

# Large Can 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	6.3~100V	160 to 450VDC
Capacitance Tolerance	820~120000µF 56~2200µF	
Leakage Current	I = 0.02CV or 3mA Whichever is smaller. (At 20°C, After 5 Minutes Application of DC Working Voltage at 20°C)	
Dissipation Factor	Rate Voltage (V)	6.3 10 16 25 35 50 63~100 160~400 450
	tan δ	0.60 0.55 0.55 0.45 0.35 0.30 0.25 0.15 0.20
Endurance	Rated Voltage(v)	6.3~16 25 35 50~63 80~100 160~400 450
	Z(-25°C) / Z(20°C)	3 3 3 2 2 2 4 8
	Z(-40°C) / Z(20°C)	12 10 8 6 5 - -
	After applying rated voltage with rated Ripple current for 2000hrs at 85°C, the capacitor shall meet the following requirements.	
	Capacitance Change	Within 20% of the Initial Value
	Dissipation Factor	200% or less of initial specified value
	Leakage Current	initial specified value or less
Shelf Life	After placed at 85°C without voltage applied for 1000 hours, the capacitor shall meet the same requirement as Endurance. 25°C	



### DESCRIPTION

Endurance : 85°C 2000 hours

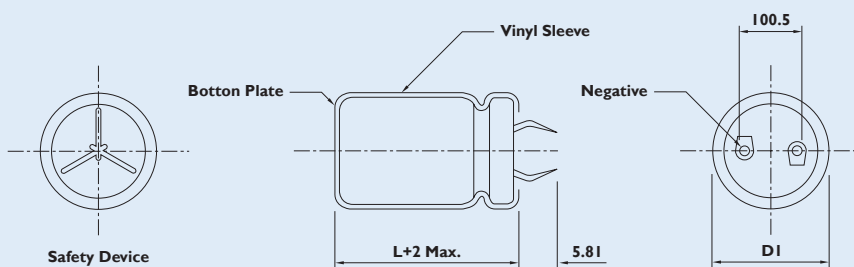
Ideally suitable for using in Switching Power Supplies and other industrial / commercial applications

### Multiplier for Ripple Current

Frequency coefficient

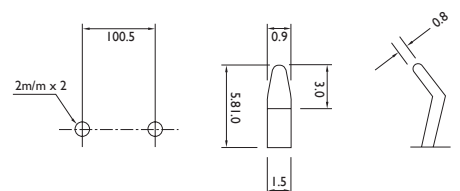
Frequency(Hz)	50	60	120	1K	10K
6.3~100V	0.88	0.90	1.00	1.15	1.16
160~250V	0.75	0.78	1.00	1.16	1.23
350~450V	0.74	0.76	1.00	1.10	1.15

### DIAGRAM OF DIMENSIONS



Unit : mm

Location of P.C.B. Holes





## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

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

Note : \*1. D L : mm

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



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV							
	35 SIZE		50 SIZE		63 SIZE		80 SIZE	
	SIZE	RIPPLE	SIZE	RIPPLE	SIZE	RIPPLE	SIZE	RIPPLE
1000								
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
3300			22 × 30	2.35	22 × 40	2.60	22 × 50	3.15
			25 × 25	2.35	25 × 30	2.65	25 × 40	2.80
					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
	22 × 30	2.40	22 × 40	3.00	22 × 50	3.40	25 × 50	4.05
4700	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 × 25	3.40	35 × 35	4.10
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			30 × 40	4.25	30 × 50	5.15
	25 × 30	2.85	25 × 40	3.80	35 × 30	4.20	35 × 40	5.15
			22 × 40	3.26				
	30 × 25	2.90	35 × 30	3.85				
			30 × 35	3.85				
6900								
8200	22 × 45	3.45	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				
	22 × 50	3.55	30 × 45	5.00	30 × 50	5.50	35 × 50	6.60
10000	25 × 40	3.50	35 × 35	4.95				
	30 × 30	3.45			35 × 40	5.45		
	35 × 25	3.40						
12000	25 × 45	3.95	30 × 50	5.60	35 × 45	6.20		
	30 × 35	4.05	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	5.55	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 : (A r.m.s 85°C / 120Hz)



