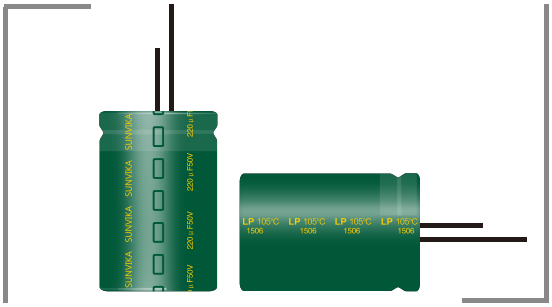
LP 系 列 SERIES

- 5000-8000h at 105℃
- Low Impedance ,High Current
- Switching Power Supply



◆ SPECIFICATION

Items	Characteristics
Operating Temperature Range(℃)	-40 ~ +105° C -25 ~ +105° C (350~450v)
Voltage range (V)	6.3 ~ 450V
Capacitance Range (μF)	0.47 ~ 18000 μF
Capacitance Tolerance	±20% (at20℃,120Hz)
leakage current (μA)	After 2 minute at 20℃ application of rated voltage, leakage current is not more than 0.01CV or 3 μA,whichever is greater (wv: 6.3~100v) C:Nominal Capacitance (μF) V:Rated Voltage(V) After 5 minute at 20℃ application of rated voltage , leakage current is not more than: CV ≤1000; I≤0.03CV+15 μA CV >1000; I≤0.02CV+25 μA

Dissipation Factor(Tan δ) (at 20℃,120Hz)

WV(V)	6.3	10	16	25	35	50	63~100	160~400	450
Tan δ (max)	0.2	0.18	0.16	0.14	0.12	0.10	0.08	0.15	0.20

LowTemperature Characteristics

Rated Voltage(v)		6.3~10	16	25~35	50~100	160~250	350~400	450
Impedance Rato	Z-25℃/Z+20℃	-	-	-	-	-	6	10
	Z-40℃/Z+20℃	4	3	3	3	6	-	-

(at 120Hz)

Load Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DCvoltage with the rated rippled current is applied for 5000~8000 hours at 105℃

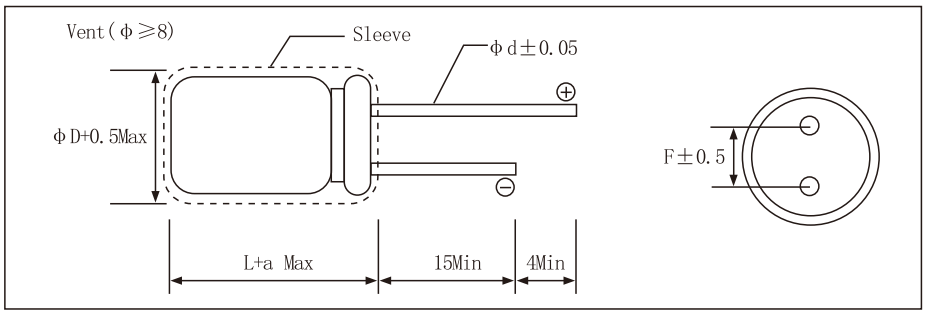
Capacitance change	Within ± 25%initial value	Case Dia	Life time(hours)
D.F.(Tan δ)	Not more than 200% of specified value	ΦD≤6.3	5000
leakage current	Not more than specified value	ΦD=8、10	6000
		ΦD≥13	8000

Shelf Life

The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1,000hours at 105℃without voltage applied .

Capacitance change	Within ± 25%initial value
D.F.(Tan δ)	Not more than 200% of specified value
leakage current	Not more than 200% of specified value

◆ DIMENSIONS(mm)



ΦD	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Φd	0.5	0.5	0.5	0.6	0.6	0.8	0.8
a	1.5	1.5	1.5	1.5	1.5	2.0	2.0

◆ Temperature Coefficient

Temperature(℃)	+70	+85	+105
Coefficient	1.96	1.68	1.0

LP 系 列
SERIES

◆ Frequency Coefficient(6.3V~100V)

Frequency / Cap(μF)	120Hz	1KHz	10KHz	100KHz
≤10	0.30	0.68	0.87	1.00
12~180	0.40	0.75	0.90	1.00
220~560	0.50	0.83	0.93	1.00
680~1800	0.60	0.86	0.95	1.00
2200~3900	0.75	0.90	0.97	1.00
4700~18000	0.85	0.95	0.98	1.00

◆ Frequency Coefficient(160V~450V)

Frequency / Cap(μF)	50Hz	120Hz	300Hz	1kHz	10KHz	100KHz
0.1~8.2	0.65	1.00	1.35	1.75	2.30	2.50
10~82	0.75	1.00	1.25	1.50	1.75	1.80
100~1000	0.80	1.00	1.15	1.30	1.40	1.50

