ALUMINUM ELECTROLYTIC CAPACITORS

LZF series Low Impedance, High Reliability

低阻抗，高信賴度

- Low Impedance at 100KHz with selected materials
  100KHz 低阻抗
- Load life:105℃ 5000~8000 hours
  壽命：105℃ 5000~8000 小時
- HIGH QUALITY
  高品質

SPECIFICATIONS

Item 項目	Performance Characteristics 特性
Operating Temperature Range 工作溫度範圍	-55℃~105℃
Rated Voltage Range 額定電壓範圍	6.3~100W.V.
Capacitance Range 靜電容量範圍	2.2~15000 uF
Capacitance Tolerance 靜電容量誤差	±20%, 120Hz , 20℃
Leakage Current 洩漏電流	I=0.01CV or 3uA whichever is greater.(After 2 minutes) I=0.01CV or 3μA 取較大值.(2 分鐘後) I=Leakage Current(μA) , C=Nominal Capacitance(μF) , V=Rated Voltage(V) I=洩漏電流 (μA) , C=額定容量(μF) , V=額定電壓(V)
Dissipation Factor (tan δ) 散逸因素 (損失角正切值)	When nominal capacitance is over 1000uF, tan δ shall be added 0.02 to the listed value with increase of every 1000uF, 額定容量超過 1000μF 時，額定容量每增加 1000μF，以下損失角增加 0.02.

Rated voltage 額定電壓 (V)	6.3	10	16	25	35	50	63	80	100	MAX
Tan δ 損失角正切值	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.09	0.08	(20℃ 120Hz)

Low Temperature Stability Impedance Ratio(MAX) 低溫特性阻抗比率

Rated Voltage 額定電壓(V)	6.3	10	16	25	35	50	63	80	100	
Z(-25℃)/Z(+20℃)	4	3	2	2	2	2	2	2	2	MAX
Z(-55℃)/Z(+20℃)	8	6	4	3	3	3	3	3	3	(120Hz)

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Load Life
負荷壽命

After life test with rated ripple at conditions stated in the table below, the capacitors shall meet the following requirement.
依據以下壽命要求印加額定紋波電流後，電容需符合以下要求。

Leakage Current 洩漏電流	Not more than the specified value 不超出規格值.
Capacitance Change 容量變化率	Within ±25% of initial value. 初始值±25%以內
Dissipation Factor 散逸因素	Not more than 200% of the specified value. 不超出規格值的 2 倍

Case Dia	Life Time(hrs)	
	6.3~16V	25~100V
φD=5~6.3	5000	5000
φD=8~10	6000	6000
φD=12~18	7000	8000

Shelf Life
放置壽命

After leaving capacitors under no load at 105℃ for 1000 hours , the capacitors shall meet the following requirements.
電容放置在 105℃無印加電壓的情況下儲存 1000 小時後，電容需符合以下要求。

Leakage Current 洩漏電流	Not more than the specified value 不超出規格值.
Capacitance Change 容量變化率	Within ±25% of initial value. 初始值±25%以內
Dissipation Factor 散逸因素	Not more than 200% of the specified value. 不超出規格值的 2 倍

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Standard
參照標準

According to JIS C 5101
依據 JIS C 5101 標準

Frequency coefficient

頻率系數

Frequency(Hz) Cap(uF)	60(50)	120	1k	10k	≧100k
0.47~4.7	0.35	0.42	0.60	0.80	1.00
6.8~33	0.45	0.55	0.75	0.90	1.00
39~330	0.60	0.70	0.85	0.95	1.00
470~1000	0.65	0.75	0.90	0.98	1.00
1800~15000	0.75	0.80	0.95	1.00	1.00

