

LP Series Snap-in Type 85°C

Features

- ◆ Directly mountable on printed circuit board, without holders.
- ◆ Aluminum case designed explosion-proof vent.
- ◆ RoHS Compliant



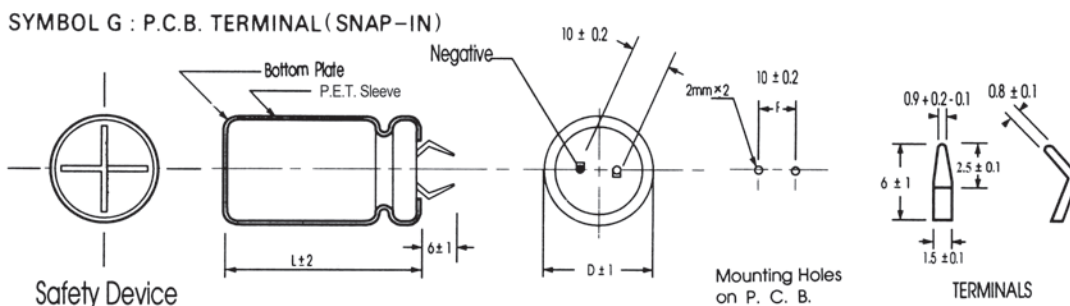
Specifications

Item	Performance Characteristics										
Operating Temperature Range	-40 to +85°C	-25 to +85°C									
Rated Voltage Range	10 to 100 VDC	160 to 450 VDC									
Capacitance Range	470 to 68000 μF	47 to 2700 μF									
Capacitance Tolerance	±20% (120Hz, +20°C)										
Leakage Current (+20°C, max.)	I ≤ 0.02CV After 5 minutes with rated working voltage applied.										
Dissipation Factor (tan δ, at 20°C, 120Hz)	Less than the value under table (%)										
	μF \ VDC	10~16	25~35	50~63	80~100	160~250	315~450				
	47~390	—	—	—	—	15	20				
	470~3900	25	20	20	20	15	20				
	4700~8200	35	30	30	25	—	—				
	10000~22000	40	35	30	30	—	—				
	27000~47000	45	40	35	—	—	—				
Low Temperature Characteristics (at 120Hz)	Impedance ratio max.										
	Rated voltage(V)	10	16	25	35	50	63	100	160	200~250	400~450
	Z - 25°C / Z+20°C	5	5	4	4	4	4	4	4	4	8
Endurance	Test conditions										
	Duration time	:2000 Hrs									
Shelf Life	Test conditions										
	Duration time	:1000 Hrs									

Multiplier for Ripple Current vs. Frequency

CAP(μF) \ Frequency(Hz)	50(60)	120	1K	10K	50K-100K
10 < CAP ≤ 100	0.8	1	1.36	1.48	1.53
100 < CAP ≤ 1000	0.8	1	1.25	1.35	1.38
1000 < CAP	0.8	1	1.17	1.25	1.28

Diagram of Dimensions:(unit:mm)



Case Size

φ D x L (mm)

Cap (μF)	φ D	10								16							
		22		25		30		35		22		25		30		35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
4700		22x20	2.40							22x20	2.40						
6800		22x25	2.84							22x25	2.84						
8200		22x25	2.90							22x25	2.90						
10000		22x30	3.06	25x25	3.06					22x30	3.06	25x25	3.06				
12000		22x30	3.43	25x25	3.43					22x30	3.43	25x25	3.43				
15000		22x35	3.94	25x30	3.94					22x35	3.94	25x30	3.94				
18000		22x40	4.34	25x30	4.34					22x40	4.34	25x30	4.34				
22000		22x45	4.80	25x35	4.80	30x30	4.80			22x45	4.80	25x35	4.80	30x30	4.80		
27000				25x45	7.57	30x35	7.57					25x45	7.57	30x35	7.57		
33000				25x50	8.20	30x40	8.20	35x30	8.20			25x50	8.20	30x40	8.20	35x30	8.20
39000						30x45	8.33	35x35	8.33					30x45	8.33	35x35	8.33
47000						30x50	8.96	35x40	8.93					30x50	8.96	35x40	8.96
56000								35x45	10.5					30x55	10.5	35x50	10.8
68000								35x50	10.8								

Cap (μF)	φ D	25								35							
		22		25		30		35		22		25		30		35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
2200										22x20	2.00						
										22x25	2.18						
3300										22x25	2.46						
										22x25	2.50						
										22x30	2.64						
4700		22x25	2.64							22x30	2.68	25x25	2.68				
		22x25	2.72							22x30	2.72	25x25	2.72				
		22x30	2.78														
6800		22x30	2.93	25x25	2.93					22x35	3.06	25x30	3.06				
8200		22x30	3.05	25x25	3.05					22x40	3.29	25x35	3.34				
10000		22x35	3.43	25x30	3.43	30x25	3.43			22x45	3.60	25x40	3.60	30x30	3.60		
12000		22x40	3.84	25x35	3.84	30x30	3.84			22x50	3.80	25x45	3.80	30x35	3.80	35x30	3.80
15000		22x50	4.39	25x40	4.39	30x30	4.39					25x50	3.92	30x40	3.92	35x30	3.92
18000				25x45	4.80	30x35	4.80							30x45	4.70	35x35	4.70
22000				25x50	5.40	30x40	5.40							30x50	5.45	35x40	5.45
27000						30x45	5.97	35x35	5.97							35x45	5.78
33000						30x50	6.24	35x40	6.24							35x50	6.36
39000								35x45	7.10								
47000								35x50	7.60								

