

# Miniature Size Aluminum Electrolytic Capacitors

# LV [ For 105°C, 3000 Hours General ]

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



## DESCRIPTION (LG Series 105°C 2000 Hours Assured)

LV type capacitors are combined with snaplock terminals for easy to mount on P.C. Board.

Highly reliable capacitors that withstand under high ripple current. Two to Four dimensions with same ratings. Aluminum case designed explosion-proof vent.

Best for switching power supplies.

## MULTIPLIER FOR RIPPLE CURRENT

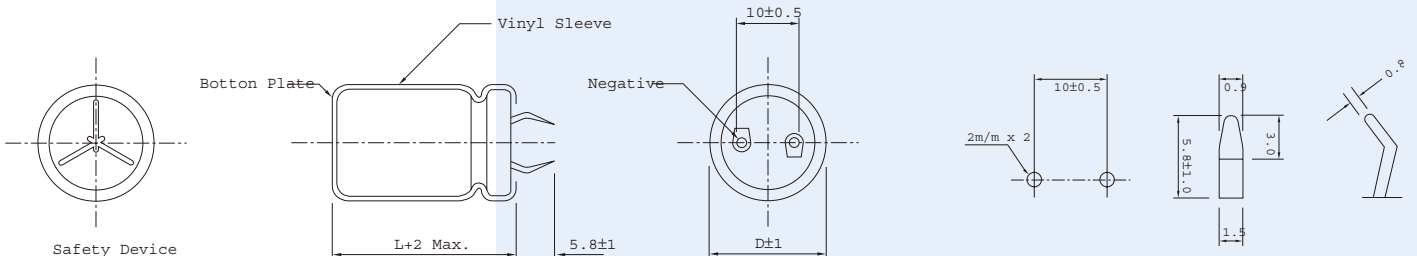
Frequency coefficient

Frequency(Hz)	60	120	1K	10~50K
160~250V	0.8	1.0	1.15	1.18
315~450V	0.8	1.0	1.10	1.15

Temperature coefficient

Temperature(°C)	20~45	65	85	105
Factor	2-10	1.89	1.52	1.0

## DIAGRAM OF DIMENSIONS



## ELECTRICAL CHARACTERISTICS

Operating Temperature Range	-40 to +105°C	-25 to +105°C
Rated Voltage Range	10 to 100VDC	160 to 450VDC
Nominal Capacitance Range	47 to 56000µF	
Capacitance Tolerance	±20% (At 25°C, 120Hz)	
Leakage Current	I = 3√CV (µA) after 5 minutes application of rated working voltage at +20°C	
Dissipation Factor (tanδ)	Rate Voltage (V) 10 16 25 35 50 63 80 100 160 250 315~450	
	D.F (%) 55 50 45 40 35 30 25 20 15 15 25	

For capacitance value > 33000µF, add following calculated value :  
(rated capacitance) - 33000µF X 0.1

Low Temperature Characteristics (120Hz)	Rated Voltage (V)	16~25	35	50	63~100	160	450
	Z(-25°C) / Z(20°C)	6	6	4	3	8	8
	Z(-40°C) / Z(20°C)	15	10	8	6	-	-

High Temperature Loading Test conditions  
After 3000 hours application of rated voltage at +105°C the capacitor shall meet the following limits  
Post test requirements at +20°C  
Leakage current : ≤ Initial specified value  
Capacitance Change : within ±20% of the Initial measured value  
tan δ : ≤ 200% of initial specified value  
The following specifications shall be satisfied when the capacitor are restored to 25°C

after exposing them for 1000 hours at 105°C without voltage applied.

Capacitance Change	≤ ±20% of the Initial Value
D.F	≤ 200% of the Initial Specified Value
Leakage Current	≤ 200% of Initial Specified Value