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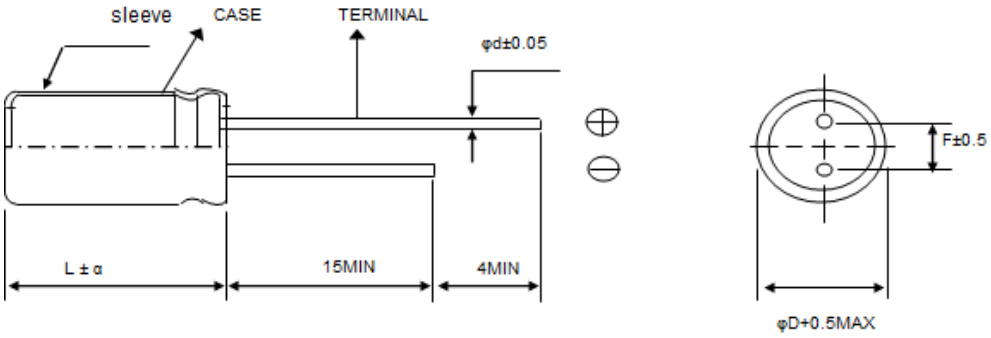
LZF series

DIMENSIONS 尺寸(mm)



φ D	5	6.3	8	10	12/12.5/13	16	18
φ d	0.5		0.6			0.8	
F	2.0	2.5	3.5	5.0		7.5	
α	L≦19: α =1.5 , L≧20: α =2.0						

STANDARD SIZE , RIPPLE CURRENT,IMPEDANCE

尺寸，紋波電流及阻抗標準

Ripple Current (mA 105℃,100KHz) r.m.s

Rated voltage 6.3V (0J)				
Nominal capacitance (uF)	Size φD×L(mm)	Ripple Current (mA)	Impedance (ΩMAX) 25℃,100KHz	Impedance (ΩMAX) -10℃,100KHz
100	5 x11	148	0.880	1.980
220	6.3 x11	245	0.400	0.920
330	6.3 x11	300	0.400	0.920
470	8 x11.5	391	0.260	0.624
1000	8 x16	483	0.220	0.508
	10 x12.5	576	0.170	0.391
1500	10 x12.5	936	0.124	0.620
	10 x16	1116	0.101	0.248
2200	10 x20	1206	0.090	0.210
	10 x23	1250	0.084	0.195
	12.5 x20	1296	0.078	0.179

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3300	12.5 x20	1496	0.078	0.179
4700	16 x25	1639	0.034	0.082
6800	16 x25	1900	0.034	0.082
10000	16 x31.5	1994	0.029	0.069
15000	18 x35.5	2195	0.029	0.069

LZF series

Rated voltage 10V (1A)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
100	5 x11	170	0.880	1.980
	6.3 x11	235	0.640	1.520
220	6.3 x11	300	0.400	0.920
330	6.3 x11	355	0.350	0.808
	8 x11.5	391	0.260	0.624
470	8 x11.5	576	0.260	0.624
680	8 x11.5	622	0.240	0.566
	8 x16	669	0.220	0.508
1000	8 x20	760	0.214	0.496
	10 x16	762	0.120	0.276
2200	12.5 x20	1496	0.078	0.179
3300	10 x30	1550	0.075	0.166
	12.5 x25	1646	0.060	0.144
4700	16 x25	1839	0.034	0.082
6800	16 x31.5	1994	0.029	0.069
10000	18 x35.5	2195	0.029	0.069

