



# PL Series

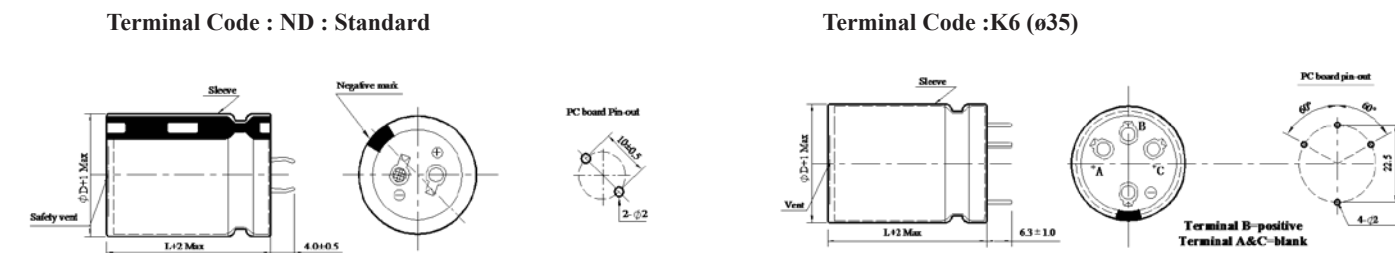
- Load life 2,000 hours at 105°C .
- Large size for PCB board mounting hole type



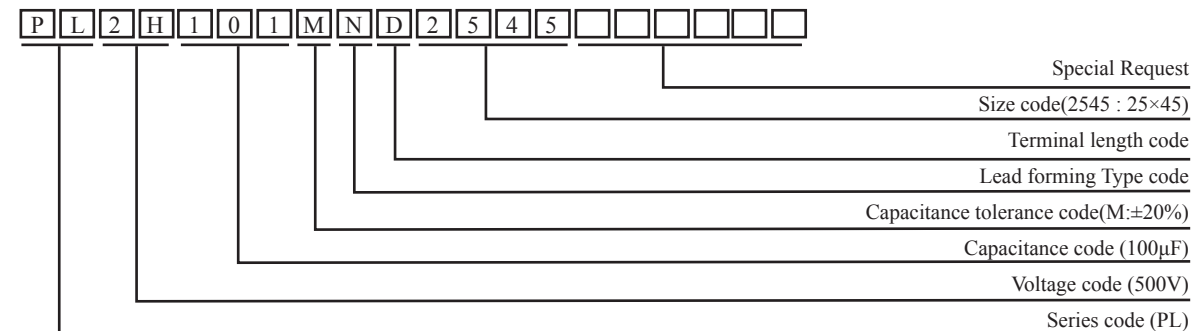
### ◆ SPECIFICATIONS

Item	Performance Characteristics									
	-40 ~ +105°C					-25 ~ +105°C				
Category Temperature Range	-40 ~ +105°C					-25 ~ +105°C				
Working Voltage Range	16 ~ 100Vdc					160 ~ 500Vdc				
Capacitance Range	560 ~ 47,000µF					47 ~ 2,200µF				
Capacitance Tolerance	± 20% (at 25°C and 120Hz)									
Dissipation Factor (tan δ) (at 25°C, 120Hz)	Rated Voltage (V)	16	25	35	50	63	80	100 ~ 250	350 ~ 450	500
	tanδ(Max)	0.35	0.35	0.25	0.25	0.25	0.20	0.15	0.15	0.20
Leakage Current	I=0.02CV or 3000µA, whichever is smaller I : Leakage current (µA) C : Rated capacitance (µF) V : Rated voltage (V) Impress the rated voltage for 5 minutes.									
Endurance	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 2,000 hours (1,000 hours for WV ≒ 100V) at 105°C.									
	Capacitance change	≒ ± 20% of the initial value								
	Dissipation factor(tan δ)	≒ 200% of the specified value								
	Leakage current	≒ specified value								
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 500 hours at 105°C without voltage applied.									
	Capacitance change	≒ ± 20% of the initial value								
	Dissipation factor(tanδ)	≒ 200% of the specified value								
	Leakage current	≒ 200% of the specified value								
Others	Conforms to JIS-C-5101-4 (1998), characteristic W.									