Cap (μF)	φ D	50								63							
		22		25		30		35		22		25		30		35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1000										22x20	1.50						
										22x25	1.58						
1500		22x25	1.44							22x25	1.68						
2200		22x25	2.04							22x30	2.52	25x25	2.52				
2700		22x30	2.30							22x35	2.82	25x30	2.82				
3300		22x30	2.64	25x25	2.64					22x40	3.12	25x30	3.12	30x25	3.12		
3900		22x30	2.72	25x25	2.72					22x45	3.21	25x35	3.21	30x30	3.21		
4700		22x35	2.88	25x30	2.88	30x25	2.88			22x50	3.28	25x40	3.28			35x25	3.28
5600		22x40	3.06	25x35	3.06	30x30	3.06					25x45	3.86	30x35	3.86	35x30	3.86
6800		22x50	3.24	25x40	3.24	30x30	3.24					25x50	4.32	30x40	4.32	35x30	4.32
8200				25x45	3.48	30x35	3.48							30x45	4.44	35x35	4.44
10000				25x50	3.96	30x40	3.96	35x30	3.96							35x45	4.77
12000						30x45	4.10	35x35	4.10								
15000						30x50	4.70	35x40	4.70							35x60	5.04
18000								35x45	5.31								
22000								35x50	5.85								

Ripple Current (A, rms) at 85°C 120Hz

φ DxL(mm)

WV Cap (μF) φ D	80								100								
	22		25		30		35		22		25		30		35		
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
470										22x20	1.34						
680	22x20	1.25															
	22x25	1.34								22x25	1.53						
1000	22x25	1.62								22x30	1.62	25x25	1.62				
	22x30	1.65								22x30	1.65	25x30	1.74				
1200										22x35	1.74						
	1500	22x30	1.76	25x25	1.76					22x35	1.72	25x35	1.85	30x30	1.85		
										22x40	1.85						
1800	22x35	1.82	25x30	1.82						22x40	2.05	25x40	2.20	30x30	2.20		
										22x45	2.20						
2200	22x40	2.52	25x30	2.52	30x25	2.52				22x45	2.52	25x40	2.64	30x30	2.64		
										22x50	2.64						
2700	22x45	2.76	25x35	2.76	30x30	2.76				22x50	3.08	25x45	3.16	30x35	3.16		
3300	22x50	3.24	25x40	3.24	30x30	3.24						25x50	3.42	30x40	3.42		
3900			25x45	3.40	30x35	3.40								30x45	3.58	35x35	3.58
4700			25x50	3.60	30x40	3.60								30x50	3.72	35x40	3.72
5600					30x45	3.78	35x35	3.78								35x45	3.78
6800					30x50	4.60	35x40	4.60								35x50	4.1
8200							35x50	4.92									
10000							35x60	5.04									

WV Cap (μF) φ D	160								200								
	22		25		30		35		22		25		30		35		
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
150										22x20	0.96						
180										22x20	0.98						
										22x25	1						
220	22x20	1.16								22x25	1.36						
	22x25	1.2															
270	22x25	1.35								22x25	1.46						
										22x30	1.5						
330	22x35	1.39								22x30	1.89	25x25	1.89				
	22x30	1.44															
390	22x30	1.66	25x25	1.66						22x30	1.92	25x30	1.92				
	22x30	1.7	25x30	1.76						22x30	2.09						
470	22x35	1.76								22x35	2.23	25x30	2.23	30x25	2.23		
	22x35	2.03	25x30	2.03	30x25	2.03				22x40	2.43	25x35	2.43	30x25	2.43		
560										22x45	2.57	25x40	2.57				
	680	22x40	2.36	25x35	2.36	30x30	2.36			22x45	2.8	25x30	2.8	30x30	2.8		
											25x35	2.98					
820	22x45	2.72	25x40	2.72	30x30	2.57				22x50	3.26	25x45	3.26	30x35	3.26	35x25	3.26
					30x35	2.72											
1000			25x45	3.13								25x45	3.74				
					30x40	3.13	35x30	3.13				25x50	3.92	30x40	3.92	35x30	3.92
1200			25x50	3.44	30x35	3.44	35x30	3.25						30x45	4.25	35x35	4.25
							35x35	3.44									
1500					30x45	3.96	35x35	3.96						30x50	4.99	35x40	4.99
1800					30x50	4.47	35x40	4.47								35x45	5.84
2200							35x45	4.65								35x50	6.07
2700							35x50	4.76									