RoHS COMPLIANT

Unit : mm

Location of P.C.B. Holes



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV											
	10		16		25		35		50		63	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1000											20 x 25	1.10
1200											20 x 30	1.20
											22 x 25	1.20
1500									20 x 25	1.15	20 x 35	1.47
											22 x 30	1.47
									20 x 30	1.39	20 x 35	1.58
1800									22 x 25	1.34	22 x 30	1.58
											25 x 25	1.52
									20 x 35	1.60	20 x 40	1.80
2200									22 x 30	1.60	22 x 35	1.82
											25 x 30	1.75
							20 x 25	1.29	20 x 35	1.73	22 x 40	2.07
2700									22 x 30	1.70	25 x 35	2.11
									25 x 25	1.70	30 x 25	1.72
							20 x 30	1.57	20 x 40	1.97	22 x 45	2.33
3300							22 x 25	1.45	22 x 35	1.97	25 x 35	2.27
									25 x 30	1.88	30 x 30	2.24
					20 x 25	1.58	20 x 35	1.78	22 x 40	2.22	25 x 40	2.51
3900							22 x 30	1.69	25 x 30	2.20	30 x 35	2.55
									30 x 25	1.95		
					20 x 30	1.65	20 x 40	2.02	22 x 45	2.43	25 x 50	2.91
4700					22 x 25	1.61	22 x 35	2.02	25 x 35	2.43	30 x 40	2.86
							25 x 25	1.62	30 x 30	2.25	35 x 30	2.80
			20 x 25	1.68	20 x 35	1.85	22 x 35	2.13	22 x 50	2.75	30 x 40	3.22
5600					22 x 30	1.80	25 x 30	2.00	25 x 40	2.72	35 x 35	3.20
									30 x 30	2.64		
	20 x 25	1.31	20 x 30	1.80	20 x 40	2.11	22 x 40	2.41	25 x 45	3.30	30 x 50	3.65
6800			22 x 25	1.75	22 x 35	2.09	25 x 35	2.31	30 x 35	3.30	35 x 40	3.65
					25 x 25	1.87	30 x 25	2.31	35 x 30	3.25		
	20 x 30	1.59	20 x 35	2.08	22 x 40	2.31	22 x 50	2.85	30 x 40	3.60	35 x 45	4.04
8200			22 x 30	2.00	25 x 30	2.34	25 x 40	2.73	35 x 35	3.60		
					30 x 25	2.16	30 x 30	2.75				
	20 x 30	1.88	20 x 40	2.15	22 x 45	2.65	25 x 45	3.05	30 x 50	4.05	35 x 50	4.48
10000	22 x 25	1.77	22 x 30	2.10	25 x 35	2.61	30 x 35	3.05	35 x 40	4.04		
			25 x 25	2.05	30 x 30	2.61						
	20 x 35	2.18	22 x 35	2.31	22 x 50	2.80	25 x 50	3.37	35 x 45	4.56		
12000	22 x 30	2.10	25 x 30	2.30	25 x 40	2.81	30 x 40	3.23				
	25 x 25	1.94			30 x 30	2.74	35 x 30	3.19				
	20 x 40	2.27	22 x 40	2.68	25 x 45	3.27	30 x 45	3.75	35 x 50	4.77		
15000	22 x 35	2.23	25 x 35	2.58	30 x 35	3.13						
	25 x 30	2.10	30 x 25	2.30	35 x 30	3.26	30 x 30	3.67				
	22 x 40	2.41	22 x 50	3.20	30 x 40	3.56	30 x 40	4.37				
18000	25 x 30	2.34	25 x 40	3.16	35 x 35	3.84						
	30 x 25	2.25	30 x 30	2.57								
	22 x 45	2.58	25 x 45	3.36	30 x 45	4.04	35 x 45	4.92				
22000	25 x 35	2.54	30 x 30	2.98	35 x 35	3.75						
	30 x 30	2.50	35 x 30	3.25								
	22 x 50	3.17	25 x 50	3.85	35 x 45	4.74						
27000	25 x 40	3.07	30 x 35	3.30								
	30 x 30	2.95	35 x 35	3.93								
	25 x 45	3.39	30 x 40	3.80	35 x 50	5.50						
33000	30 x 35	3.33	35 x 35	4.27								
	35 x 30	3.21										
39000	30 x 40	3.70	30 x 45	4.30								
	35 x 35	3.68	35 x 40	4.80								
47000	30 x 45	4.22	30 x 50	4.81								
	35 x 40	4.16	35 x 45	5.53								
56000	35 x 50	5.00										

