	15000	25 x 30	0.40	0.044	3.3
LP4-16V153MS3	15000	30 x 25	0.40	0.044	3.4
LP4-16V183MS1	18000	22 x 45	0.40	0.037	3.8
LP4-16V183MS2	18000	25 x 35	0.40	0.037	3.7
LP4-16V223MS1	22000	22 x 50	0.40	0.030	4.2
LP4-16V223MS2	22000	25 x 40	0.40	0.030	4.2
LP4-16V223MS3	22000	30 x 30	0.40	0.030	4.2
LP4-16V223MS4	22000	35 x 25	0.40	0.030	4.4
<b>25 V</b>					
LP4-25V332MS1	3300	22 x 20	0.35	0.176	1.3
LP4-25V392MS2	3900	25 x 20	0.35	0.149	1.8
LP4-25V562MS1	5600	22 x 25	0.35	0.104	2.0
LP4-25V562MS3	5600	30 x 20	0.35	0.104	2.1
LP4-25V682MS1	6800	22 x 30	0.35	0.085	2.3

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-25V682MS2	6800	25 x 25	0.35	0.085	2.3
LP4-25V822MS1	8200	22 x 35	0.35	0.071	2.6
LP4-25V822MS4	8200	35 x 20	0.35	0.071	2.8
LP4-25V103MS1	10000	22 x 40	0.35	0.058	2.9
LP4-25V103MS2	10000	25 x 30	0.35	0.058	2.8
LP4-25V103MS3	10000	30 x 25	0.35	0.058	3.0
LP4-25V123MS1	12000	22 x 45	0.35	0.048	3.3
LP4-25V123MS2	12000	25 x 35	0.35	0.048	3.2
LP4-25V123MS3	12000	30 x 30	0.35	0.048	3.4
LP4-25V153MS2	15000	25 x 40	0.35	0.039	3.7
LP4-25V153MS4	15000	35 x 25	0.35	0.039	3.9
LP4-25V183MS2	18000	25 x 50	0.35	0.032	4.3
LP4-25V183MS3	18000	30 x 35	0.35	0.032	4.2
LP4-25V183MS4	18000	35 x 30	0.35	0.032	4.4
LP4-25V223MS3	22000	30 x 40	0.35	0.026	4.8
LP4-25V223MS4	22000	35 x 35	0.35	0.026	5.0
<b>35 V</b>					
LP4-35V222MS1	2200	22 x 20	0.20	0.151	1.6
LP4-35V272MS2	2700	25 x 20	0.20	0.123	1.8
LP4-35V332MS1	3300	22 x 25	0.25	0.126	1.8
LP4-35V392MS1	3900	22 x 30	0.25	0.106	2.1
LP4-35V392MS3	3900	30 x 20	0.25	0.106	2.1
LP4-35V472MS2	4700	25 x 25	0.25	0.088	2.2
LP4-35V562MS1	5600	22 x 35	0.30	0.089	2.3
LP4-35V562MS2	5600	25 x 30	0.30	0.089	2.3
LP4-35V562MS4	5600	35 x 20	0.30	0.089	2.5
LP4-35V682MS1	6800	22 x 40	0.30	0.073	2.9
LP4-35V682MS2	6800	25 x 35	0.30	0.073	2.6
LP4-35V682MS3	6800	30 x 25	0.30	0.073	2.7
LP4-35V822MS1	8200	22 x 50	0.35	0.071	2.8
LP4-35V822MS2	8200	25 x 40	0.35	0.071	2.8
LP4-35V822MS3	8200	30 x 30	0.35	0.071	2.8
LP4-35V822MS4	8200	35 x 25	0.35	0.071	2.9
LP4-35V103MS2	10000	25 x 45	0.35	0.058	3.1
LP4-35V103MS3	10000	30 x 35	0.35	0.058	3.2
LP4-35V123MS2	12000	25 x 50	0.35	0.048	3.5
LP4-35V123MS3	12000	30 x 40	0.35	0.048	3.5