WV Cap (μF) φ D	220								250								
	22		25		30		35		22		25		30		35		
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
120										22x20	0.85						
150										22x20	0.9						
										22x25	0.98						
180	22x20	0.75								22x25	1.05						
	22x25	0.87								22x30	1.12						
220	22x25	0.95								22x25	1.26						
										22x30	1.36	25x25	1.36				
270	22x30	1.22								22x30	1.6	25x30	1.72				
	22x30	1.3	25x25	1.3													
330	22x30	1.55								22x30	1.75	25x25	1.74				
			25x25	1.55						22x35	1.87	25x30	1.87	30x25	1.87		
390	22x30	1.57								22x40	2.04	25x35	2.04	30x30	2.04		
	22x35	1.65	25x30	1.65													
470	22x35	1.75								22x45	2.38	25x40	2.38	30x30	2.38		
	22x40	1.85	25x35	1.85	30x25	1.85											
560	22x40	2.1	25x35	2.1						22x50	2.74	25x45	2.81	30x35	2.81	35x25	2.81
	22x45	2.2	25x40	2.2	30x30	2.2	35x25	2.2									
680	22x45	2.25	25x40	2.25								25x50	3.11	30x40	3.11	35x30	3.11
	22x50	2.3	25x45	2.3	30x35	2.3	35x25	2.3									
820	22x50	2.54	25x45	2.54	30x40	2.6	35x30	2.6						30x45	3.55	35x35	3.55
			25x50	2.6													
1000			25x50	3.07										30x50	4	35x40	4
			25x55	3.2	30x45	3.2	35x35	3.2									
1200					30x50	3.7	35x40	3.7								35x45	4.55
1500					30x55	3.85	35x45	3.85								35x50	5.34
1800							35x50	4									
2200							35x55	4.2									

φ DxL(mm)

Cap (μF)	φ D	350										400										
		22		25		30		35		40		22		25		30		35		40		
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
47												22x20	0.42									
56																						
68												22x25	0.47									
82												22x30	0.51									
100												22x25	0.83									
												22x25	0.96									
120		22x25	0.76									22x30	1.03	25x25	1.03							
		22x30	0.89	25x25	0.89							22x30	1.07	25x25	1.07							
150		22x30	1.02	25x25	1.02																	
		22x35	1.08	25x30	1.08							22x35	1.26	25x30	1.26	30x25	1.26					
180		22x40	1.15	25x35	1.15	30x25	1.15					22x40	1.46	25x35	1.46	30x25	1.46					
															30x30	1.46						
220												22x40	1.59									
		22x45	1.4	25x40	1.4	30x30	1.4	35x25	1.4			22x50	1.75	25x40	1.75	30x35	1.75					
270			25x45	1.63	30x35	1.63	35x25	1.75					25x45	1.96	30x35	1.96	35x30	1.96				
330			25x50	1.88	30x40	1.88	35x30	1.88					25x50	2.26	30x40	2.26	35x35	2.26				
390					30x45	2.12	35x35	2.12							30x45	2.5	35x40	2.5				
470					30x50	2.41	35x40	2.41							30x45	2.54	35x40	2.67	40x35	2.8		
															30x50	2.66	35x45	2.8				
560																	35x40	2.89				
																	35x45	3.03				
680							35x45	2.9									35x50	3.16	40x45	3.2		
							35x50	3.2									35x45	3.27	40x50	3.69		
820																	35x50	3.41				
																	35x60	3.80				

Cap (μF)	φ D	420										450										
		22		25		30		35		40		22		25		30		35		40		
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
47		22x20	0.38									22x25	0.36									
56		22x25	0.42																			
68												22x25	0.46									
		22x30	0.49									22x30	0.5									
82		22x25	0.79																			
100		22x30	0.85	25x25	0.85							22x30	0.89	25x25	0.89							
		22x35	1.03	25x25	1.03							22x35	1.03	25x30	1.03							
120		22x35	1.12	25x30	1.12							22x40	1.19	25x35	1.19							
		22x35	1.25																			
150		22x40	1.32	25x35	1.32	30x30	1.32					22x50	1.39	25x40	1.39	30x30	1.39					
														25x35	1.37							
180														25x40	1.45							
		22x40	1.38	25x40	1.48	30x35	1.48					22x50	1.52	25x45	1.52	30x35	1.52					
220														25x40	1.6							
		22x45	1.63	25x45	1.75	30x40	1.75	35x30	1.75			22x45	1.76	25x50	1.76	30x40	1.76	35x35	1.76			
270			25x50	1.98	30x45	1.98	35x35	1.98								30x45	2	35x35	2			
330			25x50	2.27			35x40	2.27								30x45	2.29	35x35	2.29			
390							35x45	2.52	40x30	2.52						30x45	2.54	35x40	2.54	40x35	2.54	
470																		35x40	2.76			
560									40x35	2.91								35x45	2.89	40x40	2.89	
									40x40	2.95											40x50	3.26
680									40x50	3.3												

Ripple Current (A, rms) at 85°C 120Hz