### ◆ DIMENSIONS (mm)



### ◆ PART NUMBERING SYSTEM ( Example : 500V 100µF )



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- ◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

Vdc uF	16								Vdc uF	25							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
6800	22×25	1490							4700	22×25	1425						
10000	22×31	1870	25×25	1870					5600	22×25	1545						
12000	22×35	2100	25×31	2100	30×25	2100			6800	22×31	1765	25×25	1765				
15000	22×41	2450	25×35	2450	30×25	2450			8200	22×35	2000	25×31	2000	30×25	2000		
18000	22×45	2725	25×41	2725	30×31	2725	35×25	2725	10000	22×41	2270	25×35	2270	30×25	2270		
22000			25×45	3150	30×35	3150	35×25	3150	12000	22×45	2600	25×41	2600	30×31	2600	35×25	2600
27000			25×51	3580	30×41	3580	35×31	3580	15000			25×45	3100	30×35	3100	35×31	3100
33000					30×45	4080	35×35	4080	18000			25×51	3360	30×41	3360	35×31	3360
39000					30×51	4565	35×41	4565	22000					30×45	3800	35×35	3800
47000							35×45	5155	27000							35×45	4490

Vdc uF	35								Vdc uF	50							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
3300	22×25	1330							1800	22×25	1260						
3900	22×31	1490							2200	22×31	1600	25×25	1600				
4700	22×31	1630	25×25	1630					3300	22×35	1830	25×31	1830				
5600	22×35	1860	25×31	1860	30×25	1860			3900	22×41	2070	25×35	2070	30×25	2070		
6800	22×41	2090	25×35	2090	30×25	2090			4700	22×45	2355	25×35	2355	30×31	2355	35×25	2355
8200	22×45	2610	25×41	2610	30×31	2610	35×25	2610	5600	22×51	2565	25×41	2565	30×35	2565	35×25	2565
10000			25×45	2755	30×35	2755	35×31	2755	6800			25×51	3135	30×41	3135	35×31	3135
12000			25×51	3075	30×41	3075	35×31	3075	8200					30×45	3420	35×35	3420
15000					30×45	3530	35×35	3530	10000					30×51	3825	35×41	3825
18000							35×41	4150	12000							35×45	4320
22000							35×51	4670	15000								

Vdc uF	63								Vdc uF	80							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
1200	22×25	1130							820	22×25	1050						
1500	22×25	1260							1000	22×25	1155						
1800	22×31	1440	25×25	1440					1200	22×31	1320	25×25	1320				
2200	22×35	1650	25×31	1650					1500	22×35	1525	25×31	1525				
2700	22×41	1890	25×35	1890	30×25	1890			1800	22×41	1710	25×31	1710	30×25	1710		
3300	22×51	2155	25×41	2155	30×31	2155	35×25	2155	2200	22×45	1965	25×35	1965	30×31	1965	35×25	1965
3900			25×45	2420	30×35	2420	35×25	2420	2700			25×45	2240	30×35	2240	35×25	2240
4700			25×51	2715	30×41	2715	35×31	2715	3300			25×51	2545	30×41	2545	35×31	2545
5600					30×45	3055	35×35	3055	3900					30×45	2850	35×35	2850
6800					30×51	3465	35×41	3465	4700					30×51	3220	35×41	3220
8200							35×45	3700	5600							35×45	3610
10000							35×51	4180	6800							35×51	3700



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◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

Vdc uF ΦD	100								Vdc uF ΦD	160							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
560	22×25	995							220	22×25	760						
820	22×31	1260	25×25	1260					330	22×25	1140	25×25	1140				
1000	22×35	1425	25×31	1425					390	22×31	1215	25×25	1215	30×25	1215		
1200	22×41	1620	25×35	1620	30×25	1620			470	22×35	1330	25×25	1330	30×25	1330		
1500	22×45	1880	25×41	1880	30×31	1880	35×25	1880	560	22×41	1460	25×31	1460	30×25	1460	35×25	1460
1800			25×45	2115	30×35	2115	35×25	2115	680	22×45	1615	25×35	1615	30×25	1615	35×25	1615
2200			25×51	2565	30×41	2565	35×31	2565	820	22×51	1900	25×41	1900	30×31	1900	35×25	1900
2700					30×45	2735	35×35	2735	1000			25×45	2110	30×35	2110	35×25	2110
3300					30×51	3115	35×41	3115	1200			25×51	2315	30×41	2315	35×31	2315
3900							35×45	3485	1500					30×45	2675	35×35	2675
4700							35×51	3610	1800					30×51	3140	35×45	3140
5600									2200							35×51	3580

