



Large Can Aluminum Electrolytic Capacitors

Series

CLB

FEATURES

1. Highly reliable capacitors that withstand under high ripple current.
2. Two or three dimensions with same ratings.
3. Aluminum case designed explosion-proof vent.
4. Best for switching power supplies

SPECIFICATIONS

Item	Performance Characteristics													
Operating Temperature Range	-40 to +105°C													
Rated Working voltage Range	16 to 450V DC													
Nominal Capacitance Range	56~47000(uF)													
Capacitance Tolerance	±20% (120Hz, +20°C)													
Leakage Current	$I \leq 3 \sqrt{CV}$ after 5 minutes application of rated working voltage at +20°C													
Dissipation Factor $\tan \delta$ (120Hz+20°C)	Working voltage(V)	10~16	25	35~50	63	80	100	160~200	250	315~450				
	$\tan \delta$ (max.)	0.50	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.25				
Low Temperature characteristics	Impedance ratio max. at 120Hz													
	Working voltage(V)	16	25	35	50	63	80	100	160	200	250	315	400	450
	Z-25°C/Z+20°C	6	6	6	4	3	3	3	8	8	8	8	8	8
Surge voltage	Working voltage(V)	10	16	25	35	40	50	63	100					
	Surge voltage	13	20	32	44	50	63	79	125					
	Working voltage(V)	160	200	250	350	400	450							
	Surge voltage	200	250	300	400	450	500							
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 : ≤ ±20% of initial measured value $\tan \delta$: ≤200% of initial specified value													
Shelf life	At 105°C no voltage applied after 1000hours the capacitors shall meet the following limits													
	Post test requirements at+20°C Leakage current : ≤200 of Initial specified value Capacitance change : ≤±15% of initial measured value $\tan \delta$: ≤150% of initial specified value													
Others	JIS C-5141 JIS C-5102													

Ripple current MULTIPLIERS

1)Maximum rms ripple current at 120Hz,105°C are given in the table

2)Temperature multiplying factor: Where capacitors are operated at

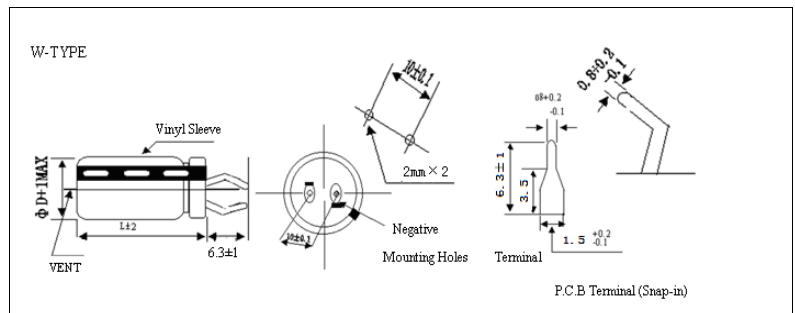
temperature other than 105°C,the maximum ripple current must be

multiplied by the figure shown in the table below.

Temperature coefficient

Temperature (°C)	20~45	65	75	105
Factor	1	0.91	0.73	0.36

3) Frequency multiplying factor:



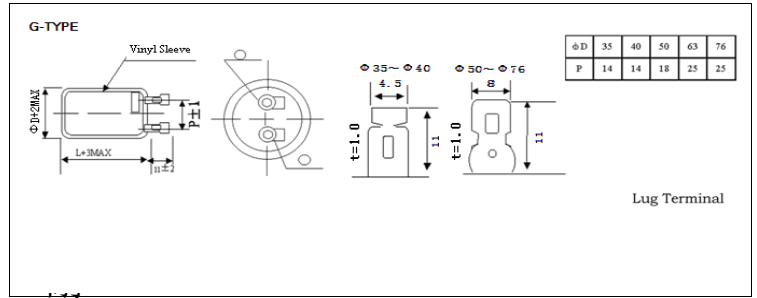


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If capacitor are used to filter circuits at a frequency other than 120Hz, the maximum ripple current must be multiplied by the figure shown in the table below.

Frequency coefficient

Frequency(Hz)	60	120	1k	10~50k
10~100V	0.9	1.0	1.15	1.25
160~250V	0.8	1.0	1.25	1.47
350~450V	0.8	1.0	1.30	1.47



DIMENSIONS

Voltage		ΦD × L(mm)											
Cap.(uF) Code	ΦD	16V(1C)				25V(1E)				35V(1V)			
		22	25	30	35	22	25	30	35	22	25	30	35
3300	338									22×25			
4700	478					22×25				1.43			
5600	568					1.56				2.0			
6800	688					22×30				2.10	2.01		
8200	828	22×25				22×30	25×25			2.38	2.28	2.28	
10000	109	22×30	25×25			22×35	25×30	30×25		2.78	2.72	2.73	
12000	129	22×30	25×25			2.14	2.18	2.25					
15000	159	22×35	25×30	30×25		2.48	2.50				3.02	3.02	
18000	189	22×40	25×35	30×30		2.28	2.26	2.38			2.5×45	30×35	
22000	229	22×45	22×40	30×35		2.69	2.76	2.72			3.02	3.02	
27000	279	2.28	2.26	2.38		2.65	2.65	2.56			3.70	3.68	
33000	339	2.98	3.15	3.05		2.98	3.15	3.05			3.54	3.54	
39000	399		2.5×45	30×35							3.0×45	35×35	
47000	479		3.40	3.39							4.24	3.96	4.90
				30×40	35×35						3.82	3.74	
				30×45	35×35						4.75		
				4.30	4.26						5.42		
				3.75									
				3.5×45									
				5.38									

