

# LS Series

## Features

- Snap-in, general purpose
- Endurance with ripple current: 85°C 2000 hours
- High ripple current capability
- Safety vent designed on aluminum case
- RoHS2.0 Compliant

## Applications

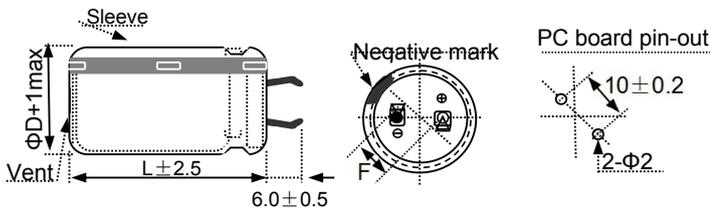
- Professional power supply
- Inverter
- UPS
- Air conditioner, general purpose inverter
- Professional arena power amplifier
- Frequency converters
- Medical power supply
- And others

## 规格表 Specifications

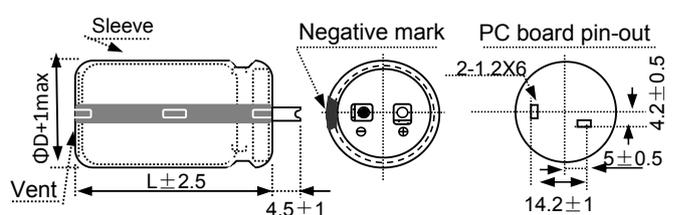
项目 Items	参数特性 Characteristics												
使用温度范围 Category Temperature Range	-40 ~ +85°C (6.3 ~ 100V.DC)						-25 ~ +85°C (160 ~ 450V.DC)						
额定工作电压范围 Rated Voltage Range	6.3 ~ 450V.DC												
电容量允许偏差 Capacitance	±20%(M) (at 20°C, 120Hz)												
漏电流 Leakage Current	I ≤ 0.02CV or 3mA, 二者取最小值 (施加额定工作电压5分钟后) Whichever is smaller (After 5 minutes application of rated voltage) Note: I=Max.leakage current (μA), C=Nominal capacitance(μF), V=Rated voltage(V) (at 20°C)												
损耗角正切值tanδ Dissipation Factor	Rated voltage(V)	6.3	10	16	25	35	50	63	80	100	160 ~ 250	315 ~ 400	450
	tanδ(Max.)	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.15	0.15	0.15	0.20	0.20
标称容量超过1000μF,则每增加1000μF,损耗角正切值增加0.02 When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase. (at 20°C, 120Hz)													
低温特性 LOW Temperature Characteristics (Max.Impedance)	阻抗比值不得超过下表中列出的值 The impedance ratio shall not exceed the values listed in the below table. (at 120Hz)												
	Rated voltage(V)	6.3	10	16	25	35	50	63	80	100	160 ~ 250	315 ~ 400	450
	Z(-25°C)/Z(+20°C)	4	4	4	3	3	2	2	2	2	4	4	8
Z(-40°C)/Z(+20°C)													
耐久性 Endurance	在85°C环境中, 不超过额定电压的范围内叠加最大允许纹波电流, 连续2000小时, 经恢复到20°C后, 电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored to 20°C after applied within maximum allowable ripple current and not over rated voltage range for 2000 hours at 85°C.												
	Capacitance change	≤ ±20% of the initial value											
	D.F.(tanδ)	≤ 200% of the initial specified value											
高温储存特性 Shelf Life	在85°C环境中, 不施加电压条件下储存1000小时, 经恢复到20°C后, 电容器满足以下各项要求。 The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 85°C without voltage applied.												
	Capacitance change	≤ ±20% of the initial value											
	D.F.(tanδ)	≤ 150% of the initial specified value											
Leakage current													
≤ 200% of the initial specified value													