Note: ESR 120 Hz at 20°C  
Allowable Ripple Current 120 Hz at 85°C

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-35V123MS4	12000	35 x 30	0.35	0.048	3.6
LP4-35V153MS3	15000	30 x 45	0.35	0.039	4.1
LP4-35V153MS4	15000	35 x 35	0.35	0.039	4.1
LP4-35V183MS3	18000	30 x 50	0.35	0.032	4.6
LP4-35V183MS4	18000	35 x 40	0.35	0.032	4.7
LP4-35V223MS4	22000	35 x 45	0.35	0.026	5.3
<b>50 V</b>					
LP4-50V152MS1	1500	22 x 20	0.20	0.221	1.3
LP4-50V182MS2	1800	25 x 20	0.20	0.184	1.5
LP4-50V222MS1	2200	22 x 25	0.20	0.151	1.7
LP4-50V272MS1	2700	22 x 30	0.20	0.123	1.9
LP4-50V272MS2	2700	25 x 25	0.20	0.123	1.9
LP4-50V272MS3	2700	30 x 20	0.20	0.123	2.0
LP4-50V332MS4	3300	35 x 20	0.25	0.126	2.1
LP4-50V392MS1	3900	22 x 35	0.25	0.106	2.1
LP4-50V392MS2	3900	25 x 30	0.25	0.106	2.1
LP4-50V392MS3	3900	30 x 25	0.25	0.106	2.4
LP4-50V472MS1	4700	22 x 40	0.25	0.088	2.4
LP4-50V472MS2	4700	25 x 35	0.25	0.088	2.4
LP4-50V562MS1	5600	22 x 50	0.30	0.089	2.5
LP4-50V562MS2	5600	25 x 40	0.30	0.089	2.5
LP4-50V562MS3	5600	30 x 30	0.30	0.089	2.5
LP4-50V562MS4	5600	35 x 25	0.30	0.089	2.6
LP4-50V682MS2	6800	25 x 45	0.30	0.073	2.8
LP4-50V682MS3	6800	30 x 35	0.30	0.073	2.8
LP4-50V822MS2	8200	25 x 50	0.35	0.071	3.2
LP4-50V822MS3	8200	30 x 40	0.35	0.071	3.0
LP4-50V822MS4	8200	35 x 30	0.35	0.071	3.0
LP4-50V103MS3	10000	30 x 45	0.35	0.058	3.4
LP4-50V103MS4	10000	35 x 35	0.35	0.058	3.4
LP4-50V123MS3	12000	35 x 50	0.35	0.048	3.8
LP4-50V123MS4	12000	35 x 40	0.35	0.048	3.8
LP4-50V153MS4	15000	35 x 50	0.35	0.039	4.5
<b>63 V</b>					
LP4-63V102MS1	1000	22 x 20	0.15	0.249	1.2
LP4-63V152MS1	1500	22 x 25	0.15	0.166	1.6
LP4-63V152MS2	1500	25 x 20	0.15	0.166	1.6

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-63V182MS3	1800	30 x 20	0.15	0.138	1.9
LP4-63V222MS1	2200	22 x 30	0.15	0.113	2.0
LP4-63V222MS2	2200	25 x 25	0.15	0.113	2.0
LP4-63V222MS4	2200	35 x 20	0.15	0.113	2.2
LP4-63V272MS1	2700	22 x 35	0.15	0.092	2.2
LP4-63V272MS2	2700	25 x 30	0.15	0.092	2.3
LP4-63V332MS1	3300	22 x 40	0.20	0.101	2.3
LP4-63V332MS2	3300	25 x 35	0.20	0.101	2.3
LP4-63V332MS3	3300	30 x 25	0.20	0.101	2.3
LP4-63V392MS1	3900	22 x 45	0.20	0.085	2.5
LP4-63V392MS2	3900	25 x 40	0.20	0.085	2.6
LP4-63V392MS3	3900	30 x 30	0.20	0.085	2.6
LP4-63V392MS4	3900	35 x 25	0.20	0.085	2.7
LP4-63V562MS2	5600	25 x 45	0.20	0.059	3.1
LP4-63V562MS3	5600	30 x 35	0.20	0.059	3.2
LP4-63V562MS4	5600	35 x 30	0.20	0.059	3.3
LP4-63V682MS3	6800	30 x 40	0.20	0.049	3.6
LP4-63V682MS4	6800	35 x 35	0.20	0.049	3.7
LP4-63V822MS3	8200	30 x 50	0.25	0.051	3.7
LP4-63V822MS4	8200	35 x 40	0.25	0.051	3.8
LP4-63V103MS4	10000	35 x 45	0.25	0.041	4.3
LP4-63V123MS4	12000	35 x 50	0.25	0.035	4.8
<b>80 V</b>					
LP4-80V681MS1	680	22 x 20	0.15	0.366	1.0
LP4-80V102MS1	1000	22 x 25	0.15	0.249	1.3
LP4-80V102MS2	1000	25 x 20	0.15	0.249	1.3
LP4-80V122MS1	1200	22 x 30	0.15	0.207	1.5
LP4-80V122MS3	1200	30 x 20	0.15	0.207	1.5
LP4-80V152MS2	1500	25 x 25	0.15	0.166	1.7
LP4-80V152MS4	1500	35 x 20	0.15	0.166	1.9
LP4-80V182MS1	1800	22 x 35	0.15	0.138	1.9
LP4-80V182MS2	1800	25 x 30	0.15	0.138	1.9
LP4-80V222MS1	2200	22 x 40	0.15	0.113	2.1
LP4-80V222MS2	2200	25 x 35	0.15	0.113	2.2
LP4-80V222MS3	2200	30 x 25	0.15	0.113	2.2
LP4-80V273MS1	2700	22 x 50	0.15	0.092	2.5
LP4-80V272MS2	2700	25 x 40	0.15	0.092	2.5

