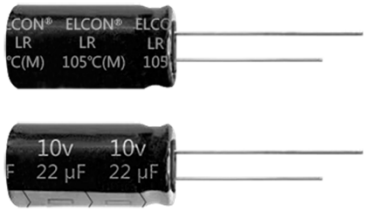
ELCON

Radial Lead Aluminum Electrolytic Capacitors

LR Series

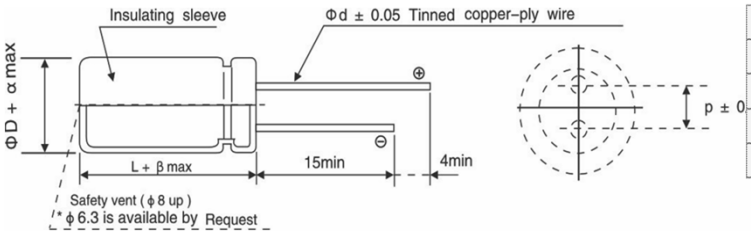
- Load life of 2000 hours at 105℃
- Extended temperature range -40~+105℃
- LR series aluminum electrolytic capacitors are small sized high reliability, low impedance capacitors
- High ripple current,low impedance



■SPECIFICATIONS

Item	Characteristics
Category Temperature Range	-40 ~ +105℃
Voltage Range	6.3 ~ 100V.DC
Nominal Cap. Range	0.1 ~ 15000μF
Capacitance Tolerance	± 20 % (at 120Hz , 20℃)
Leakage Current	I=0.01CV or 3 μA ,whichever is greater (After 2 minutes). where, I: max.leakage current(μA), C:Nominal capacitance(μF), V:Rated voltage (V) (at 20℃)
Dissipation Factor (MAX) (tanδ) (at 120Hz ,20℃)	WV: 6.3 / 10 / 16 / 25 / 35 / 50 / 63 / 100 tanδ: 0.22 / 0.19 / 0.16 / 0.14 / 0.12 / 0.10 / 0.09 / 0.08 When nominal capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000μF.
Low Temp.Impedance Stability at 120Hz	WV: 6.3 / 10 / 16~25 / 35~100 Z-25℃ / Z+20℃: 4 / 3 / 2 / 2 Z-40℃ / Z+20℃: 8 / 6 / 4 / 3
Endurance	After 2000 hours application of DC rated working voltage at 105℃, the capacitor shall meet the following limits: Capacitance change: ≤ ±20% of the initial value Dissipation Factor: ≤200% of the initial specified value Leakage Current: ≤ the initial specified value
Shelf Life	After storage for 1000 hours at 105℃ with no voltage applied, voltage treatment of JIS-C-5102 article 4-4 is to be given and then measurement shall be made, at which time requirement specified in the table "High Temperature Loading" can be met.

■ DRAWING



Unit: (mm)

ΦD	5	6.3	8	10	13	16	18	20	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
Φd	0.5			0.6		0.8			
β	1.0			1.5				2.0	
α	0.5								

■ MULTIPLIER FOR RIPPLE CURRENT

(1) Frequency Coefficient

Freq.(Hz) / Cap.(μF)	60(50)	120	1K	10K	100K
0.1~33	0.45	0.55	0.75	0.90	1.00
47~470	0.60	0.70	0.85	0.93	1.00
680~3300	0.65	0.75	0.90	0.95	1.00
4700~15000	0.75	0.80	0.92	0.97	1.00

(2) Temperature Coefficient

Ambient Temperature(℃)	40	60	70	85	105
Coefficient	2.00	1.80	1.60	1.40	1.00

LR Series

■STANDARD RATINGS

WV (vdc) / Parameter / Cap.(μf)	6.3				10				16				25			
	ΦDxL (mm)	Impedance(Ω) 20℃ 100KHz	Impedance(Ω) -10℃ 100KHz	Ripple Current (mArms) 105℃ 100KHz	ΦDxL (mm)	Impedance(Ω) 20℃ 100KHz	Impedance(Ω) -10℃ 100KHz	Ripple Current (mArms) 105℃ 100KHz	ΦDxL (mm)	Impedance(Ω) 20℃ 100KHz	Impedance(Ω) -10℃ 100KHz	Ripple Current (mArms) 105℃ 100KHz	ΦDxL (mm)	Impedance(Ω) 20℃ 100KHz	Impedance(Ω) -10℃ 100KHz	Ripple Current (mArms) 105℃ 100KHz
0.1																
0.15																
0.22																
0.33																
0.47																
0.68																
1.0																
2.2																
3.3																
4.7													5x11	3.10	5.10	27
6.8													5x11	2.50	4.20	38
10									5x11	3.10	5.10	40	5x11	1.90	3.70	45
22					5x11	3.10	5.10	50	5x11	2.50	4.20	60	5x11	1.70	3.00	70
33	5x11	3.10	5.10	60	5x11	2.50	4.20	65	5x11	1.90	3.70	80	5x11	1.50	2.90	90
47	5x11	2.50	4.20	70	5x11	1.90	3.70	80	5x11	1.70	3.00	110	6.3x11	1.30	2.20	120
68	5x11	1.90	3.70	75	5x11	1.70	3.00	92	6.3x11	1.50	2.90	134	6.3x11	1.20	2.10	152
100	5x11	1.70	3.00	120	5x11	1.50	2.90	140	6.3x11	1.30	2.20	170	8x11.5	1.10	2.00	180
220	6.3x11	1.50	2.90	200	6.3x11	1.30	2.20	210	8x11.5	1.10	2.00	260	8x11.5	1.00	1.90	270
330	6.3x11	1.30	2.20	240	8x11.5	1.10	2.00	290	8x11.5	1.00	1.90	350	10x12.5	0.90	1.70	400
470	8x11.5	1.10	2.00	340	8x11.5	1.00	1.90	390	10x12.5	0.90	1.70	440	10x20	0.70	1.30	570
680	10x12.5	1.00	1.90	580	10x16	0.90	1.70	620	10x20	0.80	1.50	720	10x20	0.65	1.00	700
1000	10x12.5	0.90	1.70	590	10x16	0.80	1.50	660	10x20	0.70	1.30	760	13x20	0.60	0.90	900
1500	13x20	0.80	1.50	847	13x20	0.70	1.30	980	13x20	0.65	1.00	1100	16x20	0.55	0.72	1150
2200	13x20	0.70	1.30	950	13x20	0.65	1.00	1007	13x25	0.60	0.90	1200	16x20	0.40	0.55	1300
3300	13x20	0.65	1.00	1100	13x25	0.60	0.90	1200	16x25	0.55	0.72	1400	16x31	0.30	0.42	1600
4700	16x25	0.60	0.90	1300	16x25	0.55	0.72	1500	16x31	0.40	0.55	1700	18x36	0.25	0.34	1900
6800	16x25	0.55	0.72	1600	16x31	0.40	0.55	1700	18x36	0.30	0.42	2000	18x40	0.22	0.30	2140
10000	16x31	0.40	0.55	1800	18x35	0.30	0.42	1900	18x40	0.25	0.34	2200	22x40	0.20	0.28	2450
15000	18x36	0.30	0.42	2605												

