

# LP Series

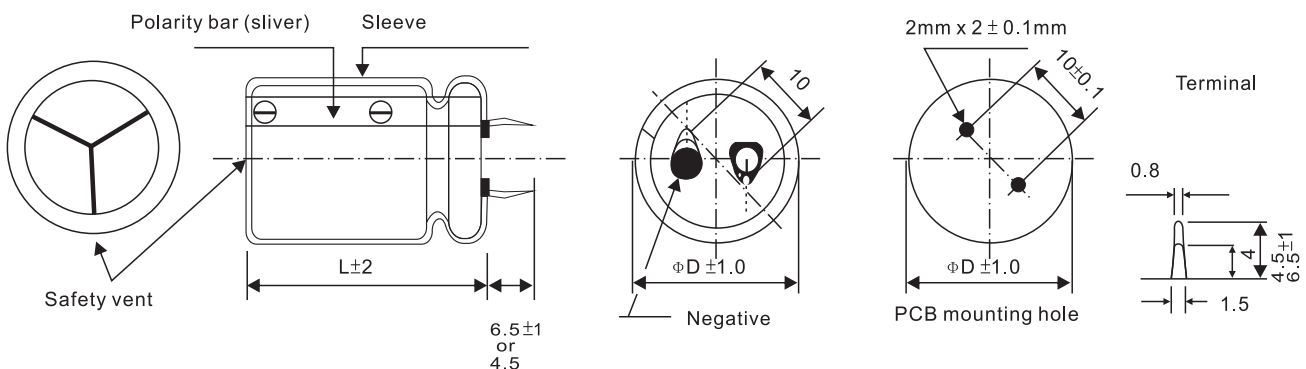
- Standard series General purples
- Endurance:85°C 2000 hours (紋波疊加)
- ROHS Compliance



• SPECIFICATIONS

Items	Characteristics																																											
Category	- 40 to +85°C	- 25 to +85°C																																										
Temperature Range																																												
Rated Voltage Range	10 to 100 Vdc	160 to 450 Vdc																																										
Capacitance Tolerance	± 20% (M) (at 20°C ,120Hz)																																											
Leakage Current	I=0.02CV, (3mA max) whichever is greater. (at 20°C, after 2 minutes) Where, I :Max. Leakage current (µA). C : Nominal capacitance (µF) .V :Rated voltage(V)																																											
Dissipation Factor (tan δ)	<table border="1"> <thead> <tr> <th>Rated voltage (Vdc)</th> <th>10v</th> <th>16v</th> <th>25v</th> <th>35v</th> <th>50v</th> <th>63v</th> <th>80v</th> <th>100v</th> <th>160v</th> <th>200v</th> <th>250v</th> <th>400v</th> <th>450v</th> </tr> </thead> <tbody> <tr> <td>tan δ (Max.)</td> <td>0.55</td> <td>0.50</td> <td>0.45</td> <td>0.40</td> <td>0.35</td> <td>0.30</td> <td>0.25</td> <td>0.20</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.20</td> <td>0.20</td> </tr> </tbody> </table> (at 20°C , 120Hz)		Rated voltage (Vdc)	10v	16v	25v	35v	50v	63v	80v	100v	160v	200v	250v	400v	450v	tan δ (Max.)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.15	0.20	0.20														
Rated voltage (Vdc)	10v	16v	25v	35v	50v	63v	80v	100v	160v	200v	250v	400v	450v																															
tan δ (Max.)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.15	0.20	0.20																															
Low Temperature Characteristics	Impedance ration max at 120Hz <table border="1"> <thead> <tr> <th>Working voltage</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400~450</th> </tr> </thead> <tbody> <tr> <td>Z-25°C/ Z+20°C</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>4</td> <td>8</td> <td>8</td> </tr> <tr> <td>Z-40°C/ Z+20°C</td> <td>15</td> <td>15</td> <td>10</td> <td>8</td> <td>6</td> <td>5</td> <td>4</td> <td>4</td> <td>8</td> <td>10</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Working voltage	10	16	25	35	50	63	80	100	160	200	250	350	400~450	Z-25°C/ Z+20°C	4	4	3	3	2	2	4	4	4	4	4	8	8	Z-40°C/ Z+20°C	15	15	10	8	6	5	4	4	8	10			
Working voltage	10	16	25	35	50	63	80	100	160	200	250	350	400~450																															
Z-25°C/ Z+20°C	4	4	3	3	2	2	4	4	4	4	4	8	8																															
Z-40°C/ Z+20°C	15	15	10	8	6	5	4	4	8	10																																		
Load. Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the voltage is applied for 2000 hours at 85°C <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tan δ)</td> <td>≤ 200 % of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ The initial specified value</td> </tr> </tbody> </table>		Capacitance change	≤ ±20% of the initial value	DF (tan δ)	≤ 200 % of the initial specified value	Leakage current	≤ The initial specified value																																				
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Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing for 1000 hours at 85°C without voltage applied. <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tan δ)</td> <td>≤ 200 % of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ The initial specified value</td> </tr> </tbody> </table>		Capacitance change	≤ ±20% of the initial value	DF (tan δ)	≤ 200 % of the initial specified value	Leakage current	≤ The initial specified value																																				
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• Diagram: (Unit: mm)



