

CL Series Low Impedance

CL系列

- Load life:130℃ 2000hours or 105℃ 8000-10000hours.
- 130℃ high-temperature resistance,high
- ripple current and long life.
- Suitable for LED lighting driver and the electronic ballast.Rohs Compliance.



● Case Size

WV(sv) Cap(μF)	400(450)			450(500)		
	Size	Ripple	Impedance	Size	Ripple	Impedance
1	6.3*12	70	25.00	8*12	80	33.00
1.2	6.3*12	70	25.00	8*12	80	25.00
1.5	6.3*12	70	25.00	8*12	80	25.00
1.8	8*12	70	25.00	8*12	93	20.00
2.2	8*12	90	20.00	8*12	98	15.00
2.7	8*12	90	15.00	10*13	110	15.00
3.3	8*12	100	15.00	10*13	120	15.00
3.9	8*16	120	15.00	10*13	120	15.00
4.7	10*13	140	10.00	10*17	140	10.00
5.6	8*16	250	10.00	10*17	180	7.50
6.8	10*17	250	10.00	10*20	230	7.50
8.2	10*20	300	7.50	10*20	200	6.00
10	10*20	300	7.50	13*20	270	6.00
12	10*20	370	7.00	13*20	380	6.00
15	10*25	330	6.00	13*20	430	4.50
18	13*20	330	6.00	13*25	480	4.20
22	13*20	500	4.00	13*25	580	3.00
27	13*25	800	4.00	16*26	730	3.00
33	16*20	900	2.90	16*26	730	2.80
39	16*26	1180	2.90	16*31	1080	2.80
47	16*31	1200	2.00	16*31	1280	1.80
56	18*32	1400	1.80	18*32	1350	1.30
68	18*32	1630	1.30	18*32	1550	1.20
82	18*35	1860	1.20	18*35	1800	1.05
100	18*35	1960	1.00	20*36	1980	0.90
120	20*36	2020	0.98	20*36	2020	0.90
150	22*36	2200	0.95	22*36	2200	0.88

Ripple Current(mA,rms) at 105℃, 100KHz Max Impedance(Ω) at 20℃, 100KHz

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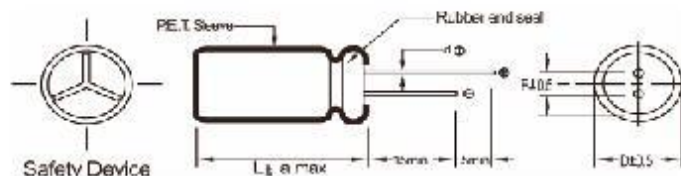
- Load life: 130°C 2000 hours or 105°C 8000-10000 hours.
- 130°C high-temperature resistance, high
- ripple current and long life.
- Suitable for LED lighting driver and the electronic ballast. RoHS Compliance.



● Specifications

Item	Performance Characteristics						
Operating Temp. Range	-40~+130°C						
Rated Voltage Range	160 to 450 VDC						
Capacitance Range	1 to 680 μ F						
Capacitance Tolerance	$\pm 20\%$ (120Hz, 20°C)						
Leakage Current	160~400V $I \leq 0.02CV + 10$ (μ A) After 2 minutes whichever is greater measured with rated working voltage applied			450V $I_L \leq 0.03CV + 10$ (μ A) After 2 minutes with rated working voltage applied			
Dissipation Factor(Tan δ) (max, 120Hz, 20°C)	W.V(VDC)	160	200	250	350	400	450
	D.F(%)	12	12	12	15	15	17
Low Temp. Characteristics (Max Impedance Ratio) (120Hz)	W.V(VDC)	160	200	250	350	400	450
	$Z_{(-25^\circ\text{C})}/Z_{(+25^\circ\text{C})}$	2	2	3	5	5	6
	$Z_{(-40^\circ\text{C})}/Z_{(+25^\circ\text{C})}$	3	6	6	6	6	-
Load Life	After application of the rated voltage at 130°C 2000 hours or 105°C 8000~10000 hours ,the capacitors Shall meet the requirement below Applied voltage: Rated DC working voltage After test requirements at +20°C Capacitance change: $\leq \pm 30\%$ of the initial measured value Dissipation factor: $\leq 300\%$ of the initial specified value Leakage current: $\leq$ the initial specified value						
Shelf Life	Test conditions Duration time: 1000hrs Ambient temperature: +105°C Applied voltage: None After test requirements at +20°C : Same limits as Load life. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30minutes						
Industrial	JIS C-5101-4(IEC30384-4)						