Note: ESR 120 Hz at 20°C  
Allowable Ripple Current 120 Hz at 85°C

Large Capacitance LP4

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-80V272MS3	2700	30 x 30	0.15	0.092	2.5
LP4-80V272MS4	2700	35 x 25	0.15	0.092	2.5
LP4-80V332MS2	3300	25 x 45	0.15	0.075	2.8
LP4-80V332MS3	3300	30 x 35	0.15	0.075	2.8
LP4-80V392MS2	3900	25 x 50	0.15	0.064	3.1
LP4-80V392MS3	3900	30 x 40	0.15	0.064	3.2
LP4-80V392MS4	3900	35 x 30	0.15	0.064	3.2
LP4-80V472MS3	4700	30 x 45	0.15	0.053	3.6
LP4-80V472MS4	4700	35 x 35	0.15	0.053	3.6
LP4-80V562MS3	5600	30 x 50	0.20	0.059	3.5
LP4-80V562MS4	5600	35 x 40	0.20	0.059	3.5
LP4-80V682MS4	6800	35 x 50	0.20	0.049	4.1
<b>100 V</b>					
LP4-100V471MS1	470	22 x 20	0.15	0.529	0.85
LP4-100V681MS1	680	22 x 25	0.15	0.366	1.1
LP4-100V681MS2	680	25 x 20	0.15	0.366	1.1
LP4-100V821MS1	820	22 x 30	0.15	0.303	1.2
LP4-100V102MS2	1000	25 x 25	0.15	0.249	1.4
LP4-100V102MS3	1000	30 x 20	0.15	0.249	1.4
LP4-100V122MS1	1200	22 x 35	0.15	0.207	1.6
LP4-100V122MS2	1200	25 x 30	0.15	0.207	1.6
LP4-100V122MS4	1200	35 x 20	0.15	0.207	1.7
LP4-100V152MS1	1500	22 x 40	0.15	0.166	1.8
LP4-100V152MS2	1500	25 x 35	0.15	0.166	1.7
LP4-100V152MS3	1500	30 x 25	0.15	0.166	1.8
LP4-100V182MS1	1800	22 x 50	0.15	0.138	2.1
LP4-100V182MS2	1800	25 x 40	0.15	0.138	2.0
LP4-100V182MS3	1800	30 x 30	0.15	0.138	2.1
LP4-100V182MS4	1800	35 x 25	0.15	0.138	2.2
LP4-100V222MS2	2200	25 x 45	0.15	0.113	2.2
LP4-100V222MS3	2200	30 x 35	0.15	0.113	2.3
LP4-100V222MS4	2200	35 x 30	0.15	0.113	2.5
LP4-100V272MS2	2700	25 x 50	0.15	0.092	2.6
LP4-100V272MS3	2700	30 x 40	0.15	0.092	2.7
LP4-100V332MS3	3300	30 x 45	0.15	0.075	3.0
LP4-100V332MS4	3300	35 x 35	0.15	0.075	3.1
LP4-100V392MS3	3900	30 x 50	0.15	0.064	3.4