Chip Type SMD

Miniature Type

General Purpose

High Frequency  
Low Impedance

High Voltage  
High Reliability

Non-polar Type

Large Size  
Snap-in

Large Size  
Screw

X Metallized  
Polypropylene  
Film Capacitors

## LARGE ALUMINUM ELECTROLYTIC CAPACITORS LP Snap-in 85°C

CAP(μF)	Vdc		10v						16v							
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ				
6800																
8200									22*25	2.56						
10000									22*30	2.81						
12000	22*25	2.41							22*30	3.31	25*25	2.96				
15000	22*30	2.88	25*25	2.88					22*35	3.69	25*30	3.64	30*25	3.73		
18000	22*35	3.22	25*30	3.08					22*40	3.98	25*35	3.98	30*30	3.88		
22000	22*40	3.79	25*30	3.66	30*25	3.53			22*50	4.52	25*40	4.44	30*30	4.38		
27000	22*45	4.04	25*35	4.04	30*30	3.99					25*45	4.98	30*35	4.82	35*30	4.82
33000	22*50	4.58	25*40	4.56	30*30	4.58					25*50	5.49	30*40	5.38	35*35	5.33
39000			25*45	5.29	30*35	5.21	35*30	5.05					30*45	6.11	35*35	6.01
47000			25*50	5.78	30*40	5.78	35*35	5.55					30*50	6.80	35*40	6.80
56000					30*45	6.59	35*35	6.40							35*45	7.62
68000					30*50	7.50	35*40	7.48								
82000							35*50	8.50								

CAP(μF)	Vdc		25v				35v								
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ							
2700															
3300															
3900								22*25	2.22						
4700								22*30	2.46	25*25	2.43				
5600	22*25	2.31						22*35	2.79	25*30	2.75				
6800	22*30	2.56						22*40	2.89	25*30	2.89	30*25	3.09		
8200	22*35	2.81	25*25	2.78				22*45	3.47	25*35	3.33	30*30	3.29		
10000	22*35	3.18	25*30	3.16				22*50	3.59	25*40	3.59	30*30	3.61		
12000	22*40	3.53	25*35	3.48	30*25	3.53				25*45	4.01	30*35	4.01	35*30	4.02
15000	22*50	4.08	25*40	4.00	30*30	4.00						30*40	4.80	35*35	4.80
18000			25*45	4.68	30*35	4.66	35*30	4.68				30*45	5.18	35*40	5.71
22000					30*40	5.19	35*35	5.20						35*45	6.38
27000					30*45	6.02	35*40	6.02						35*50	6.90

CAP(μF)	Vdc		50v				63v								
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ							
1800								22*25	1.90						
2200	22*25	1.93						22*30	2.35	25*25	2.30				
2700	22*30	2.21						22*35	2.50	25*30	2.49				
3300	22*30	2.41	25*25	2.38				22*40	2.69	25*30	2.69	30*25	2.78		
3900	22*35	2.72	25*30	2.68				22*45	3.10	25*40	3.25	30*30	3.09		
4700	22*40	3.01	25*30	3.03	30*25	3.01		22*50	3.49	25*40	3.37	30*30	3.37	35*25	3.30
5600	22*45	3.43	25*35	3.37	30*30	3.43				25*45	3.80	30*35	3.81	35*30	3.75
6800	22*50	3.94	25*40	3.87	30*35	3.87				25*50	4.41	30*40	4.41	35*35	4.33
8200			25*45	4.37	30*35	4.41	35*30	4.41				30*45	4.90	35*35	4.80
10000					30*40	5.02	35*35	4.92				30*50	5.49	35*40	5.47
12000					30*50	5.60	35*40	5.60						35*50	6.30
15000							35*45	6.44							

Max ripple current:Arms/120Hz 85°C Size: D φ x L (mm)



