

LP Series

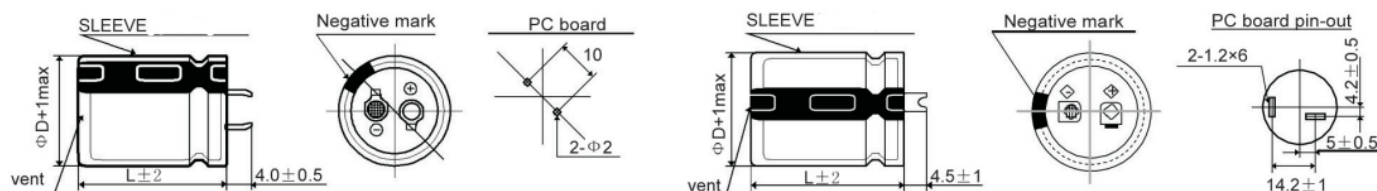
- Withstand high temperature for General purpose
- Endurance: +105°C 2000 hours
- RoHS Compliant



◆ SPECIFICATIONS

Items	Characteristics												
Category	-40 to +105℃										-25 to +105℃		
Temperature Range													
Rated Voltage Range	10 to 100 V.DC										160 to 500 V.DC		
Capacitance Tolerance	±20%(M)										(at20℃,120HZ)		
Leakage Current	$I \leq 3 \sqrt{CV}$										(at 20℃ after 5 minutes)		
Where, I: Max. leakage current (u A),C: Nominal capacitance(u F), V: Rated voltage(V)													
Dissipation Factor (tanδ)	Rated voltage(V dc)	10	16	25	35	50	63	80	100	160 to 250	315 to 450	500	(at 20℃,120Hz)
	tan δ(Max.)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.20	
Low Temperature	Rated voltage(V dc)	10	16	25	35	50	63	80	100	160 to 250	315 to 400	420 to 500	(at 120Hz)
Characteristics (Max. Impedance Ratio)	Z(-25℃)/Z(+20℃)	4	4	3	3	2	2	2	2	4	8	8	
	Z(-40℃)/Z(+20℃)	15	15	10	8	6	6	5	5	-	-	-	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied for 2,000 hours at 105℃.												
	Capacitance change	≤20% of the initial value											
	D.F.(tanδ)	≤200% of the initial specified value											
	Leakage current	≤The initial specified value											
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000 hours at 105℃ without voltage applied.												
	Capacitance change	≤20% of the initial value											
	D.F.(tanδ)	≤150% of the initial specified value											
	Leakage current	≤200% of The initial specified value											

◆ DIMENSIONS (mm)



◆ RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current(Hz)

W.V	120	1K	10K	100K
10 to 50	1.00	1.03	1.05	1.08
63 to 100	1.00	1.07	1.13	1.19
160 to 250	1.00	1.32	1.45	1.50
315 to 500	1.00	1.30	1.41	1.43

The endurance of capacitors is shorted with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the r.ms ripple current has to be reduced.

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◆ STANDARD RATINGS

Ripple current(A r.ms /105℃, 120Hz)