LP 系列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃100kHz	Rated Ripple Current 105℃100KHz	Size ϕD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
6.3 (8)	150	0.58	210	5×11
	330	0.22	340	6.3× 12
	470	0.17	460	6.3× 15
	680	0.13	640	8×12
	820	0.080	865	10×12.5
	1000	0.087	840	8×16
	1200	0.069	1050	8×20
		0.060	1210	10×16
	1500	0.046	1400	10×20
	2200	0.042	1650	10×25
	2700	0.031	1910	10×30
	3300	0.035	1900	13×20
	3900	0.027	2230	13×25
	4700	0.024	2650	13×30
	5600	0.020	2880	13×35
		0.027	2530	16×20
	6800	0.017	3350	13×40
		0.021	2930	16×25
		0.026	2860	18×20
	8200	0.017	3450	16×31.5
	10000	0.015	3610	16×35.5
		0.019	3140	18×25
	12000	0.013	4080	16×40
		0.015	4170	18×31.5
	15000	0.014	4220	18×35.5
	18000	0.012	4280	18×40
10 (13)	100	0.58	210	5×11
	220	0.22	340	6.3× 12
	330	0.17	460	6.3× 15
	470	0.13	640	8×12
	680	0.087	840	8×16
		0.080	865	10×12.5
	1000	0.069	1050	8×20
		0.060	1210	10×16
	1200	0.046	1400	10×20
	1500	0.042	1650	10×25
	2200	0.031	1910	10×30
		0.035	1900	13×20
	3300	0.027	2230	13×25
	3900	0.024	2650	13×30
		0.027	2880	16×20
	4700	0.020	2530	13×35
	5600	0.017	3350	13×40
		0.021	2930	16×25
		0.026	2860	18×20
	6800	0.017	3450	16×31.5
		0.019	3140	18×25
	8200	0.015	3610	16×35.5
		0.015	4170	18×31.5
	10000	0.013	4080	16×40
		0.014	4220	18×35.5
	12000	0.012	4280	18×40

LP 系 列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃100kHz	Rated Ripple Current 105℃100KHz	Size φD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
16 (20)	56	0.58	210	5×11
	120	0.22	340	6.3×12
	220	0.17	460	6.3×15
	330	0.13	640	8×12
	470	0.080	840	8×16
		0.087	865	10×12.5
	560	0.069	1050	8×20
	680	0.060	1210	10×16
	1000	0.046	1400	10×20
	1200	0.042	1650	10×25
	1500	0.031	1910	10×30
		0.035	1900	13×20
	2200	0.027	2230	13×25
	2700	0.024	2650	13×30
		0.027	2530	16×20
	3300	0.020	2880	13×35
	3900	0.017	3350	13×40
		0.021	2930	16×25
		0.026	2860	18×20
	4700	0.017	3450	16×31.5
		0.019	3140	18×25
	5600	0.015	3610	16×35.5
		0.015	4170	18×31.5
	6800	0.013	4080	16×40
	8200	0.014	4220	18×35.5
	10000	0.012	4280	18×40
25 (32)	47	0.06	210	5×11
	100	0.22	340	6.3×12
	150	0.17	460	6.3×15
	220	0.13	640	8×12
	330	0.087	840	8×16
		0.080	865	10×12.5
	470	0.069	1050	8×20
		0.060	1210	10×16
	680	0.046	1400	10×20
	820	0.042	1650	10×25
	1000	0.031	1910	10×30
		0.035	1900	13×20
	1500	0.027	2230	13×25
	1800	0.024	2650	13×30
		0.027	2530	16×20
	2200	0.020	2880	13×35
		0.026	2860	18×20
	2700	0.017	3350	13×40
		0.021	2930	16×25
	3300	0.017	3450	16×31.5
		0.019	3140	18×25
	3900	0.015	3610	16×35.5
		0.015	4170	18×31.5
	4700	0.013	4080	16×40
		0.014	4220	18×35.5
	5600	0.012	4280	18×40

LP 系列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃100kHz	Rated Ripple Current 105℃100KHz	Size φD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
35 (44)	33	0.58	210	5×11
	56	0.22	340	6.3×12
	100	0.17	460	6.3×15
	150	0.13	640	8×12
	220	0.087	840	8×16
		0.080	865	10×12.5
	270	0.069	1050	8×20
	330	0.060	1210	10×16
	470	0.046	1400	10×20
	560	0.042	1650	10×25
	680	0.031	1910	10×30
		0.035	1900	13×20
	1000	0.027	2230	13×25
	1200	0.024	2650	13×30
		0.027	2530	16×20
	1500	0.020	2880	13×35
	1800	0.017	3350	13×40
		0.021	2930	16×25
		0.026	2860	18×20
	2200	0.017	3450	16×31.5
		0.019	3140	18×25
	2700	0.015	3610	16×35.5
		0.015	4170	18×31.5
	3300	0.013	4080	16×40
		0.014	4220	18×35.5
	3900	0.012	4280	18×40
50 (63)	0.47	5.50	17	5×11
	1	4	30	5×11
	2.2	2.5	43	5×11
	3.3	2.2	53	5×11
	4.7	1.9	88	5×11
	10	1.5	100	5×11
	22	0.7	180	5×11
	56	0.3	295	6.3×12
	100	0.17	555	8×12
	120	0.120	730	8×16
	150	0.120	760	10×12.5
	180	0.091	910	8×20
	220	0.084	1050	10×16
	270	0.060	1220	10×20
	330	0.055	1440	10×25
	470	0.043	1690	10×30
		0.045	1660	13×20
	560	0.034	1950	13×25
	680	0.030	2310	13×30
	820	0.025	2510	13×35
		0.034	2210	16×20
	1000	0.021	2920	13×40
		0.025	2550	16×25
		0.036	2490	18×20
	1200	0.022	3010	16×31.5
		0.026	2740	18×25
	1500	0.019	3150	16×35.5
	1800	0.016	3710	16×40
		0.021	3635	18×31.5
	2200	0.017	3680	18×35.5
	2700	0.014	3800	18×40