CAP(μF)	Vdc		80v								100v							
			22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
820										22*25	1.86							
1000										22*30	2.02							
1200			22*25	1.77						22*30	2.12	25*25	2.10					
1500			22*30	2.01						22*35	2.45	25*30	2.43					
1800			22*35	2.25	25*25	2.26				22*40	2.77	25*35	2.77	30*25	2.65			
2200			22*40	2.53	25*30	2.53	30*25	2.50		22*45	3.12	25*40	3.20	30*30	3.10			
2700			22*45	2.93	25*35	2.93	30*30	2.91				25*45	3.61	30*35	3.60	35*30	3.71	
3300			22*50	3.25	25*40	3.25	30*30	3.23				25*50	4.06	30*40	4.05	35*35	4.07	
3900					25*45	3.62	30*35	3.62						30*45	4.60	35*35	4.50	
4700					25*50	4.28	30*35	4.15	35*30	4.10				30*50	5.13	35*40	5.12	
5600							30*45	4.55	35*35	4.51						35*45	5.17	
6800							30*50	5.18	35*40	5.14				30*60	6.01	35*50	6.01	
8200									35*45	5.83								
10000									35*50	6.20						35*60	6.95	

CAP(μF)	Vdc		160v								200v							
			22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
180										22*25	0.98							
220										22*30	1.36							
270										22*30	1.50							
330										22*35	1.89	25*30	1.89					
390			22*25	1.55						22*35	1.92	25*30	1.92					
470			22*30	1.77	25*25	1.77				22*40	2.23	25*35	2.23	30*25	2.23			
560			22*35	2.05	25*30	2.05				22*45	2.57	25*40	2.57	30*30	2.57			
680			22*40	2.24	25*30	2.22	30*25	2.22		22*45	2.36	25*40	2.36	30*30	2.36			
820			22*45	2.55	25*35	2.52	30*30	2.51		22*50	2.68	25*40	2.66	30*35	2.62			
1000			22*50	2.88	25*40	2.86	30*30	2.82		22*50	3.10	25*45	3.12	30*35	3.00			
1200					25*45	3.27	30*35	3.25	35*30	3.24			25*45	3.25	30*40	3.44		
1500							30*40	3.77	35*35	3.75			25*50	3.65	30*50	3.93		
1800							30*45	4.10	35*35	4.08					35*45	4.37		
2200									35*45	4.72					35*50	5.00		

CAP(μF)	Vdc		250v								350v							
			22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
120										22*25	0.99							
150										22*30	1.44	25*25	1.16					
180										22*35	1.28	25*30	1.30					
220			22*25	1.18						22*40	1.40	25*35	1.46					
270			22*30	1.43						22*45	1.62	25*35	1.65	30*30	1.71			
330			22*40	1.58	25*25	1.53				22*50	1.78	25*40	1.88	30*35	1.93			
390			22*40	1.79	25*30	1.79						25*45	2.04	30*35	2.12	35*30	2.19	
470			22*45	2.05	25*35	2.05	30*25	1.94						30*40	2.41	35*35	2.43	
560			22*45	2.36	25*35	2.24	30*30	2.24						30*45	2.60	35*35	2.62	
680					25*45	2.54	30*35	2.58								35*40	3.00	
820					25*45	2.87	30*35	2.84	35*30	2.82						35*50	3.30	

Max ripple current:Arms/120Hz 85°C Size: Dφ x L (mm)

Chip Type SMD  
Miniature Type  
General Purpose  
High Frequency Low Impedance  
High Voltage High Reliability  
Non-polar Type  
Large Size Snap-In  
Large Size Screw  
X Metallized Polypropylene Film Capacitors



◆ LARGE ALUMINUM ELECTROLYTIC CAPACITORS LP Snap-in 85°C

Vdc CAP(μF)	400v								450v							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
47	22*25	0.42							22*25	0.36						
56	22*25	0.47							22*25	0.47						
68	22*25	0.51							22*25	0.68						
82	22*25	0.80							22*30	0.82						
100	22*30	0.94							22*35	0.90	25*25	0.92				
120	22*30	1.04	25*25	1.08					22*35	1.02	25*30	1.04	30*25	1.07		
150	22*35	1.18	25*30	1.21					22*40	1.12	25*35	1.19	30*30	1.23		
180	22*40	1.34	25*35	1.37	30*25	1.45			22*45	1.20	25*40	1.33	30*30	1.38		
220	22*50	1.50	25*35	1.56	30*30	1.58					25*45	1.51	30*35	1.56	35*30	1.58
270			25*40	1.70	30*35	1.73					25*50	1.65	30*40	1.80	35*35	1.81
330			25*50	1.90	30*40	1.95	35*30	1.95					30*45	2.02	35*35	2.05
390					30*45	2.15	35*35	2.17					30*50	2.24	35*40	2.27
470					30*50	2.39	35*40	2.42							35*45	2.55
560							35*45	2.71								
680							35*50	2.95								

Max ripple current:Arms/120Hz 85°C Size: D φ x L (mm)

● Ripple CurRent / Frequency Multiplier

Vdc \ Freq	60	120	1k	10k up
10~100v	0.9	1.00	1.15	1.25
160~250v	0.8	1.00	1.15	1.45
350v up	0.8	1.00	1.15	1.47

● Temperature coefficient

Temperature(°C)	~55	60	70	85
Factor	1.65	1.5	1.3	1