Vdc uF ΦD	200								Vdc uF ΦD	220							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
150	22×25	625							150	22×25	650						
180	22×25	680							180	22×25	695						
220	22×25	750	25×25	750					220	22×25	800	25×25	800				
330	22×31	1140	25×25	1140	30×25	1140			330	22×31	1160	25×25	1160	30×25	1160		
390	22×35	1240	25×25	1240	30×25	1240			390	22×41	1300	25×31	1300	30×25	1300	35×25	1300
470	22×41	1335	25×31	1335	30×25	1335	35×25	1335	470	22×45	1355	25×35	1355	30×31	1355	35×25	1355
560	22×45	1480	25×35	1480	30×25	1480	35×25	1480	560	22×51	1550	25×41	1550	30×35	1550	35×25	1550
680	22×51	1650	25×41	1650	30×31	1650	35×25	1650	680			25×45	1700	30×41	1700	35×31	1700
820			25×51	1935	30×35	1935	35×31	1935	820			25×51	1820	30×45	1820	35×31	1820
1000					30×45	2185	35×35	2185	1000					30×51	2010	35×35	2010
1200					30×51	2515	35×41	2515	1200							35×41	2200
1500							35×45	2925	1500							35×45	2460

Vdc uF ΦD	250								Vdc uF ΦD	400							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
120	22×25	560							47	22×25	350						
150	22×25	675							68	22×25	480	25×25	480				
180	22×25	710	25×25	710					82	22×31	600	25×25	600				
220	22×31	870	25×25	870	30×25	870			100	22×31	635	25×25	635	30×25	635		
330	22×41	1195	25×31	1195	30×25	1195	35×25	1195	120	22×35	680	25×31	680	30×25	680		
390	22×45	1415	25×35	1415	30×25	1415	35×25	1415	150	22×41	795	25×35	795	30×25	795	35×25	795
470	22×51	1490	25×41	1490	30×31	1490	35×25	1490	180	22×51	890	25×41	890	30×31	890	35×25	890
560			25×45	1700	30×35	1700	35×31	1700	220			25×45	1015	30×35	1015	35×31	1015
680			25×51	1870	30×41	1870	35×31	1870	330					30×45	1280	35×35	1280
820					30×45	1880	35×35	1880	390					30×51	1460	35×41	1460
1000							35×41	2185	470							35×45	1650
1200							35×45	2300									



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◆ Case size & Permissible rated ripple current: (mA rms) at 105°C / 120Hz

Vdc uF ΦD	420								Vdc uF ΦD	450							
	Φ22		Φ25		Φ30		Φ35			Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC		ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
47	22×25	370							47								
68	22×25	505	25×25	505					68	22×31	475	25×25	475				
82	22×31	550	25×25	550					82	22×35	520	25×25	520				
100	22×31	605	25×25	605	30×25	605			100	22×41	600	25×31	600	30×25	600		
120	22×35	665	25×31	665	30×25	665			120	22×45	680	25×35	680	30×25	680		
150	22×41	740	25×35	740	30×25	740	35×25	740	150	22×51	710	25×41	710	30×31	710	35×25	710
180	22×51	810	25×41	810	30×31	810	35×25	810	180			25×45	825	30×35	825	35×31	825
220			25×45	900	30×35	900	35×31	900	220			25×51	930	30×41	930	35×31	930
330					30×45	1295	35×35	1295	330					30×51	1310	35×41	1310
390					30×51	1465	35×41	1465	390							35×45	1470
470							35×45	1600	470							35×51	1630

Vdc uF ΦD	500							
	Φ22		Φ25		Φ30		Φ35	
	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC	ΦD×L	RC
39	22×31	350						
47	22×35	410						
56	22×41	470						
68	22×45	540						
82	22×41	620						
100			25×45	670				
120			25×51	770			35×31	720
150					30×41	850		
180					30×51	1010		
220							35×45	1120
270							35×51	1290

◆ RIPPLE CURRENT MULTIPLIERS  
Frequency Multipliers

Vdc	Frequency (Hz)				
	50/60	120	1K	10K	100K
16 ~ 100	0.90	1.00	1.15	1.15	1.15
160 ~ 250	0.80	1.00	1.15	1.17	1.20
350 ~ 500	0.90	1.00	1.10	1.12	1.15