ALUMINUM ELECTROLYTIC CAPACITORS

LZF series

Rated voltage 16V (1C)				
Nominal capacitance (uF)	Size φD×L(mm)	Ripple Current (mA)	Impedance (ΩMAX) 25℃,100KHz	Impedance (ΩMAX) -10℃,100KHz
10	5 x11	116	1.120	2.430
47	5 x11	148	0.880	1.980
56	5 x11	165	0.820	1.980
100	5 x11	180	0.640	1.650
	6.3 x11	245	0.400	0.920
220	6.3 x11	391	0.400	0.920
	8 x11.5	391	0.260	0.624
330	8 x11.5	576	0.260	0.624
470	8 x11.5	600	0.250	0.498
	8 x16	622	0.240	0.566
	10 x12.5	669	0.220	0.508
680	10 x16	1050	0.150	0.252
1000	8 x16	780	0.230	0.610
	8 x20	800	0.214	0.595
	10 x16	820	0.158	0.369
	10 x20	885	0.132	0.309
	12.5 x20	1009	0.095	0.228
1200	10 x20	947	0.114	0.269
	10 x23	978	0.104	0.248
2200	12.5 x25	1646	0.060	0.144
2700	12.5 x30	1694	0.054	0.129
3300	12.5 x35	1743	0.047	0.113
	16 x25	1839	0.034	0.082
4700	16 x31.5	1994	0.029	0.069
6800	18 x35.5	2195	0.029	0.069

ALUMINUM ELECTROLYTIC CAPACITORS

LZF series

Rated voltage 25(1E)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (Ω MAX)	
	φD ×L(mm)		25℃,100KHz	-10℃,100KHz
10	5 x11	88	1.210	2.760
22	5 x11	118	1.050	2.370
33	5 x11	148	0.880	1.980
47	5 x11	245	0.880	1.980
68	5 x11	280	0.750	1.650
82	6.3 x11	220	0.550	1.450
100	6.3 x11	391	0.400	0.920
220	6.3 x11	500	0.350	0.850
	8 x11.5	576	0.260	0.624
330	8 x11.5	620	0.260	0.624
	10 x12.5	762	0.170	0.391
	10 x16	885	0.145	0.334
390	8 x16	800	0.240	0.566
470	8 x15	669	0.215	0.508
	8 x20	672	0.214	0.508
	10 x16	1009	0.120	0.276
	10 x20	1089	0.120	0.276
680	10 x16	1150	0.110	0.252
820	12.5 x20	1327	0.099	0.228
1000	10 x20	1168	0.110	0.252
	10 x23	1328	0.100	0.228
	12.5 x20	1646	0.078	0.179

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1500	12.5 x25	1668	0.073	0.171
1800	16 x20	1790	0.045	0.106
2200	12.5 x25	1694	0.067	0.155
	12.5 x40	1742	0.056	0.130
	16 x25	1839	0.034	0.082
2700	16 x31.5	1916	0.032	0.076
3300	16 x31.5	1994	0.029	0.069
4700	18 x35.5	2195	0.029	0.069

ALUMINUM ELECTROLYTIC CAPACITORS

LZF series

Rated voltage 35V (1V)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
10	5 x11	118	1.400	2.370
22	5 x11	130	1.020	2.190
27	5 x11	181	0.965	2.175
33	5 x11	245	0.880	1.980
47	5 x11	318	0.640	1.450
	6.3 x11	391	0.400	0.920
68	6.3 x11	445	0.400	0.920
100	6.3 x11	537	0.400	0.920
	8 x11.5	576	0.260	0.624
150	8 x11.5	622	0.240	0.566
220	8 x11.5	686	0.260	0.624
	8 x16	669	0.220	0.508
	10 x12.5	762	0.170	0.391
330	8 x16	880	0.250	0.498
	8 x20	1009	0.150	0.276
	10 x12.5	940	0.140	0.262
	10 x16	1009	0.120	0.246
470	10 x20	1646	0.095	0.228
	12.5 x16	1680	0.086	0.207
560	10 x23	1694	0.086	0.207
680	10 x20	1720	0.082	0.193
	12.5 x20	1742	0.077	0.186

ALUMINUM ELECTROLYTIC CAPACITORS

820	12.5 x16	1780	0.077	0.186
1000	12.5 x20	1327	0.078	0.179
	12.5 x25	1839	0.060	0.144
	12.5 x30	1916	0.045	0.107
1800	16 x25	1955	0.037	0.088
2200	16 x31.5	1994	0.029	0.069
3300	18 x35.5	2195	0.029	0.069