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-100V392MS4	3900	35 x 40	0.15	0.064	3.4
LP4-100V472MS4	4700	35 x 50	0.15	0.053	4.0
<b>160V</b>					
LP4-160V221MS1	220	22 x 20	0.10	0.754	1.0
LP4-160V271MS2	270	25 x 20	0.10	0.614	1.2
LP4-160V331MS1	330	22 x 25	0.10	0.503	1.3
LP4-160V391MS1	390	22 x 30	0.10	0.425	1.5
LP4-160V391MS2	390	25 x 25	0.10	0.425	1.5
LP4-160V391MS3	390	30 x 20	0.10	0.425	1.4
LP4-160V561MS1	560	22 x 35	0.10	0.296	1.9
LP4-160V561MS2	560	25 x 30	0.10	0.296	1.9
LP4-160V561MS3	560	30 x 25	0.10	0.296	2.0
LP4-160V561MS4	560	35 x 20	0.12	0.355	1.9
LP4-160V681MS1	680	22 x 40	0.10	0.244	2.1
LP4-160V681MS2	680	25 x 35	0.10	0.244	2.2
LP4-160V821MS1	820	22 x 50	0.10	0.202	2.5
LP4-160V821MS2	820	25 x 40	0.10	0.202	2.4
LP4-160V821MS3	820	30 x 30	0.10	0.202	2.5
LP4-160V821MS4	820	35 x 25	0.12	0.243	2.4
LP4-160V102MS2	1000	25 x 45	0.10	0.166	2.7
LP4-160V102MS3	1000	30 x 35	0.10	0.166	2.8
LP4-160V102MS4	1000	35 x 30	0.12	0.199	2.7
LP4-160V122MS2	1200	25 x 50	0.10	0.138	3.1
LP4-160V122MS3	1200	30 x 40	0.10	0.138	3.2
LP4-160V122MS4	1200	35 x 35	0.12	0.166	3.0
LP4-160V152MS3	1500	30 x 45	0.10	0.111	3.7
LP4-160V152MS4	1500	35 x 40	0.12	0.133	3.5
LP4-160V182MS4	1800	35 x 45	0.12	0.111	3.9
LP4-160V222MS4	2200	35 x 50	0.12	0.090	4.5
<b>180V</b>					
LP4-180V181MS1	180	22 x 20	0.10	0.922	0.94
LP4-180V221MS2	220	25 x 20	0.10	0.754	1.1
LP4-180V271MS1	270	22 x 25	0.10	0.614	1.2
LP4-180V331MS1	330	22 x 30	0.10	0.503	1.4
LP4-180V391MS2	390	25 x 25	0.10	0.425	1.5
LP4-180V391MS3	390	30 x 20	0.10	0.425	1.6
LP4-180V471MS1	470	22 x 35	0.10	0.353	1.7

Note: ESR 120 Hz at 20°C  
Allowable Ripple Current 120 Hz at 85°C

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-180V471MS2	470	25 x 30	0.10	0.353	1.7
LP4-180V471MS3	470	30 x 25	0.10	0.353	1.8
LP4-180V471MS4	470	35 x 20	0.12	0.423	1.8
LP4-180V561MS1	560	22 x 40	0.10	0.296	1.9
LP4-180V561MS2	560	25 x 35	0.10	0.296	2.0
LP4-180V681MS1	680	22 x 50	0.10	0.244	2.3
LP4-180V681MS2	680	25 x 40	0.10	0.244	2.2
LP4-180V681MS3	680	30 x 30	0.10	0.244	2.3
LP4-180V681MS4	680	35 x 25	0.12	0.293	2.2
LP4-180V821MS2	820	25 x 45	0.10	0.202	2.5
LP4-180V821MS3	820	30 x 35	0.10	0.202	2.6
LP4-180V821MS4	820	35 x 30	0.12	0.243	2.5
LP4-180V102MS2	1000	25 x 50	0.10	0.166	2.9
LP4-180V102MS3	1000	30 x 40	0.10	0.166	2.9
LP4-180V122MS3	1200	30 x 45	0.10	0.138	3.3
LP4-180V122MS4	1200	35 x 35	0.12	0.166	3.1
LP4-180V152MS4	1500	35 x 45	0.12	0.133	3.6
LP4-180V182MS4	1800	35 x 50	0.12	0.111	4.1
<b>200 V</b>					
LP4-200V151MS1	150	22 x 20	0.10	1.106	0.87
LP4-200V221MS1	220	22 x 25	0.10	0.754	1.1
LP4-200V221MS2	220	25 x 20	0.10	0.754	1.1
LP4-200V331MS1	330	22 x 30	0.10	0.503	1.4
LP4-200V331MS2	330	25 x 25	0.10	0.503	1.4
LP4-200V331MS3	330	30 x 20	0.10	0.503	1.5
LP4-200V391MS1	390	22 x 35	0.10	0.425	1.6
LP4-200V391MS2	390	25 x 30	0.10	0.425	1.6
LP4-200V391MS4	390	35 x 20	0.12	0.510	1.6
LP4-200V471MS1	470	22 x 40	0.10	0.353	1.8
LP4-200V471MS3	470	30 x 25	0.10	0.353	1.9
LP4-200V561MS1	560	22 x 45	0.10	0.296	2.0
LP4-200V561MS2	560	25 x 35	0.10	0.296	2.0
LP4-200V561MS3	560	30 x 30	0.10	0.296	2.1
LP4-200V561MS4	560	35 x 25	0.12	0.355	2.0
LP4-200V681MS2	680	25 x 40	0.10	0.244	2.3
LP4-200V681MS3	680	30 x 35	0.10	0.244	2.4
LP4-200V821MS2	820	25 x 50	0.10	0.202	2.6