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV							
	100 SIZE	RIPPLE	160 SIZE	RIPPLE	180 SIZE	RIPPLE	200 SIZE	RIPPLE
180					22 x 20	1.00	22 x 25	0.95
220					22 x 25	1.10	22 x 25	1.10
270					22 x 25	1.25	22 x 25	1.25
					25 x 20	1.25	22 x 30	1.25
330			22 x 25	1.40			22 x 30	1.45
			25 x 20	1.35	22 x 30	1.40	22 x 30	1.45
					25 x 25	1.40		
390			22 x 30	1.55	22 x 30	1.60	22 x 30	1.60
			25 x 25	1.55	25 x 25	1.60	25 x 25	1.55
			30 x 25	1.50				
470			22 x 30	1.75	22 x 35	1.80	22 x 35	1.80
			25 x 25	1.75	25 x 30	1.80	25 x 30	1.80
			30 x 25	1.70	30 x 25	1.80	30 x 25	1.80
560			22 x 30	1.95			22 x 40	2.00
			25 x 30	1.95	22 x 40	2.00	25 x 35	2.00
			30 x 25	1.90			30 x 25	2.00
					30 x 25	2.00		
680			22 x 40	2.20	22 x 45	2.25	22 x 45	2.35
			25 x 30	2.20	25 x 35	2.20	25 x 40	2.30
			30 x 25	2.15	30 x 30	2.20	30 x 30	2.30
					30 x 25	2.20	35 x 25	2.30
	22 x 25	1.85	22 x 45	2.50	22 x 50	2.55	25 x 45	2.60
					25 x 40	2.55		
820			25 x 35	2.55			30 x 35	2.60
			30 x 30	2.50	30 x 35	2.60		
			35 x 25	2.50	35 x 25	2.60	35 x 30	2.60
	22 x 30	2.10	22 x 50	2.85	25 x 45	2.85	25 x 50	3.00
			25 x 40	2.80				
1000	25 x 25	2.10	30 x 35	2.80	30 x 35	2.85	30 x 40	3.05
			35 x 25	2.80	35 x 30	2.90		
							35 x 30	3.00
1200	22 x 35	2.40	25 x 45	3.15	30 x 40	3.25	30 x 45	3.30
	25 x 30	2.45	30 x 35	3.15			35 x 35	3.30
			35 x 30	3.20	35 x 35	3.30		
1500	22 x 40	2.70	30 x 45	3.75	30 x 45	3.85	30 x 50	3.80
	25 x 30	2.75	35 x 35	3.70	35 x 40	3.80	35 x 40	3.80
	30 x 25	2.75						
	22 x 45	3.10	30 x 50	4.20			35 x 45	4.35
1800	25 x 35	3.15	35 x 40	4.20	35 x 50	4.30		
	30 x 30	3.15						
	35 x 25	3.15						
2200	22 x 50	3.50						
	25 x 40	3.55	35 x 45	4.80	35 x 50	4.90	35 x 50	4.95
	30 x 30	3.55						
	35 x 25	3.60						
2700	25 x 45	4.10						
	30 x 35	4.05						
	35 x 30	4.05						
3300	25 x 50	4.50						
	30 x 40	4.55						
	35 x 30	4.50						
3900	30 x 45	5.15						
	35 x 35	5.10						
4700	35 x 40	5.75						
5600	35 x 50	6.20						
10000								

Note : \*1. D x L : mm

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



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV							
	250 SIZE		350 SIZE		400 SIZE		450 SIZE	
		RIPPLE		RIPPLE		RIPPLE		RIPPLE
47								
56					22 x 20	0.55	25 x 25	0.65
68			22 x 20	0.55	22 x 25	0.60	22 x 30	0.70
					25 x 20	0.60	22 x 25	0.70
82			22 x 25	0.65	22 x 25	0.80	22 x 30	0.80
			25 x 20	0.65	25 x 20	0.80	25 x 25	0.80
100			22 x 30	0.90	22 x 30	0.90	22 x 35	0.95
			25 x 20	0.90	25 x 25	0.90	25 x 30	0.95
120							30 x 25	0.95
	22 x 20	0.78	22 x 30	1.00	22 x 35	1.05	22 x 40	1.05
			25 x 25	1.00	25 x 25	1.05	25 x 30	1.05
150							30 x 25	1.05
	22 x 25	0.90	22 x 35	1.15	22 x 35	1.05	22 x 45	1.20
			25 x 30	1.15	25 x 30	1.15	25 x 35	1.20
			30 x 25	1.15	30 x 25	1.15	30 x 30	1.20
180	22 x 25	1.05	22 x 40	1.30	22 x 45	1.30	25 x 40	1.35
	25 x 20	1.00	25 x 30	1.25	25 x 35	1.30		
			30 x 25	1.25	30 x 30	1.35	30 x 35	1.25
220	22 x 30	1.15	22 x 45	1.45	22 x 50	1.50	25 x 50	1.55
			25 x 35	1.45	25 x 40	1.50	30 x 40	1.55
	25 x 25	1.15	30 x 30	1.45	30 x 30	1.50	35 x 30	1.55
			35 x 25	1.45	35 x 25	1.50		
270	22 x 30	1.30	25 x 40	1.65	25 x 40	1.65	30 x 45	1.75
							35 x 35	1.70
	25 x 25	1.30	30 x 35	1.65	30 x 35	1.65		
300			35 x 25	1.65	35 x 30	1.65		
	22 x 35	1.50						
330			25 x 50	1.80	30 x 40	1.90	30 x 50	2.00
	25 x 30	1.50	30 x 40	1.80				
	30 x 25	1.50	35 x 30	1.80	35 x 30	1.85	35 x 40	2.00
	22 x 40	1.66	30 x 40	2.00	30 x 45	2.15	35 x 45	2.25
390			35 x 30	2.00				
	25 x 35	1.65			35 x 35	2.10		
470	30 x 25	1.65						
	22 x 45	1.85	30 x 45	2.25	30 x 50	2.40	35 x 50	2.50
			35 x 35	2.25	35 x 40	2.40		
560	25 x 35	1.85						
	30 x 30	1.90						
	35 x 25	1.90						
	22 x 50	2.09	35 x 40	2.50	35 x 45	2.70		
680	25 x 40	2.10						
	30 x 35	1.99						
	35 x 25	2.10						
820	25 x 50	2.43	35 x 45	2.90	35 x 50	2.90		
	30 x 40	2.46						
	35 x 30	2.49						
1000	30 x 45	2.75						
	35 x 35	2.77						
1200	30 x 45	3.30						
	35 x 45	3.30						
	35 x 40	3.55						

Note : \*1. D x L : mm

\*2. Ripple Current : (A r.m.s 105°C / 120Hz)