LZF series

Rated voltage 50(1H)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
2.2	5 x11	43	2.500	5.750
3.3	5 x11	53	2.200	5.280
4.7	5 x11	88	1.900	4.370
6.8	5 x11	118	1.700	3.840
8.2	5 x11	120	1.600	3.500
10	5 x11	148	1.500	3.300
22	5 x11	245	0.900	1.980
33	6.3 x11	391	0.600	1.800
39	6.3 x11	483	0.550	1.650
47	6.3 x11	576	0.500	1.500
56	6.3 x11	650	0.280	0.736
68	6.3 x11	700	0.250	0.498
100	6.3 x16	750	0.400	1.250
	8 x11.5	762	0.260	0.621
220	8 x16	900	0.150	0.337
	10 x16	1009	0.120	0.276
	10 x20	1327	0.108	0.252

ALUMINUM ELECTROLYTIC CAPACITORS

270	8 x20	1000	0.120	0.276
330	8 x20	1150	0.100	0.235
	10 x20	1646	0.095	0.228
470	10 x20	1742	0.087	0.202
	12.5 x20	1839	0.078	0.176
680	12.5 x25	2050	0.075	0.170
1000	13 x25	1800	0.036	0.085
	16 x25	1994	0.034	0.082
	16 x31.5	2094	0.032	0.075
2200	18 x35.5	2195	0.029	0.067

ALUMINUM ELECTROLYTIC CAPACITORS

LZF series

Rated voltage 63V (1J)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
2.2	5 x11	45	3.450	7.460
10	5 x11	88	2.500	5.750
22	6.3 x11	138	1.200	2.760
27	6.3 x11	149	1.200	2.760
33	6.3 x11	160	1.200	2.760
47	6.3 x11	185	0.930	2.060
	8 x11.5	210	0.650	1.369
56	8 x11.5	210	0.630	1.340
100	10 x12.5	300	0.450	0.990
120	8 x20	330	0.500	0.110
180	8 x20	435	0.310	0.760
220	10 x20	520	0.210	0.483
270	10 x20	565	0.190	0.385
330	10 x20	600	0.180	0.383
	12.5 x20	660	0.160	0.352
470	12.5 x25	750	0.140	0.322
680	10 x40	1100	0.085	0.190
1000	16 x25	1250	0.056	0.097
	16 x31.5	1390	0.060	0.126
	18 x20	1350	0.056	0.097

LZF series

Rated voltage 80V (1K)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
33	6.3 x11	345	0.930	2.060
680	18 x25	1250	0.100	0.500

ALUMINUM ELECTROLYTIC CAPACITORS

LZF series

Rated voltage 100(2A)				
Nominal capacitance (uF)	Size	Ripple Current (mA)	Impedance (ΩMAX)	
	φD×L(mm)		25℃,100KHz	-10℃,100KHz
2.2	5 x11	30	6.000	13.80
3.3	5 x11	40	5.000	10.50
4.7	5 x11	65	4.500	9.900
10	5 x11	130	4.200	9.020
	6.3 x11	138	2.200	5.060
15	6.3 x11	140	2.100	5.000
18	6.3 x11	140	1.900	4.850
22	6.3 x11	150	1.500	4.350
	8 x11.5	160	1.100	2.640
27	8 x11.5	160	1.050	2.500
33	8 x16	220	0.750	1.780
	10 x12.5	230	0.760	1.780
47	8 x16	250	0.620	1.550
	10 x12.5	245	0.760	1.780
	10 x16	290	0.530	1.270
	10 x20	300	0.510	1.200
56	8 x16	250	0.450	0.960
82	10 x16	330	0.230	0.670
	10 x20	340	0.210	0.630
100	12.5 x20	430	0.370	0.850
120	10 x28	505	0.120	0.252
220	12.5 x25	500	0.330	0.780
	16 x25	660	0.120	0.252
330	16 x25	900	0.110	0.252
470	16 x35.5	1250	0.100	0.240
560	18 x31.5	1400	0.100	0.240
680	16 x35.5	1500	0.093	0.226