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-200V821MS3	820	30 x 40	0.10	0.202	2.7
LP4-200V821MS4	820	35 x 30	0.12	0.243	2.5
LP4-200V102MS3	1000	30 x 45	0.10	0.166	3.1
LP4-200V102MS4	1000	35 x 35	0.12	0.199	2.8
LP4-200V122MS3	1200	30 x 50	0.10	0.138	3.4
LP4-200V122MS4	1200	35 x 40	0.12	0.166	3.2
LP4-200V152MS4	1500	35 x 50	0.12	0.133	3.8
<b>250 V</b>					
LP4-250V121MS1	120	22 x 20	0.15	1.382	0.72
LP4-250V151MS2	150	25 x 20	0.15	1.106	0.85
LP4-250V181MS1	180	22 x 25	0.15	0.922	0.94
LP4-250V221MS1	220	22 x 30	0.15	0.754	1.1
LP4-250V221MS2	220	25 x 25	0.15	0.754	1.1
LP4-250V221MS3	220	30 x 20	0.15	0.754	1.1
LP4-250V271MS1	270	22 x 35	0.15	0.614	1.2
LP4-250V331MS1	330	22 x 40	0.15	0.503	1.4
LP4-250V331MS2	330	25 x 30	0.15	0.503	1.4
LP4-250V331MS3	330	30 x 25	0.15	0.503	1.5
LP4-250V331MS4	330	35 x 20	0.15	0.754	1.5
LP4-250V391MS1	390	22 x 45	0.15	0.425	1.6
LP4-250V391MS2	390	25 x 35	0.15	0.425	1.6
LP4-250V471MS1	470	22 x 50	0.15	0.353	1.8
LP4-250V471MS2	470	25 x 40	0.15	0.353	1.8
LP4-250V471MS3	470	30 x 30	0.15	0.353	1.8
LP4-250V471MS4	470	35 x 25	0.15	0.529	1.9
LP4-250V561MS2	560	25 x 45	0.15	0.296	2.0
LP4-250V561MS3	560	30 x 35	0.15	0.296	2.0
LP4-250V681MS3	680	30 x 40	0.15	0.244	2.3
LP4-250V681MS4	680	35 x 30	0.15	0.366	2.4
LP4-250V821MS3	820	30 x 45	0.15	0.202	2.6
LP4-250V821MS4	820	35 x 35	0.15	0.303	2.6
LP4-250V102MS4	1000	35 x 40	0.15	0.249	3.0
LP4-250V122MS4	1200	35 x 45	0.15	0.207	3.4
<b>315 V</b>					
LP4-315V680MS1	68	22 x 20	0.15	3.659	0.52
LP4-315V101MS1	100	22 x 25	0.15	2.488	0.67
LP4-315V101MS2	100	25 x 20	0.15	2.488	0.65