LP 系 列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Max ESR 20℃100kHz	Rated Ripple Current 105℃100KHz	Size φD×L
(V)	(μF)	(Ω)	(mA rms)	(mm)
63 (79)	15	0.880	165	5×11
	33	0.350	265	6.3×12
	56	0.220	500	8×12
	82	0.160	665	8×16
		0.110	690	10×12.5
	120	0.120	820	8×20
		0.076	950	10×16
	180	0.056	1150	10×20
		0.072	1150	13×16
	220	0.046	1350	10×25
	270	0.041	1500	13×20
	390	0.031	1900	13×25
	470	0.028	2300	13×30
		0.032	2000	16×20
	560	0.024	2500	13×35
	680	0.021	2800	13×40
		0.025	2600	16×25
		0.030	2500	18×20
	820	0.021	2850	16×31.5
		0.024	2800	18×25
	1000	0.019	2900	16×35.5
	1200	0.018	3400	16×40
		0.020	3300	18×31.5
	1500	0.018	3400	18×35.5
	1800	0.017	3500	18×40
100 (125)	6.8	1.400	125	5×11
	15	0.570	205	6.3×12
	27	0.360	355	8×12
	39	0.250	450	8×16
	47	0.170	480	10×12.5
	56	0.190	565	8×20
	68	0.110	600	10×16
	82	0.084	680	10×20
	100	0.110	750	13×16
	120	0.069	900	10×25
	150	0.062	1100	13×20
	220	0.047	1250	13×25
		0.048	1350	16×20
	270	0.042	1500	13×30
	330	0.036	1650	13×35
		0.038	1700	16×25
		0.045	1500	18×20
	390	0.032	1800	13×40
	470	0.032	1850	16×31.5
		0.036	1750	18×25
	560	0.029	2000	16×35.5
		0.030	1900	18×31.5
	680	0.027	2200	16×40
		0.027	2200	18×35.5
	820	0.026	2700	18×40

LP 系列 SERIES

◆ STANDARD RATINGS

UR (Surge Voltage) Code	Rated Capaci-tance	Rated Ripple Current 105℃120Hz	Size φD×L
(V)	(μF)	(mA rms)	(mm)
160 (200)	10	125	10×16
	22	200	10×20
	33	250	10×20
	47	300	10×20
	68	470	13×20
	82	510	13×20
	100	620	13×25
	150	770	16×25
	220	1020	18×25
	330	1390	18×40
200 (250)	10	125	10×16
	22	200	10×20
	33	260	10×20
	47	390	13×20
	68	470	13×20
	82	550	16×20
	100	630	16×20
	150	840	16×25
	220	1050	18×30
	330	1430	18×40
250 (300)	10	140	10×20
	22	200	10×20
	33	320	13×20
	47	390	13×20
	68	520	16×20
	82	550	16×20
	100	680	16×25
	150	860	18×25
	220	1130	18×40
350 (400)	6.8	110	10×16
	10	140	10×20
	22	260	13×20
	33	360	16×20
	47	430	18×20
	68	560	18×25
	82	610	18×32
	100	700	18×32
	150	960	18×40

UR (Surge Voltage) Code	Rated Capaci-tance	Rated Ripple Current 105℃120Hz	Size φD×L
(V)	(μF)	(mA rms)	(mm)
400 (450)	2.2	35	10×12.5
	3.3	50	10×12.5
	4.7	75	10×16
	6.8	110	10×16
	10	140	10×20
	15	220	13×20
	22	260	16×20
	33	360	16×20
	47	470	16×25
		450	18×20
	68	585	18×25
	82	610	18×25
	100	765	18×35.5
	120	865	18×35.5
	150	985	18×40
450 (500)	2.2	35	10×12.5
	3.3	50	10×12.5
	4.7	75	10×16
	6.8	110	10×20
	10	180	13×20
	15	240	13×25
	22	290	16×20
	33	390	16×25
		380	18×20
	47	480	18×25
	68	630	18×31.5
	82	715	18×35.5
	100	800	18×40

Customer products are available on request