● Diagram of dimensions(cunit:mm)



ΦD	5	6.3	8	10	13	16	18	22
Φd	0.5			0.6		0.8		
F	2.0	2.5	3.5	5.0		7.5	10	
L	L $\pm$ 1.0max			L $\pm$ 1.5max		L $\pm$ 2.0max		

● Multiplier for ripple current vs frequency

Cap.(μ F)	Fre.(Hz)	50(60)	120	400	1K	10K	100K
≤ 10		0.47	0.59	0.76	0.85	0.97	1.0
12~100		0.52	0.62	0.80	0.89	0.97	1.0
120~1000		0.58	0.72	0.84	0.90	0.98	1.0

● Multiplier for ripple current vs temperature

Temp.(°C)	45	60	70	85	95	105
Multiplier	2.10	1.90	1.65	1.40	1.25	1.00

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**● Case Size**

WV(sv) Cap(μF)	160(200)			200(250)			250(350)			350(400)		
	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance	Size	Ripple	Impedance
1.5										6.3*12	90	11.00
1.8										6.3*12	90	11.00
2.2				6.3*12	75	10.00	6.3*12	90	10.00	6.3*12	90	11.00
2.7				6.3*12	75	10.00	6.3*12	90	10.00	6.3*12	100	10.00
3.3	6.3*12	95	13.50	6.3*12	75	10.00	6.3*12	90	10.00	6.3*12	120	10.00
3.9	6.3*12	95	13.50	6.3*12	75	10.00	6.3*12	90	10.00	8*12	130	10.00
4.7	6.3*12	95	13.50	6.3*12	95	10.00	8*12	90	7.50	8*12	130	10.00
5.6	6.3*12	95	12.50	8*12	95	7.50	8*12	110	7.50	8*12	140	10.00
6.8	6.3*12	105	12.50	8*12	95	7.50	8*12	110	7.50	8*16	200	10.00
8.2	8*12	105	11.00	8*12	130	7.50	8*16	150	7.50	10*17	250	7.50
10	8*12	120	11.00	8*12	130	7.50	10*13	180	3.50	10*17	300	7.50
12	8*12	130	11.00	8*12	160	6.00	10*17	180	3.40	10*20	330	7.50
15	8*16	160	7.50	10*13	200	3.60	10*17	200	3.20	10*20	360	6.00
18	8*16	160	7.50	10*17	250	3.20	10*20	300	3.20	13*20	560	6.00
22	10*13	180	4.20	10*17	330	3.20	10*20	380	3.00	13*16	580	6.00
27	10*17	320	4.20	10*20	500	2.00	13*20	550	3.00	13*20	880	6.00
33	10*20	400	2.50	13*20	750	1.60	13*20	700	2.20	13*25	950	2.20
39	10*20	550	2.50	13*20	750	1.60	13*20	880	2.20	13*25	950	2.20
47	10*20	650	2.50	13*20	850	1.30	13*25	980	2.20	16*26	1130	2.20
56	13*20	850	2.40	13*25	1050	1.20	16*26	1080	2.00	16*31	1200	2.00
68	13*20	850	2.20	13*25	1050	1.20	16*26	1080	1.30	16*31	1280	1.30
82	13*20	1000	2.20	16*26	1280	1.10	16*31	1250	1.30	18*32	1580	1.30
100	13*20	1000	1.80	16*26	1420	1.10	18*26	1550	1.20	18*32	1980	1.20
120	13*25	1380	1.40	16*31	1920	1.00	18*32	1680	1.20	18*35	2200	1.20
150	16*26	1800	1.40	18*32	1980	0.98	18*32	1900	0.96	20*36	2700	0.95
180	16*26	1800	1.10	18*32	2200	0.90	18*35	2250	0.95	20*36	2700	0.95
220	16*31	2400	1.10	18*35	2620	0.90	20*35	2780	0.90	22*36	2780	0.9
270	18*32	2660	0.90	20*36	2680	0.90	22*36	2800	0.88			
330	18*32	2660	0.90	22*36	2780	0.86						
390	18*35	2715	0.90									
470	20*36	2780	0.88									
560	22*36	2880	0.88									
680	22*36	2880	0.88									

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