

Miniature Size Aluminum Electrolytic Capacitors

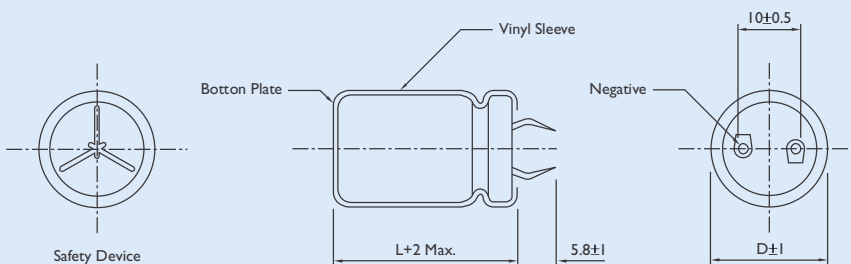
LH [For 85°C, 2000 Hours Miniature]

For Printed Circuit Board High-Performance Aluminum Electrolytic Power Supply Input and Output Filter Capacitors

ELECTRICAL CHARACTERISTICS

Operating Temperature Range	-40 to +85°C	-25 to +85°C
Rated Voltage Range	6.3 to 100VDC	160 to 450VDC
Capacitance Tolerance	±20% (at 25°C, 120Hz)	
Leakage Current	I = 0.02CV or 3mA Whichever is smaller. (At 25°C, After 5 Minutes Application of DC Working Voltage at 25°C)	
Dissipation Factor	Where, I; Leakage Current (μA) C: Nominal Capacitance (μF) V; Rated Voltage (V)	
	Rate Voltage (V)	6.3 10 16 25 35 50~80 100 160~250 315~450
	D.F (%)	60 50 40 25 25 20 15 10* 15
	Note: * (15%) For Case Size D = 35m/m or L = 20m/m (At 120Hz, 25°C) (WV = 6.3 ~ 100V For Capacitor Whose Capacitance Exceeds 1000μF The value of D.F.(%) is increased by 2% for every addition of 1000μF.	
Load Life	After the capacitors are subjected to DC with the full rated ripple current applied at 85°C for 2000 hours. The following specifications shall be satisfied when the capacitors are restored to 25°C the sum of DC voltage and peak AC voltage must not exceed their full rated voltage.	
	Capacitance Change	≤ ±20% of the Initial Value
	D.F (tanδ)	≤ 200% of the Initial Specified Value
	Leakage Current	≤ the Initial Specified Value
Shelf Life	The following specifications shall be satisfied when the capacitor are restored to 25°C after exposing them for 1000 hours at 85°C without voltage applied.	
	Capacitance Change	≤ ±20% of the Initial Value
	D.F (%)	≤ 150% of the Initial Specified Value
	Leakage Current	≤ 150% of the Initial Specified Value

DIAGRAM OF DIMENSIONS



DESCRIPTION

LH type capacitors, size are combined with snap-lock terminals for easy to mount on P.C. Board.

They are ideally suitable to be used in switching.

Power Supplies and Other Industrial or Commercial Applications

Multiplier for Ripple Current

Frequency coefficient

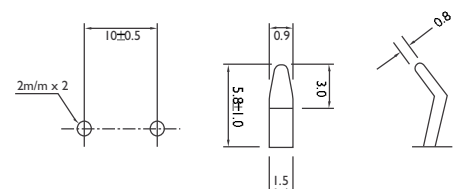
Frequency(Hz)	50	60	120	1K	10K~00K
6.3~100V	0.88	0.90	1.00	1.15	1.16
160~250V	0.75	0.78	1.00	1.16	1.23
350~450V	0.74	0.76	1.00	1.10	1.15