## 尺寸图 (单位: mm) DIMENSIONS (Unit:mm)

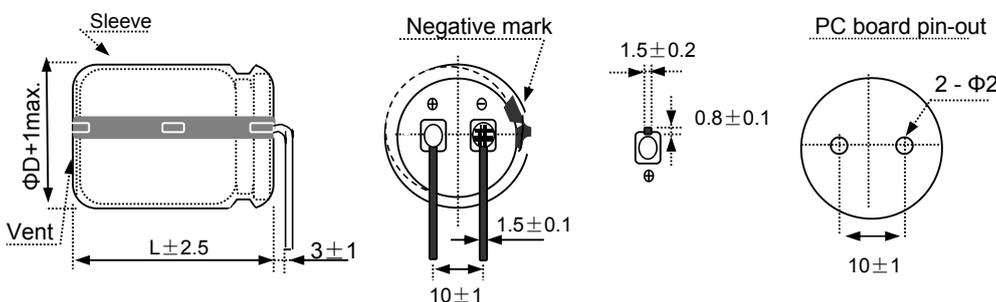
### ●Standard Terminal Type : S (Φ22 ~ Φ35)



### ●Terminal Type : P (Φ35)



### ●Terminal Type : L (Φ22×30 ~ 50L)



LS Series

◆ 纹波电流修正系数 Rated Ripple Current Coefficient

● 频率系数 Frequency Coefficient

Frequency(Hz)	50	120	300	1k	10k	50k
6.3 ~ 50V	0.95	1.0	1.03	1.05	1.08	1.08
63 ~ 100V	0.92	1.0	1.07	1.13	1.19	1.20
160 ~ 250 V	0.81	1.0	1.17	1.32	1.45	1.50
315 ~ 450 V	0.77	1.0	1.16	1.30	1.41	1.43

◆ 标准品一览表 Standard Ratings

WV(V) Cap.(uF)	6.3(0J)				10(1A)				16(1C)			
8,200									22×25 2.51			
10,000									22×25 2.77			
12,000					22×25 2.39				22×30 2.86	25×25 2.95		
15,000	22×25 2.44				22×30 2.76	25×25 2.77			22×35 3.29	25×30 3.46	30×25 3.66	
18,000	22×30 2.67	25×25 2.70			22×35 3.12	25×25 3.04			22×40 3.72	25×35 3.98	30×25 4.00	
22,000	22×30 3.06	25.4×25 3.07			22×40 3.55	25×30 3.48	30×25 3.53		22×50 4.37	25×40 4.26	30×30 4.21	35×25 4.15
27,000	22×35 3.49	25×30 3.52	30×25 3.57		22×45 4.04	25×35 3.98	30×30 3.73	35×25 3.73		25×45 4.72	30×35 4.82	35×30 4.65
33,000	22×40 3.97	25×35 4.02	30×25 3.95		22×50 4.58	25×40 4.54	30×30 4.13	35×25 4.13		25×50 5.33	30×40 5.36	35×30 5.15
39,000	22×50 4.55	25×40 4.50	30×30 4.45	35×25 4.51		25×45 5.08	30×35 5.05	35×30 4.80			30×45 6.01	35×35 5.95
47,000		25×45 5.09	30×35 5.06	35×30 5.01		25×50 5.73	30×40 5.72	35×30 5.27			30×50 6.79	35×40 6.76
56,000		25×50 5.71	30×40 5.70	35×30 5.77			30×45 6.44	35×35 6.38				35×45 7.62
68,000			30×45 6.48	35×35 6.42			30×50 7.27	35×40 7.27				35×50 8.63
82,000			30×50 7.32	35×40 7.29				35×50 8.49				
100,000				35×45 8.31								

WV(V) Cap.(uF)	25(1E)				35(1V)				50(1H)			
2,200									22×25 1.91			
3,300									22×30 2.37	25×25 2.38		
3,900					22×25 2.22				22×35 2.65	25×30 2.68	30×25 2.55	
4,700					22×30 2.41	25×25 2.42			22×40 2.99	25×35 3.03	30×25 2.81	
5,600	22×25 2.44				22×35 2.75	25×25 2.64			22×45 3.36	25×35 3.31	30×30 3.37	35×25 3.42
6,800	22×30 2.40	25×25 2.56			22×40 2.80	25×30 2.74	30×25 2.97		22×50 3.81	25×40 3.81	30×35 3.85	35×30 3.85
8,200	22×35 2.72	25×25 2.80			22×45 3.47	25×35 3.10	30×30 3.13	35×25 2.73		25×50 4.37	30×40 4.36	35×30 4.41
10,000	22×40 3.09	25×30 3.12	30×25 3.21		22×50 3.57	25×40 3.53	30×30 3.46	35×25 3.02			30×45 4.97	35×35 4.92
12,000	22×45 3.48	25×35 3.43	30×30 3.86	35×25 3.54		25×45 3.98	30×35 4.01	35×30 4.42			30×50 5.60	35×40 5.58
15,000	22×50 4.00	25×40 3.95	30×30 4.00	35×25 3.95		25×50 4.54	30×40 4.52	35×35 5.01				35×45 6.44
18,000		25×45 4.45	30×35 4.46	35×30 4.63			30×45 4.71	35×40 5.54				35×50 6.71
22,000		25×50 5.02	30×45 5.21	35×35 5.16			30×50 5.33	35×45 6.04				
27,000			30×50 5.94	35×40 5.92				35×50 6.89				
33,000				35×45 6.75	← Case size: ΦD×L(mm) ← 外壳尺寸: 直径X长度(毫米)							
39,000				35×50 7.56	Maximum allowable ripple current at 85°C/120Hz(A.r.m.s) 在85°C/120Hz下的最大允许纹波电流(有效值,单位:安)							