Note: ESR 120 Hz at 20°C  
Allowable Ripple Current 120 Hz at 85°C

LP4

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-315V151MS1	150	22 x 30	0.15	1.659	0.85
LP4-315V151MS2	150	25 x 25	0.15	1.659	0.85
LP4-315V151MS3	150	30 x 20	0.15	1.659	0.84
LP4-315V181MS1	180	22 x 35	0.15	1.382	0.96
LP4-315V181MS2	180	25 x 30	0.15	1.382	0.96
LP4-315V181MS4	180	35 x 20	0.15	1.382	1.0
LP4-315V221MS1	220	22 x 40	0.15	1.131	1.1
LP4-315V221MS2	220	25 x 35	0.15	1.131	1.1
LP4-315V221MS3	220	30 x 25	0.15	1.131	1.1
LP4-315V271MS1	270	22 x 45	0.15	0.922	1.2
LP4-315V271MS2	270	25 x 40	0.15	0.922	1.3
LP4-315V271MS3	270	30 x 30	0.15	0.922	1.3
LP4-315V271MS4	270	35 x 25	0.15	0.922	1.3
LP4-315V331MS2	330	25 x 45	0.15	0.754	1.4
LP4-315V331MS3	330	30 x 35	0.15	0.754	1.4
LP4-315V391MS2	390	25 x 50	0.15	0.638	1.6
LP4-315V391MS3	390	30 x 40	0.15	0.638	1.6
LP4-315V391MS4	390	35 x 30	0.15	0.638	1.6
LP4-315V471MS3	470	30 x 45	0.15	0.529	1.8
LP4-315V471MS4	470	35 x 35	0.15	0.529	1.8
LP4-315V561MS3	560	30 x 50	0.15	0.444	2.0
LP4-315V561MS4	560	35 x 40	0.15	0.444	2.0
LP4-315V681MS4	680	35 x 45	0.15	0.366	2.3
<b>350 V</b>					
LP4-350V560MS1	56	22 x 20	0.15	4.443	0.50
LP4-350V820MS1	82	22 x 25	0.15	3.034	0.64
LP4-350V820MS2	82	25 x 20	0.15	3.034	0.63
LP4-350V121MS1	120	22 x 30	0.15	2.073	0.82
LP4-350V121MS2	120	25 x 25	0.15	2.073	0.81
LP4-350V121MS3	120	30 x 20	0.15	2.073	0.84
LP4-350V151MS1	150	22 x 35	0.15	1.659	0.94
LP4-350V151MS2	150	25 x 30	0.15	1.659	0.94
LP4-350V151MS4	150	35 x 20	0.15	1.659	1.0
LP4-350V181MS1	180	22 x 40	0.15	1.382	1.1
LP4-350V181MS3	180	30 x 25	0.15	1.382	1.1
LP4-350V221MS1	220	22 x 45	0.15	1.131	1.2
LP4-350V221MS2	220	25 x 35	0.15	1.131	1.2

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-350V221MS3	220	30 x 30	0.15	1.131	1.2
LP4-350V221MS4	220	35 x 25	0.15	1.131	1.3
LP4-350V271MS2	270	25 x 45	0.15	0.922	1.4
LP4-350V271MS3	270	30 x 35	0.15	0.922	1.4
LP4-350V331MS2	330	25 x 50	0.15	0.754	1.6
LP4-350V331MS4	330	35 x 30	0.15	0.754	1.6
LP4-350V391MS3	390	30 x 40	0.15	0.638	1.7
LP4-350V391MS4	390	35 x 35	0.15	0.638	1.8
LP4-350V471MS3	470	30 x 45	0.15	0.529	2.0
LP4-350V471MS4	470	35 x 40	0.15	0.529	2.0
LP4-350V561MS4	560	35 x 45	0.15	0.444	2.3
LP4-350V681MS4	680	35 x 50	0.15	0.366	2.6
<b>400 V</b>					
LP4-400V470MS1	47	22 x 20	0.15	5.294	0.43
LP4-400V680MS1	68	22 x 25	0.15	3.659	0.55
LP4-400V680MS2	68	25 x 20	0.15	3.659	0.55
LP4-400V101MS1	100	22 x 30	0.15	2.488	0.70
LP4-400V101MS2	100	25 x 25	0.15	2.488	0.70
LP4-400V101MS3	100	30 x 20	0.15	2.488	0.74
LP4-400V121MS1	120	22 x 35	0.15	2.073	0.79
LP4-400V121MS4	120	35 x 20	0.15	2.073	0.91
LP4-400V151MS1	150	22 x 40	0.15	1.659	0.90
LP4-400V151MS2	150	25 x 30	0.15	1.659	0.89
LP4-400V151MS3	150	30 x 25	0.15	1.659	0.95
LP4-400V181MS1	180	22 x 45	0.15	1.382	1.0
LP4-400V181MS2	180	25 x 35	0.15	1.382	1.0
LP4-400V181MS3	180	30 x 30	0.15	1.382	1.1
LP4-400V181MS4	180	35 x 25	0.15	1.382	1.2
LP4-400V221MS1	220	22 x 50	0.15	1.131	1.1
LP4-400V221MS2	220	25 x 40	0.15	1.131	1.2
LP4-400V221MS3	220	30 x 35	0.15	1.131	1.2
LP4-400V271MS2	270	25 x 45	0.15	0.922	1.3
LP4-400V271MS3	270	30 x 40	0.15	0.922	1.4
LP4-400V271MS4	270	35 x 30	0.15	0.922	1.5
LP4-400V331MS3	330	30 x 45	0.15	0.754	1.6
LP4-400V331MS4	330	35 x 35	0.15	0.754	1.7
LP4-400V391MS3	390	30 x 50	0.15	0.638	1.8