Temperature coefficient

Temperature(°C)	60	70	85
Factor	1.42	1.30	1.00

Unit : mm

Location of P.C.B. Holes





CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE W V							
	6.3		10		16		25	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
5600							22 × 25	2.20
6800							22 × 30 25 × 25	2.40 2.45
8200					22 × 25	2.60	22 × 35 25 × 25	2.70 2.75
10000					22 × 30 25 × 25	2.70 2.75	22 × 40 25 × 30 30 × 25	3.10 3.15 3.20
12000			22 × 25	2.40	22 × 30 25 × 25	2.90 2.95	22 × 45 25 × 35 30 × 30 35 × 25	3.50 3.45 3.50 3.55
15000	22 × 25	2.44	22 × 30 25 × 25	2.75 2.75	22 × 35 25 × 30 30 × 25	3.30 3.45 3.50	22 × 50 25 × 40 30 × 35 35 × 30	4.00 3.95 4.00 4.05
18000	22 × 30 25 × 25	2.60 2.62	22 × 35 25 × 25	3.15 3.05	22 × 40 25 × 35 30 × 30	3.70 3.75 3.80	25 × 45 30 × 35 35 × 30	4.45 4.45 4.60
22000	22 × 30 25 × 25	3.06 3.07	22 × 40 25 × 30 30 × 25	3.55 3.50 3.55	22 × 50 25 × 40 30 × 30 35 × 25	4.35 4.30 4.25 4.20	30 × 40 35 × 35	5.20 5.15
27000	22 × 35 25 × 30 30 × 25	3.49 3.52 3.57	22 × 45 25 × 35 30 × 30	4.05 4.00 4.05	25 × 45 30 × 35 35 × 30	4.70 4.65 4.65	30 × 45 35 × 40	5.95 5.90
33000	22 × 40 25 × 35 30 × 30 35 × 25	3.97 4.02 4.05 4.10	22 × 50 25 × 40 30 × 30 35 × 25	4.60 4.55 4.50 4.50	30 × 40 35 × 30	5.35 5.40	30 × 50 35 × 45	6.70 6.75
39000	22 × 50 25 × 40 30 × 30 35 × 25	4.56 4.50 4.46 4.51	25 × 45 30 × 35 35 × 30	5.10 5.05 5.05	30 × 45 35 × 35	6.00 5.95	35 × 50	7.55
47000	25 × 45 30 × 35 35 × 30	5.09 5.06 5.03	25 × 50 30 × 40 35 × 30	5.75 5.70 5.65	30 × 50 35 × 40	6.80 6.75		
56000	25 × 50 30 × 40 35 × 30	5.71 5.70 5.75	30 × 45 35 × 35	6.45 6.40	35 × 45	7.60		
68000	30 × 45 35 × 35	6.48 6.42	30 × 50 35 × 40	7.05 7.10	35 × 50	8.00		
82000	30 × 50 35 × 40	7.32 7.29	35 × 50	7.50				
100000	35 × 45	8.31						
120000	35 × 50	8.60						

Note : *1. D × L : mm

*2. Ripple Current : (mA r.m.s 85°C / 120Hz)



CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE W V							
	35		50		63		80	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1200							22 × 25	1.65
1500							22 × 30	1.90
							25 × 25	1.90
1800					22 × 25	1.85	22 × 35	2.20
							25 × 30	2.20
							30 × 25	2.20
2200			22 × 25	1.90	22 × 30	2.30	22 × 40	2.45
					25 × 25	2.30	25 × 30	2.45
							30 × 25	2.50
2700			22 × 30	2.10	22 × 35	2.45	22 × 45	2.80
			25 × 25	2.20	25 × 30	2.45	25 × 35	2.80
					30 × 25	2.50	30 × 30	2.85
							35 × 25	2.85
3000			22 × 30	2.35	22 × 40	2.60	22 × 50	3.15
			25 × 25	2.35	25 × 30	2.65	25 × 40	3.20
					30 × 25	2.70	30 × 30	3.20
							35 × 25	3.20
3900	22 × 25	2.20	22 × 35	2.65	22 × 45	2.95	25 × 45	3.60
			25 × 30	2.65	25 × 35	2.95	30 × 35	3.60
			30 × 25	2.65	30 × 30	3.00	35 × 30	3.60
4700	22 × 30	2.40	22 × 40	3.00	22 × 50	3.40	25 × 50	4.05
	25 × 25	2.40	25 × 35	3.00	25 × 40	3.35	30 × 40	4.05
			30 × 25	2.95	30 × 30	3.35	35 × 35	4.10
					35 × 25	3.40		
5600	22 × 35	2.75	22 × 45	3.35	25 × 45	3.70	30 × 45	4.55
	25 × 25	2.75	25 × 40	3.35	30 × 35	3.75	35 × 35	4.50
			30 × 30	3.35	35 × 30	3.75		
			35 × 25	3.40				
6800	22 × 40	2.85	22 × 50	3.80	30 × 40	4.25	30 × 50	5.15
	25 × 30	2.85	25 × 40	3.80	35 × 30	4.20	35 × 40	5.15
	30 × 25	2.90	30 × 30	3.80				
			30 × 35	3.85				
			35 × 30	3.85				
8200	22 × 45	3.15	25 × 50	4.35	30 × 45	4.80	35 × 45	5.85
	25 × 35	3.10	30 × 40	4.35	35 × 35	4.80		
	30 × 30	3.15	35 × 30	4.40				
10000	22 × 50	3.55	30 × 45	5.00	30 × 50	5.50	35 × 50	6.60
	25 × 40	3.50	35 × 35	4.95	35 × 40	5.45		
	30 × 30	3.45						
	35 × 25	3.40						
12000	25 × 45	3.95	30 × 50	5.60	35 × 45	6.20		
	30 × 35	4.00	35 × 40	5.55				
	35 × 30	4.05						
15000	25 × 50	4.95	35 × 45	6.45				
	30 × 40	4.95						
	35 × 35	5.00						
18000	30 × 45	5.50	35 × 50	6.70				
	35 × 40	5.55						
22000	30 × 50	6.00						
	35 × 45	6.05						
27000	35 × 50	6.90						