WV	10 (1A)								16 (1C)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
5600																
6800									22x25	1.75						
8200									22x30	2.00						
10000	22x25	1.77							22x30	2.10	25x25	2.05				
12000	22x30	2.10	25x25	1.94					22x35	2.31	25x30	2.30	30x25	2.30		
15000	22x35	2.23	25x30	2.10					22x40	2.68	25x35	2.58	30x30	2.57		
18000	22x40	2.41	25x30	2.34	30x25	2.25			22x50	3.20	25x40	3.16	30x30	2.98		
22000	22x45	2.58	25x35	2.54	30x30	2.50					25x45	3.36	30x35	3.30	35x30	3.25
27000	22x50	3.17	25x40	3.07	30x30	2.95					25x50	3.85	30x40	3.80	35x35	3.93
33000			25x45	3.09	30x35	3.33	35x30	3.21					30x45	4.30	35x35	4.27
39000					30x40	3.70	35x35	3.68					30x50	4.81	35x40	4.80
47000					30x45	4.22	35x40	4.16							35x45	5.53
56000							35x45	5.00								
WV	25 (1E)								35 (1V)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
2700																
3300									22x25	1.45						
3900									22x30	1.69						
4700	22x25	1.61							22x35	2.02	25x25	1.62				
5600	22x30	1.80							22x35	2.13	25x30	2.00				
6800	22x35	2.09	25x25	1.87					22x40	2.41	25x35	2.31	30x25	2.31		
8200	22x40	2.31	25x30	2.34	30x25	2.16			22x50	2.85	25x40	2.73	30x30	2.75		
10000	22x45	2.65	25x35	2.61	30x30	2.61					25x45	3.05	30x35	3.05		
12000	22x50	2.80	25x40	2.81	30x30	2.74					25x50	3.37	30x40	3.23	35x30	3.19
15000			25x45	3.27	30x35	3.13	35x30	3.26					30x45	3.72	35x35	3.67
18000					30x40	3.56	35x35	3.84							35x35	4.37
22000					30x45	4.04	35x35	3.75							35x40	4.92
27000							35x45	4.74								
33000							35x50	5.50								
WV	50 (1H)								63 (1J)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
1000																
1200									22x25	1.20						
1500									22x30	1.47						
1800	22x25	1.34							22x30	1.58	25x25	1.52				
2200	22x30	1.60							22x35	1.82	25x30	1.75				
2700	22x30	1.70	25x25	1.70					22x40	2.07	25x35	2.11	30x25	1.72		
3300	22x35	1.97	25x30	1.88					22x45	2.33	25x35	2.27	30x30	2.24		
3900	22x40	2.22	25x30	2.20	30x25	1.95					25x40	2.51	30x35	2.55		
4700	22x45	2.43	25x35	2.43	30x30	2.25					25x50	2.97	30x40	2.86	35x30	2.80
5600	22x50	2.75	25x40	2.72	30x30	2.64							30x40	3.22	35x35	3.20
6800			25x45	3.30	30x35	3.30	35x30	3.25					30x50	3.65	35x40	3.65
8200					30x40	3.6	35x35	3.60							35x45	4.04
10000					30x50	4.05	35x40	4.04							35x50	4.48
12000							35x45	4.56								
15000							35x50	4.77								

LP Series

◆ STANDARD RATINGS

Ripple current(A r.ms /105℃, 120Hz)

WV	80 (1K)								100 (2A)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
560																
680									22×25	1.09						
820									22×30	1.32						
1000	22×25	1.19							22×30	1.47	25×25	1.45				
1200	22×30	1.44							22×35	1.69	25×30	1.68				
1500	22×30	1.59	25×25	1.59					22×40	1.97	25×35	1.98	30×25	1.95		
1800	22×35	1.79	25×30	1.71					22×45	2.23	25×40	2.20	30×30	2.20		
2200	22×40	2.03	25×35	1.98	30×25	1.98					25×45	2.53	30×35	2.55	35×30	2.50
2700	22×45	2.39	25×40	2.35	30×30	2.35					25×50	2.82	30×40	2.86	35×35	2.89
3300			25×45	2.64	30×35	2.61	35×30	2.74					30×45	3.30	35×35	3.25
3900			25×50	2.92	30×40	2.82	35×30	2.97					30×50	3.60	35×40	3.67
4700					30×45	3.34	35×35	3.38							35×45	3.80
5600					30×50	3.80	35×40	3.80							35×50	4.05
6800							35×45	3.90								
8200							35×50	4.20								
WV	160 (2C)								180 (2Q)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
220	22×25	0.92														
270									22×25	0.97						
330	22×25	1.03							22×30	1.13						
390	22×30	1.17							22×30	1.32	25×25	1.33				
470	22×30	1.28	25×25	1.29					22×35	1.39	25×30	1.43				
560	22×35	1.45	25×30	1.49					22×40	1.56	25×30	1.53	30×25	1.56		
680	22×40	1.64	25×35	1.70	30×25	1.63			22×45	1.76	25×35	1.76	30×30	1.74		
820	22×45	1.85	25×40	1.92	30×30	1.91			22×50	1.97	25×40	1.99	30×30	1.93		
1000			25×45	2.17	30×35	2.19					25×45	2.24	30×35	2.24	35×30	2.20
1200			25×50	2.43	30×40	2.48	35×30	2.25					30×40	2.53	35×35	2.54
1500					30×45	2.82	35×35	2.62					30×50	3.03	35×40	2.91
1800					30×50	3.13	35×40	2.97							35×45	3.25
2200							35×45	3.34							35×50	3.62
WV	200 (2D)								220 (2N)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
180																
220									22×25	0.94						
270	22×25	0.99							22×30	1.09						
330	22×30	1.20	25×25	1.20					22×35	1.24	25×25	1.14				
390	22×35	1.30	25×30	1.34					22×35	1.30	25×25	1.26				
470	22×40	1.44	25×30	1.44	30×25	1.48			22×40	1.41	25×30	1.39	30×25	1.37		
560	22×45	1.60	25×35	1.60	30×30	1.60			22×45	1.60	25×35	1.56	30×30	1.61	35×25	1.52
680	22×50	1.75	25×40	1.76	30×30	1.74					25×40	1.75	30×35	1.76	35×30	1.72
820			25×45	2.10	30×35	2.11	35×30	2.10			25×45	1.97	30×40	2.06	35×30	1.95
1000			25×50	2.36	30×40	2.40	35×35	2.30					30×45	2.44	35×35	2.20
1200					30×45	2.69	35×35	2.53							35×40	2.37
1500							35×40	2.97							35×45	2.64
1800							35×50	3.45								