Note : \*1. D x L : mm

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



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV											
	80		100		160		180		200		220	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
180											20 x 25	0.81
220							20 x 25	0.81	20 x 25	0.83	20 x 30	0.94
									22 x 25	0.80	22 x 25	0.94
270					20 x 25	0.87	20 x 30	0.95	20 x 30	0.97	20 x 35	1.10
									22 x 25	0.99	22 x 30	1.09
					20 x 30	1.02	20 x 35	1.09	20 x 35	1.17	20 x 40	1.18
330					22 x 25	1.03	22 x 30	1.13	22 x 30	1.20	22 x 35	1.24
									25 x 25	1.20	25 x 25	1.14
					20 x 35	1.15	20 x 35	1.28	20 x 40	1.27	20 x 45	1.33
390					22 x 30	1.17	22 x 30	1.32	22 x 35	1.30	22 x 35	1.30
									25 x 30	1.34	25 x 25	1.26
					20 x 40	1.25	22 x 40	1.34	22 x 40	1.44	22 x 40	1.41
470					22 x 30	1.28	22 x 35	1.39	25 x 30	1.44	25 x 30	1.39
					25 x 25	1.29	25 x 30	1.43	30 x 25	1.48	30 x 25	1.37
			20 x 25	0.95	22 x 35	1.45	22 x 40	1.56	22 x 45	1.60	22 x 45	1.60
560					25 x 30	1.49	25 x 30	1.53	25 x 35	1.60	25 x 35	1.56
							30 x 25	1.56	30 x 30	1.60	30 x 30	1.61
											35 x 25	1.52
			20 x 30	1.15	22 x 40	1.64	22 x 45	1.76	22 x 50	1.75	25 x 40	1.75
680			22 x 25	1.09	25 x 35	1.70	25 x 35	1.76	25 x 40	1.76	30 x 35	1.76
					30 x 25	1.63	30 x 30	1.74	30 x 30	1.74	35 x 30	1.72
	20 x 25	1.04	20 x 35	1.31	22 x 45	1.85	22 x 50	1.97	25 x 45	2.10	25 x 45	1.97
820			22 x 30	1.32	20 x 40	1.92	25 x 40	1.99	30 x 35	2.11	30 x 40	2.06
					30 x 30	1.91	30 x 30	1.93	35 x 30	2.10	35 x 30	1.95
	20 x 30	1.24	20 x 35	1.43	25 x 45	2.17	25 x 45	2.24	25 x 50	2.36	30 x 45	2.44
1000	22 x 25	1.19	22 x 30	1.47	30 x 35	2.19	30 x 35	2.24	30 x 40	2.40	35 x 35	2.20
			25 x 25	1.45			35 x 30	2.20	35 x 35	2.30		
	20 x 35	1.43	20 x 40	1.61	25 x 50	2.43	30 x 40	2.53	30 x 45	2.69	35 x 40	2.37
1200	22 x 30	1.44	22 x 35	1.69	30 x 40	2.48	35 x 35	2.54	35 x 35	2.53		
			25 x 30	1.68	35 x 30	2.25						
	20 x 35	1.57	22 x 40	1.97	30 x 45	2.82	30 x 50	3.03	35 x 40	2.97	35 x 45	2.64
1500	22 x 30	1.59	25 x 35	1.98	35 x 35	2.62	35 x 40	2.91				
	25 x 25	1.59	30 x 25	1.95								
	20 x 40	1.77	22 x 45	2.23	30 x 50	3.13	35 x 45	3.25	35 x 45	3.45		
1800	22 x 35	1.79	25 x 40	2.20	35 x 40	2.97						
	25 x 30	1.71	30 x 30	2.20								
	22 x 40	2.03	25 x 45	2.53	35 x 45	3.34	35 x 50	3.62				
2200	25 x 35	1.98	30 x 35	2.55								
	30 x 25	1.98	35 x 30	2.50								
	22 x 45	2.39	25 x 50	2.82								
2700	25 x 40	2.35	30 x 40	2.86								
	30 x 30	2.35	35 x 35	2.89								
	25 x 45	2.64	30 x 45	3.30								
3300	30 x 35	2.61	35 x 35	3.25								
	35 x 30	2.47										
	25 x 50	2.92	30 x 50	3.60								
3900	30 x 40	2.82	35 x 40	3.67								
	35 x 30	2.97										
	30 x 45	3.34	35 x 45	3.80								
4700	35 x 35	3.38										
	30 x 50	3.80	35 x 50	4.05								
5600	35 x 40	3.80										
6800	35 x 45	3.90										
8200	35 x 50	4.20										