Note : *1. D × L : mm

*2. Ripple Current : (mA r.m.s 85°C / 120Hz)



CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE W V							
	100		160		180		200	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
180					22 × 20	1.00	22 × 25	0.95
220					22 × 25	1.10	22 × 25	1.10
270			22 × 25	1.15	22 × 25	1.25	22 × 25	1.25
					25 × 20	1.25	22 × 30	1.25
							25 × 25	1.25
330			22 × 25	1.40	22 × 25	1.40	22 × 25	1.45
			25 × 20	1.35	22 × 30	1.40	22 × 30	1.45
					25 × 25	1.40	25 × 25	1.45
390			22 × 30	1.55	22 × 30	1.60	22 × 30	1.60
			25 × 25	1.55	25 × 25	1.60	25 × 25	1.55
			30 × 25	1.50				
470			22 × 30	1.75	22 × 35	1.80	22 × 35	1.80
			25 × 25	1.75	25 × 30	1.80	25 × 30	1.80
			30 × 25	1.70	30 × 25	1.80	30 × 25	1.80
560			22 × 30	1.95	22 × 35	2.00	22 × 40	2.00
			25 × 30	1.95	22 × 40	2.00	25 × 35	2.00
			30 × 25	1.90	25 × 30	1.95	30 × 25	2.00
					30 × 25	2.00		
680			22 × 40	2.20	22 × 45	2.25	22 × 45	2.35
			25 × 30	2.20	25 × 35	2.20	25 × 35	2.30
			30 × 25	2.15	30 × 30	2.20	30 × 30	2.30
					30 × 25	2.20	35 × 25	2.30
820	22 × 25	1.85	22 × 45	2.50	22 × 50	2.55	25 × 40	2.60
			25 × 35	2.55	25 × 40	2.55	25 × 45	2.60
			30 × 30	2.50	30 × 30	2.60	30 × 30	2.60
			35 × 25	2.50	30 × 35	2.60	30 × 35	2.60
					35 × 25	2.60	35 × 30	2.60
1000	22 × 30	2.10	22 × 50	2.85	25 × 45	2.85	25 × 45	3.00
	25 × 25	2.10	25 × 40	2.80	30 × 35	2.85	25 × 50	3.00
			30 × 35	2.80	35 × 30	2.90	30 × 35	3.05
			35 × 25	2.80			30 × 40	3.05
							35 × 30	3.00
1200	22 × 35	2.40	25 × 45	3.15	30 × 40	3.25	25 × 50	3.30
	25 × 30	2.45	30 × 35	3.15	35 × 30	3.30	30 × 40	3.30
			35 × 30	3.20	35 × 35	3.30	30 × 45	3.30
							35 × 30	3.30
							35 × 35	3.30
1500	22 × 40	2.70	30 × 45	3.75	30 × 45	3.85	30 × 50	3.80
	25 × 30	2.75	35 × 30	3.70	35 × 35	3.80	35 × 40	3.80
	30 × 25	2.75	35 × 35	3.70	35 × 40	3.80		
1800	22 × 45	3.10	30 × 50	4.20	35 × 40	4.30	35 × 45	4.35
	25 × 35	3.15	35 × 40	4.20	35 × 45	4.30		
	30 × 30	3.15						
	35 × 25	3.15						
2200	22 × 50	3.50	35 × 40	4.60	35 × 45	4.90	35 × 45	4.95
	25 × 40	3.55	35 × 45	4.80	35 × 50	4.90	35 × 50	4.95
	30 × 30	3.55						
	35 × 25	3.60						
2700	25 × 45	4.10	35 × 50	5.45				
	30 × 35	4.05						
	35 × 25	4.05						
3300	25 × 50	4.50						
	30 × 40	4.55						
	35 × 30	4.50						
3900	30 × 45	5.15						
	35 × 35	5.10						
4700	35 × 40	5.75						
5600	35 × 50	6.20						