\*铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，中心温度每升温5°C寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流。

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

LS Series

◆ 标准品一览表 Standard Ratings

WV(V) Cap.(uF)	63(1J)				80(1K)				100(2A)			
820									22×25 1.86			
1,200					22×25 1.69				22×30 2.09	25×25 2.10		
1,500					22×25 1.88				22×35 2.41	25×30 2.43	30×25 2.46	
1,800	22×25 1.82				22×30 2.14	25×25 2.26			22×40 2.71	25×35 2.75	30×25 2.72	
2,200	22×30 2.31	25×25 2.30			22×35 2.44	25×30 2.46	30×25 2.49		22×45 3.08	25×40 3.13	30×30 3.09	35×25 3.14
2,700	22×35 2.40	25×25 2.40			22×40 2.78	25×35 2.81	30×25 2.75		22×50 3.53	25×45 3.57	30×35 3.55	35×30 3.71
3,300	22×35 2.62	25×30 2.64	30×25 2.78		22×45 3.16	25×40 3.21	30×30 3.17	35×25 3.21		25×50 4.06	30×40 4.05	35×30 4.05
3,900	22×40 2.93	25×35 2.97	30×30 3.00	35×25 3.00	22×50 3.52	25×45 3.59	30×35 3.57	35×25 3.50			30×45 4.54	35×35 4.49
4,700	22×50 3.39	25×40 3.36	30×30 3.32	35×25 3.36		25×50 4.05	30×40 4.05	35×30 4.09			30×50 5.13	35×40 5.11
5,600		25×45 3.77	30×35 3.75	35×30 3.76			30×45 4.55	35×35 4.51				35×45 5.75
6,800		25×50 4.27	30×40 4.27	35×30 4.15			30×50 5.16	35×40 5.14				35×50 6.50
8,200			30×45 4.83	35×35 4.79				35×45 5.83				
10,000			30×50 5.49	35×40 5.47				35×50 6.63				
12,000				35×45 6.19								

WV(V) Cap.(uF)	160(2C)				180( 2Z )				200(2D)			
270					22×25 1.27				22×25 1.27			
330	22×25 1.4				22×25 1.4				22×30 1.45	25×25 1.45		
390	22×35 1.52				22×30 1.58	25×25 1.58			22×30 1.58	25×25 1.58		
470	22×30 1.73	25×25 1.74			22×35 1.79	25×25 1.79			22×35 1.78	25×30 1.80	30×25 1.80	
560	22×35 1.95	25×25 1.95			22×40 2.00	25×30 1.96	30×25 1.99		22×40 2.00	25×35 2.03	30×25 2.00	
680	22×40 2.21	25×30 2.16	30×25 2.19		22×45 2.27	25×35 2.23	30×25 2.25		22×50 2.33	25×40 2.30	30×30 2.28	35×25 2.31
820	22×45 2.49	25×35 2.45	30×30 2.50	35×25 2.50	22×50 2.55	25×40 2.53	30×30 2.70	35×25 2.53		25×45 2.60	30×35 2.59	35×25 2.60
1,000	22×50 2.82	25×40 2.79	30×30 2.80	35×25 2.80		25×45 2.87	30×35 2.86	35×30 2.99		25×50 2.95	30×40 2.95	35×30 2.95
1,200		25×45 3.15	30×35 3.13	35×30 3.27		25×50 3.30	30×40 3.23	35×35 3.31			30×45 3.31	35×35 3.31
1,500		25×50 3.72	30×45 3.73	35×35 3.69			30×50 3.83	35×40 3.82			30×50 3.82	35×40 3.82
1,800			30×50 4.20	35×40 4.18				35×45 4.32				35×45 4.32
2,200				35×45 4.78				35×50 4.92				35×50 4.92
2,700				35×50 5.45	← Case size: ΦD×L(mm) ← Maximum allowable ripple current at 85°C/120Hz(A.r.m.s)							