Note: ESR 120 Hz at 20°C

Allowable Ripple Current 120 Hz at 85°C

## LP4 Large Capacitance Aluminum Electrolytic Capacitors

### Standard Ratings

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-400V391MS4	390	35 x 40	0.15	0.638	1.8
LP4-400V471MS4	470	35 x 45	0.15	0.529	2.1
LP4-400V561MS4	560	35 x 50	0.15	0.444	2.3
<b>450 V</b>					
LP4-450V390MS1	39	22 x 20	0.15	6.380	0.39
LP4-450V560MS2	56	25 x 20	0.15	4.443	0.50
LP4-450V680MS1	68	22 x 30	0.15	3.659	0.57
LP4-450V820MS3	82	30 x 20	0.15	3.034	0.67
LP4-450V101MS1	100	22 x 35	0.15	2.488	0.72
LP4-450V101MS2	100	25 x 30	0.15	2.488	0.73
LP4-450V101MS4	100	35 x 20	0.15	2.488	0.83
LP4-450V121MS1	120	22 x 40	0.15	2.073	0.80
LP4-450V121MS2	120	25 x 35	0.15	2.073	0.83

ELNA PART NO. / WV (V)	CAP. (μF)	SIZE (φ x L) (mm)	tan δ	ESR (Ω)	Ripple Current (Arms)
LP4-450V151MS1	150	22 x 50	0.15	1.659	0.95
LP4-450V151MS2	150	25 x 40	0.15	1.659	0.95
LP4-450V151MS3	150	30 x 30	0.15	1.659	0.98
LP4-450V181MS2	180	25 x 45	0.15	1.382	1.1
LP4-450V181MS3	180	30 x 35	0.15	1.382	1.1
LP4-450V181MS4	180	35 x 25	0.15	1.382	1.2
LP4-450V221MS2	220	25 x 50	0.15	1.131	1.2
LP4-450V221MS3	220	30 x 40	0.15	1.131	1.3
LP4-450V221MS4	220	35 x 30	0.15	1.131	1.3
LP4-450V271MS3	270	30 x 45	0.15	0.922	1.4
LP4-450V271MS4	270	35 x 35	0.15	0.922	1.5
LP4-450V391MS4	390	35 x 45	0.15	0.638	1.9
LP4-450V471MS4	470	35 x 50	0.15	0.529	2.2

Note: ESR 120 Hz at 20°C  
Allowable Ripple Current 120 Hz at 85°C

Large Capacitance

LP4

### Coefficients of Frequency for Ripple Current

Frequency (Hz) \ Rated Voltage (V)	50	120	1 k	10 k	20 k
50 or less	0.95	1	1.10	1.15	1.15
63 to 100	0.95	1	1.16	1.30	1.33
160 or more	0.90	1	1.20	1.50	1.55

### Coefficients of Temperature for Ripple Current

Temperature (°C) \ Rated Voltage (V)	+40 or less	+55	+70	+85
100 or less	2.1	1.8	1.5	1
160 or more	1.7	1.5	1.3	1