Note : *1. D × L : mm

*2. Ripple Current : (mA r.m.s 85°C / 120Hz)



CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE W V							
	250		350		400		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
47							22 × 25	0.50
56					22 × 20	0.55	25 × 25	0.65
68			22 × 20	0.55	22 × 25	0.60	22 × 30	0.70
					22 × 20	0.60	22 × 25	0.70
82			22 × 25	0.65	22 × 25	0.80	22 × 30	0.80
			25 × 20	0.65	25 × 20	0.80	25 × 25	0.80
			22 × 30	0.90	22 × 30	0.90	22 × 35	0.95
100			25 × 20	0.90	25 × 25	0.90	25 × 30	0.95
							30 × 25	0.95
	22 × 20	0.78	22 × 30	1.00	22 × 35	1.05	22 × 40	1.05
120			25 × 25	1.00	25 × 25	1.05	25 × 30	1.05
							30 × 25	1.05
	22 × 25	0.90	22 × 35	1.15	22 × 35	1.15	22 × 45	1.20
150			25 × 30	1.15	25 × 30	1.15	25 × 35	1.20
			30 × 25	1.15	30 × 25	1.15	30 × 30	1.20
	22 × 25	1.05	22 × 40	1.30	22 × 45	1.30	25 × 40	1.35
180	25 × 20	1.00	25 × 30	1.25	25 × 35	1.30	30 × 35	1.35
			30 × 25	1.25	30 × 30	1.35	35 × 25	1.35
	22 × 30	1.15	22 × 45	1.45	22 × 50	1.50	25 × 50	1.55
220	22 × 35	1.15	25 × 35	1.45	25 × 40	1.50	30 × 40	1.55
	25 × 25	1.15	30 × 30	1.45	30 × 30	1.50	35 × 30	1.55
			35 × 25	1.45	35 × 25	1.50		
	22 × 30	1.30	25 × 40	1.65	25 × 40	1.65	30 × 45	1.75
270	25 × 25	1.30	30 × 35	1.65	30 × 35	1.65	35 × 35	1.70
			35 × 25	1.65	35 × 30	1.65		
	22 × 35	1.50	25 × 50	1.80	25 × 50	1.90	30 × 50	2.00
330	25 × 25	1.50	30 × 40	1.80	30 × 40	1.90	35 × 40	2.00
	30 × 25	1.50	35 × 30	1.80	35 × 30	1.85		
	22 × 40	1.65	30 × 40	2.00	30 × 45	2.15	35 × 45	2.25
390	25 × 35	1.65	35 × 30	2.00	35 × 35	2.10		
	30 × 25	1.65						
	22 × 40	1.85	30 × 45	2.25	30 × 50	2.40	35 × 50	2.50
470	25 × 35	1.85	35 × 35	2.25	35 × 40	2.40		
	30 × 30	1.90						
	35 × 25	1.90						
	22 × 45	2.10	35 × 40	2.50	35 × 45	2.70		
560	25 × 40	2.10						
	30 × 30	2.10						
	35 × 25	2.10						
	25 × 45	2.45	35 × 45	2.90	35 × 50	2.90	35 × 60	2.9
680	30 × 35	2.45						
	35 × 30	2.45						
	30 × 45	2.75						
820	35 × 30	2.75						
	30 × 50	3.30						
1000	35 × 40	3.30						
1200	35 × 40	3.55						
1500	35 × 45	4.05						

Note : *1. D × L : mm

*2. Ripple Current : (mA r.m.s 85°C / 120Hz)