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◆ STANDARD RATINGS

Ripple current(A r.ms /105℃, 120Hz)

WV	250 (2E)								315 (2F)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
82																
100																
120									22×25	0.56						
150									22×30	0.66	25×25	0.65				
180	22×25	0.84							22×35	0.78	25×30	0.71				
220	22×30	0.97	25×25	0.99					22×40	0.89	25×30	0.85	30×25	0.83		
270	22×35	1.11	25×30	1.15					22×45	1.01	25×35	0.98	30×30	1.01		
330	22×40	1.26	25×30	1.26	30×25	1.31			22×50	1.14	25×40	1.12	30×35	1.21		
390	22×45	1.41	25×35	1.42	30×30	1.5					25×45	1.31	30×35	1.30	35×30	1.23
470	22×50	1.58	25×40	1.61	30×30	1.61							30×40	1.53	35×35	1.47
560			25×45	1.80	30×35	1.84							30×45	1.65	35×40	1.66
680			25×50	2.03	30×40	2.09	35×30	1.96							35×45	1.96
820					30×45	2.35	35×35	2.26							35×50	2.19
1000					30×50	2.64	35×40	2.57								
1200							35×45	2.88								
WV	350 (2V)								385 (2P)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
56																
68									22×25	0.45						
82									22×30	0.52						
100	22×25	0.53							22×30	0.58	25×25	0.57				
120	22×30	0.61	25×25	0.62					22×35	0.68	25×30	0.68				
150	22×35	0.73	25×30	0.73					22×40	0.79	25×30	0.78	30×25	0.75		
180	22×40	0.83	25×30	0.80	30×25	0.81			22×45	0.89	25×35	0.86	30×30	0.88		
220	22×45	0.94	25×35	0.92	30×30	0.98			22×50	1.01	25×40	1.00	30×30	1.00		
270	22×50	1.07	25×40	1.05	30×30	1.03					25×45	1.13	30×40	1.14	35×30	1.10
330			25×45	1.24	30×35	1.24	35×30	1.18					30×45	1.31	35×35	1.32
390			25×50	1.38	30×40	1.39	35×35	1.39					30×50	1.48	35×40	1.48
470					30×45	1.57	35×35	1.50							35×45	1.76
560					30×50	1.75	35×40	1.69							35×50	1.95
680							35×45	1.96								
WV	400 (2G)								420 (2T)							
$\frac{\phi D}{u F}$	$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$		$\phi 22$		$\phi 25$		$\phi 30$		$\phi 35$	
56																
68	22x25	0.49							22x25	0.50						
82	22x30	0.56							22x30	0.56	25x25	0.56				
100	22x30	0.62	25x25	0.61					22x30	0.63	25x25	0.63				
120	22x35	0.73	25x30	0.73					22x35	0.73	25x30	0.72	30x25	0.75		
150	22x40	0.85	25x35	0.85	30x25	0.79			22x45	0.86	25x35	0.83	30x25	0.83		
180	22x45	0.95	25x35	0.92	30x30	0.95			22x50	1.02	25x40	0.94	30x30	0.95	35x25	0.90
220	22x50	1.08	25x40	1.05	30x35	1.24					25x45	1.13	30x35	1.09	35x30	1.05
270			25x50	1.29	30x40	1.30	35x30	1.18			25x50	1.37	30x40	1.25	35x35	1.25
330					30x45	1.47	35x35	1.14					30x45	1.49	35x35	1.42
390					30x50	1.64	35x40	1.59					30x50	1.67	35x40	1.61
470							35x45	1.87							35x45	1.86
560							35x50	2.09								