※铝电解电容器由于在纹波电流叠加时自我发热、温度上升而老化，中心温度每升温5°C寿命减少一半。要想保持长寿命请在使用过程中降低纹波电流。  
The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

LS Series

◆ 标准品一览表 Standard Ratings

WV(V) Cap.(uF)	250(2E)				315(2F)				350(2V)				
82													
100									22×25 0.86				
120					22×25 0.94				22×30 0.99	25×25 0.99			
150					22×30 1.11	25×25 1.10			22×35 1.14	25×25 1.10			
180	22×25 1.04				22×35 1.20	25×25 1.20			22×40 1.28	25×30 1.24	30×25 1.27		
220	22×25 1.15				22×40 1.41	25×30 1.38	30×25 1.40		22×45 1.44	25×35 1.44	30×30 1.44	35×25 1.44	
270	22×30 1.31	25×25 1.32			22×45 1.60	25×35 1.59	30×30 1.59	35×25 1.59	22×50 1.64	25×40 1.63	30×35 1.66	35×25 1.63	
330	22×35 1.49	25×30 1.51	30×25 1.52		22×50 1.80	25×40 1.80	30×30 1.80	35×25 1.80		25×50 1.88	30×35 1.83	35×30 1.87	
390	22×40 1.67	25×30 1.66	30×25 1.66			25×45 2.01	30×35 1.99	35×30 2.00			30×40 2.06	35×30 2.03	
470	22×45 1.88	25×35 1.86	30×30 1.89	35×25 1.88		25×45 2.20	30×40 2.27	35×30 2.23			30×50 2.40	35×35 2.33	
560	22×50 2.10	25×40 2.09	30×35 2.14	35×25 2.06			30×45 2.56	35×35 2.49				35×40 2.60	
680		25×50 2.44	30×40 2.43	35×30 2.46			30×50 2.88	35×40 2.87				35×45 2.96	
820			30×45 2.75	35×35 2.77				35×45 3.25				35×50 3.04	
1,000			30×50 3.31	35×40 3.32				35×50 3.69					
1,200				35×45 3.53									
1,500				35×50 4.04									

WV(V) Cap.(uF)	400(2G)				450(2W)								
56					22×25 0.65								
68					22×25 0.71								
82	22×25 0.78				22×30 0.82	25×25 0.82							
100	22×30 0.90	25.4×25 0.90			22×35 0.93	25×25 0.90							
120	22×35 1.02	25.4×25 0.98			22×40 1.04	25×30 1.02	30×25 1.03						
150	22×40 1.16	25.4×30 1.14	30×25 1.16		22×45 1.19	25×35 1.19	30×30 1.19	35×25 1.19					
180	22×45 1.31	25.4×35 1.30	30×30 1.44	35×25 1.32	22×50 1.34	25×40 1.33	30×35 1.35	35×25 1.33					
220	22×45 1.49	25.4×40 1.47	30×30 1.47	35×25 1.47		25×50 1.54	30×40 1.55	35×30 1.53					
270	22×50 1.64	25.4×45 1.67	30×35 1.66	35×30 1.69			30×45 1.78	35×35 1.73					
330		25.4×50 1.88	30×40 1.90	35×30 1.87			30×50 2.01	35×40 2.00					
390			30×45 2.13	35×35 2.08				35×45 2.24					
470			30×50 2.40	35×40 2.39				35×50 2.53					
560			35×45 2.69		← Case size: ΦD×L(mm) ← 外壳尺寸: 直径X长度(毫米)								
680			35×50 3.04		← Maximum allowable ripple current at 85°C/120Hz(A.r.m.s) ← 在85°C/120Hz下的最大允许纹波电流(有效值, 单位: 安)								

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