

PL series

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- Super low ESR, High ripple current capability
- Rated voltage :2.5~50V
- Endurance:20,000hours at 105°C
- Applications: Servers,LCD-TV power,Inverter etc.
- ROHS compliant
- Halogen Free compliant



SPECIFICATIONS

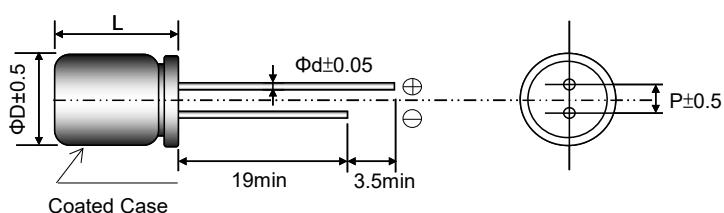
Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +105°C	
Rated Voltage Range	—	2.5~50V	
Capacitance Tolerance	at 20°C,120HZ	$\pm 20\%$ (M)	
Surge Voltage	at 105°C	Rated voltage $\times 1.15V$	
Leakage Current	at 20°C after 2 minutes	$I \leq 0.2CV$ or $300(\mu A)$ Whichever is greater measured,after 2minutes application of rated working voltage at +20°C.	
Dissipation Factor (tan δ)	at 20°C,120Hz	Please see the attached characteristics list	
Low Temperature Characteristics (Max. Impedance Ratio)	at -55°C,100kHz	$Z(-55^\circ C)/Z(+20^\circ C)$	≤ 1.25
	at -25°C,100kHz	$Z(-25^\circ C)/Z(+20^\circ C)$	≤ 1.15
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 20,000 hours at 105°C.	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF(tanδ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	\leq The initial specified value.
Damp Heat (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours ,without DC applied.	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF(tanδ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	\leq The initial specified value.
Surge Voltage	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through a protective resistor ($R=1k\Omega$) and discharge for 5 minutes 30seconds	Appearance	No significant damage.
		Capacitance change	$\leq \pm 20\%$ of the initial value.
		DF(tanδ)	$\leq 150\%$ of the initial specified value.
		ESR	$\leq 150\%$ of the initial specified value.
		Leakage current	\leq The initial specified value.

※ Note:If any doubt arises,measure the leakage current after following voltage treatment.

Voltage treatment :DC rated voltage are applied to the capacitors for 120 minutes at 105°C.

MARKING AND DIMENSIONS

Polarity Marking (Cathode) Series Code
Rated Capacitance
Rated Voltage



(Unit:mm)

Size	6.3×6	6.3×9	8×8	8×11.5	10×10	10×11.5
ΦD	6.3	6.3	8	8	10	10
L	L+1.0 max	L+1.0 max	L+1.5 max	L+1.5 max	L+1.0 max	L+1.5 max
Φd	0.5	0.5	0.6	0.6	0.6	0.6
P	2.5	2.5	3.5	3.5	5.0	5.0

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STANDARD RATINGS

Rated Voltage (S.V.)	Cap (μF)	Size Code DxL	Leakage current (μA) max.	ESR (mΩ) max. 100k to 300kHz / 20°C	Rated Ripple Current (mA rms) 100kHz / 105°C	D.F. (tanδ) max. 120Hz / 20°C
2.5 (2.9)	220	6.3×6	300	24	2400	0.12
	560	6.3×9	300	15	3200	0.12
	1000	8×8	500	15	3640	0.12
	1200	8×11.5	600	10	5200	0.12
	1800	10×11.5	900	10	5200	0.12
	2200	10×11.5	1100	10	5500	0.12
6.3 (7.2)	100	6.3×6	300	24	2400	0.12
	180	6.3×6	300	24	2400	0.12
	470	6.3×9	592	20	3500	0.12
	560	6.3×9	706	20	3500	0.12
	560	8×8	706	15	4100	0.12
	680	8×8	856	15	4300	0.12
	1000	8×11.5	1260	12	5000	0.12
	1200	10×10	1512	15	5200	0.12
	1800	10×11.5	2268	12	5500	0.12
10 (11.5)	120	6.3×6	300	24	2400	0.12
	330	6.3×9	660	15	3500	0.12
	560	8×8	1120	15	4000	0.12
	680	8×11.5	1360	15	4800	0.12
	1000	10×10	2000	15	4800	0.12
	1200	10×11.5	2400	12	5500	0.12
16 (18.4)	82	6.3×6	300	24	2400	0.12
	100	6.3×9	320	15	3500	0.12
	220	6.3×9	704	15	3500	0.12
	330	8×8	1056	15	4200	0.12
	470	8×11.5	1504	12	4500	0.12
	470	10×11.5	1504	10	5100	0.12
	680	10×10	2176	15	5100	0.12
	820	10×11.5	2624	15	5400	0.12
	1000	10×11.5	3200	15	5400	0.12
25 (28.8)	47	6.3×6	300	40	1500	0.12
	100	6.3×9	500	30	2500	0.12
	180	8×8	900	30	3260	0.12
	220	8×11.5	1100	30	3520	0.12
	330	10×10	1650	20	3850	0.12
	470	10×11.5	2350	25	4020	0.12
35 (40.3)	22	6.3×6	300	70	1450	0.12
	68	6.3×9	476	60	1520	0.12
	120	8×8	840	30	2100	0.12
	150	8×11.5	1050	26	2800	0.12
	220	10×10	1540	30	3050	0.12
	270	10×11.5	1890	26	3650	0.12
50 (57.5)	10	6.3×6	300	90	900	0.12
	33	6.3×9	330	60	1500	0.12
	47	8×8	470	32	2000	0.12
	68	8×11.5	680	28	2200	0.12
	100	10×10	1000	32	2350	0.12
	100	10×11.5	1000	28	2550	0.12

FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Coefficient	0.05	0.3	0.7	1.0