Note : \*1. D x L : mm

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



## CASE SIZE OF STANDARD PRODUCTS AND PERMISSIBLE RIPPLE CURRENT

CAP. (μF)	RATED VOLTAGE WV													
	250		315		350		385		400		420		450	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
47													20 x 25	0.36
56							20 x 25	0.37	20 x 25	0.40	20 x 25	0.40	20 x 30	0.41
													22 x 25	0.42
68					20 x 25	0.41	20 x 30	0.44	20 x 30	0.48	20 x 30	0.48	20 x 35	0.47
							22 x 25	0.45	22 x 25	0.49	22 x 25	0.50	22 x 30	0.50
													25 x 25	0.50
82			20 x 25	0.39	20 x 30	0.45	20 x 30	0.50	20 x 30	0.54	20 x 35	0.53	20 x 40	0.53
							22 x 30	0.52	22 x 30	0.56	22 x 30	0.56	22 x 35	0.56
											25 x 25	0.56	25 x 30	0.57
100			20 x 30	0.45	20 x 30	0.51	20 x 35	0.56	20 x 35	0.60	20 x 35	0.58	22 x 40	0.64
					22 x 25	0.53	22 x 30	0.58	22 x 30	0.62	22 x 30	0.63	25 x 30	0.63
							25 x 25	0.57	25 x 25	0.61	25 x 25	0.63	30 x 30	0.67
120			20 x 30	0.54	20 x 35	0.59	20 x 40	0.66	20 x 40	0.71	20 x 45	0.71	22 x 45	0.72
			22 x 25	0.56	22 x 30	0.61	22 x 35	0.68	22 x 35	0.73	22 x 35	0.73	25 x 35	0.71
					25 x 25	0.62	25 x 30	0.68	25 x 30	0.73	25 x 30	0.72	30 x 30	0.77
											30 x 25	0.75		
150	20 x 25	0.71	20 x 35	0.64	20 x 40	0.70	22 x 40	0.79	22 x 40	0.85	22 x 45	0.86	22 x 50	0.80
			22 x 30	0.66	22 x 35	0.73	25 x 30	0.78	25 x 35	0.85	25 x 35	0.83	25 x 40	0.82
			25 x 25	0.65	25 x 30	0.73	30 x 25	0.75	30 x 25	0.79	30 x 25	0.83	30 x 30	0.85
180	20 x 30	0.82	20 x 40	0.75	22 x 40	0.83	22 x 45	0.89	22 x 45	0.95	22 x 50	1.02	25 x 45	0.93
	22 x 25	0.84	22 x 35	0.78	25 x 30	0.80	25 x 35	0.86	25 x 35	0.92	25 x 40	0.94	30 x 35	0.94
			25 x 30	0.71	30 x 25	0.81	30 x 30	0.88	30 x 30	0.95	30 x 30	0.95		
											35 x 25	0.90		
220	20 x 35	0.95	22 x 40	0.89	22 x 45	0.94	22 x 50	1.01	22 x 50	1.08	25 x 45	1.13	25 x 50	1.05
	22 x 30	0.97	25 x 30	0.85	25 x 35	0.92	25 x 40	1.00	25 x 40	1.05	30 x 35	1.09	30 x 40	1.10
	25 x 25	0.99	30 x 25	0.83	30 x 30	0.98	30 x 30	1.00	30 x 35	1.24	35 x 30	1.05	35 x 30	1.01
270	20 x 40	1.08	22 x 45	1.01	22 x 50	1.07	25 x 45	1.13	25 x 50	1.29	25 x 50	1.37	30 x 45	1.25
	22 x 35	1.11	25 x 35	0.98	25 x 40	1.05	30 x 40	1.14	30 x 40	1.30	30 x 40	1.25	35 x 35	1.26
	25 x 30	1.15	30 x 30	1.01	30 x 30	1.03	35 x 30	1.10	35 x 30	1.18	35 x 35	1.25		
330	22 x 40	1.26	22 x 50	1.14	25 x 45	1.24	30 x 45	1.31	30 x 45	1.47	30 x 45	1.49	30 x 50	1.42
	25 x 30	1.26	25 x 40	1.12	30 x 35	1.24	35 x 35	1.32	35 x 35	1.41	35 x 35	1.42	35 x 40	1.44
	30 x 25	1.31	30 x 35	1.21	35 x 30	1.18								
390	22 x 45	1.41	25 x 45	1.31	25 x 50	1.38	30 x 50	1.48	30 x 50	1.64	30 x 50	1.67	35 x 45	1.61
	25 x 35	1.42	30 x 35	1.30	30 x 40	1.39	35 x 40	1.48	35 x 40	1.59	35 x 40	1.61		
	30 x 30	1.50	35 x 30	1.23	35 x 35	1.39								
470	22 x 50	1.58	30 x 40	1.53	30 x 45	1.57	35 x 45	1.76	35 x 45	1.87	35 x 45	1.86	30 x 50	1.80
	25 x 40	1.61	35 x 35	1.47	35 x 35	1.50							35 x 50	1.80
	30 x 30	1.61												
560	25 x 45	1.80	30 x 45	1.65	30 x 50	1.75	35 x 50	1.95	35 x 50	2.09				
	30 x 35	1.84	35 x 40	1.66	35 x 40	1.69								
680	25 x 50	2.03	35 x 45	1.96	35 x 45	1.96			30 x 50	1.95				
	30 x 40	2.09												
	35 x 30	1.96												
820	30 x 45	2.35	35 x 50	2.19										
	35 x 35	2.26												
1000	30 x 50	2.64												
	35 x 40	2.57												
1200	30 x 45	2.88												

Note : \*1. D x L : mm

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