Allowable Ripple (A rms) at 105°C 120Hz

Voltage		ΦD × L(mm)											
Cap.(uF) Code	ΦD	50V(1H)				63V(1J)				80V(1K)			
		22	25	30	35	22	25	30	35	22	25	30	35
820	827									22×25			
1000	109									1.11			
1200	128									22×30	25×25		
1500	158					22×25				1.29	1.29		
1800	188					22×30	25×25			1.39	1.39		
2200	228					1.25				2.09	2.01	2.10	
2700	278	22×30	25×25			1.44	1.44			2.2×35	25×30		
3300	338	22×30	25×25			1.75	1.75			2.09	2.01	2.10	
		1.13				22×40	25×35	30×25			2.5×45	30×35	
		1.48				1.70	1.70				2.43	2.43	
		1.70	1.70			2.03	2.10	1.93			2.43	2.43	
		2.2×30	25×30			2.2×35	25×30				2.5×50	30×40	35×30
		1.96	2.00			2.32	2.27	2.24			2.76	2.78	2.71



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3900	398	22×40 2.25	25×35 2.28	30×25 2.22			25×45 2.54	30×35 2.55			30×45 3.12	35×35 3.07
4700	478	22×45 2.56	25×40 2.61	30×30 2.58			25×50 2.90	30×40 2.90	35×30 2.83		30×50 3.52	35×40 3.50
5600	568	22×50 2.89	25×40 2.81	30×35 2.95				30×45 3.28	35×35 3.24			35×45 3.87
6800	688		25×50 3.37	30×40 3.39	35×30 3.31			30×50 3.73	35×40 3.71			35×50 4.19
8200	828			30×45 3.71	35×35 3.66				35×45 4.16			
10000	109			30×50 4.09	35×35 4.07				35×50 4.69			
12000	129				35×45 4.50						Case Size Allowable ripple	

Allowable Ripple (A rms) at 105°C 120Hz

DIMENSIONS

Voltage Cap.(uF) Code		Φ D × L (mm)											
		100V(2A)				160V(2C)				200V(2D)			
Φ D		22	25	30	35	22	25	30	35	22	25	30	35
270	277									22×30 0.90			
330	337					22×30 1.00				22×35 1.15	25×30 1.15		
390	397					22×30 1.28				22×40 1.30	25×30 1.30		
470	477					22×35 1.42	25×30 1.42			22×45 1.48	25×35 1.48	30×30 1.48	
560	567	22×35 1.07				22×40 1.65	25×35 1.65			22×50 1.65	25×40 1.65	30×30 1.65	
680	687	22×35 1.22	25×30 1.22			22×45 1.72	25×40 1.72				25×45 1.76	30×35 1.76	35×30 1.76
820	827	22×40 1.35	25×35 1.35			22×50 2.01	25×40 2.02	30×30 2.02	35×25 2.02			30×40 2.01	35×30 2.01
1000	108	22×45 1.54	25×35 1.56				25×50 2.25	30×35 2.25	35×30 2.25			30×50 2.40	35×35 2.40
1200	128	22×50 1.74	25×35 1.76	30×25 1.71				30×40 2.45	35×35 2.45				35×40 2.58
1500	158	22×50 1.99	25×40 2.03	30×30 2.00				30×45 2.82	35×40 2.82				35×50 3.0
1800	188		25×45 2.28	30×35 2.27				30×50 3.30	35×45 3.05				
2200	228		25×50 2.57	30×40 2.28	35×30 2.52				35×50 3.50				
2700	278			30×50 2.90	35×35 2.90				35×50 4.0				
3300	338				35×40 3.31								
3900	398				35×45 3.69								
4700	478				35×50 4.14								Case Size Allowable ripple

Allowable Ripple (A rms) at 105°C 120Hz

Voltage Cap.(uF) Code		Φ D × L (mm)											
		250V(2E)				400V(2G)				450V(2W)			
Φ D		22	25	30	35	22	25	30	35	22	25	30	35
56	566									22×30 0.41			
68	686					22×25 0.45				22×30 0.50	25×25 0.50		
82	826					22×30 0.52	25×25 0.52			22×35 0.60			
100	107					22×35 0.65	25×30 0.65			22×40 0.69	25×30 0.69	30×25 0.69	
120	127					22×40 0.75	25×30 0.75	30×25 0.75		22×45 0.80	25×35 0.80		



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150	157	22×25				22×45	25×35	30×30		22×50	25×40	30×35	35×25
		0.65				0.88	0.85	0.85		0.88	0.88	0.88	0.88
180	187	22×30				22×50	25×40	30×30	35×25		25×45	30×35	
		0.75				0.96	0.96	0.96	0.96		1.00	1.00	
220	227	22×30	25×25				25×45	30×35	35×30			30×40	35×30
		1.00	1.00				1.11	1.11	1.11			1.11	1.11
270	277	22×35	25×30	30×25			25×50	30×40	35×35			30×50	35×35
		1.18	1.18	1.18			1.22	1.22	1.22			1.26	1.26
330	337	22×40	25×35	30×30				30×45	35×35				35×40
		1.28	1.28	1.28				1.43	1.43				1.42
390	397	22×45	25×40	30×30				30×50	35×40				35×45
		1.48	1.48	1.48				1.62	1.62				1.55
470	477		25×45	30×35	35×30				35×45				35×50
			1.70	1.70	1.70				2.08				1.82
560	567		25×50	30×40	35×30				35×50				
			2.0	2.0	2.0				2.12				
680	687			30×45	35×35								
				2.10	2.10								
820	827				35×40								
					2.18								
1000	108				35×45								Case Size
					2.30								Allowable ripple

Allowable Ripple (A rms) at 105°C 120Hz