LR Series

■STANDARD RATINGS Ripple Current : (mArms) at 105℃ 100Hz; Case Size ΦD*L (mm)

WV (vdc) / Parameter / cap (μf)	35				50				63				100			
		Impedance(Ω)				Impedance(Ω)				Impedance(Ω)				Impedance(Ω)		
	ΦDxL (mm)	20℃ 100KHz	-10℃ 100KHz	Ripple Current	ΦDxL (mm)	20℃ 100KHz	-10℃ 100KHz	Ripple Current	ΦDxL (mm)	20℃ 100KHz	-10℃ 100KHz	Ripple Current	ΦDxL (mm)	20℃ 100KHz	-10℃ 100KHz	Ripple Current
0.1					5x11	3.10	5.42	1.5					5x11	3.00	5.20	3
0.22					5x11	3.00	5.20	3					5x11	2.94	5.00	5
0.33					5x11	2.94	5.00	5					5x11	2.75	4.60	7
0.47					5x11	2.80	4.85	8	5x11	2.75	4.60	15	5x11	2.65	4.50	11
0.68					5x11	2.75	4.60	9	5x11	2.65	4.50	18	5x11	2.60	4.30	18
1.0					5x11	2.65	4.50	10	5x11	2.60	4.30	21	5x11	2.50	4.20	20
2.2					5x11	2.60	4.30	20	5x11	2.50	4.20	31	5x11	1.90	3.70	25
3.3					5x11	2.50	4.20	26	5x11	1.90	3.70	39	5x11	1.70	3.00	35
4.7	5x11	2.50	4.20	30	5x11	1.90	3.70	33	5x11	1.70	3.00	35	5x11	1.50	2.90	45
6.8	5x11	1.90	3.70	40	5x11	1.70	3.00	60	5x11	1.50	2.90	55	6.3x11	1.30	2.20	64
10	5x11	1.70	3.00	50	5x11	1.50	2.90	90	5x11	1.30	2.20	60	6.3x11	1.10	2.00	70
22	5x11	1.50	2.90	80	6.3x11	1.30	2.20	95	6.3x11	1.10	2.00	114	8x11.5	1.00	1.90	130
33	5x11	1.30	2.20	110	6.3x11	1.10	2.00	110	6.3x11	1.00	1.90	145	10x12.5	0.90	1.70	180
47	6.3x11	1.10	2.00	135	6.3x11	1.00	1.90	140	8x11.5	0.90	1.70	250	10x16	0.80	1.50	250
68	6.3x11	1.00	1.90	175	6.3x11	0.90	1.70	157	10x12.5	0.80	1.50	302	10x20	0.70	1.30	329
100	8x11.5	0.90	1.70	210	8x11.5	0.80	1.50	240	10x12.5	0.70	1.30	310	13x20	0.65	1.00	370
220	10x12.5	0.80	1.50	370	10x16	0.70	1.30	430	10x20	0.65	1.00	480	16x25	0.60	0.90	660
330	10x16	0.70	1.30	470	10x20	0.65	1.00	540	13x20	0.60	0.90	700	16x25	0.55	0.72	700
470	10x20	0.65	1.00	600	13x20	0.60	0.90	740	13x25	0.55	0.72	890	16X31	0.40	0.55	930
680	13x25	0.60	0.90	900	16x25	0.55	0.72	900	16x25	0.40	0.55	1400	18x40	0.30	0.42	1490
1000	13x25	0.55	0.72	960	16x25	0.40	0.55	1100	16x25	0.30	0.42	1600	22x40	0.25	0.34	2230
1500	16X31	0.40	0.55	1200	16X31	0.30	0.42	1700	16X31	0.25	0.34	1800	22x40	0.22	0.30	2400
2200	16X31	0.30	0.42	1700	16X31	0.25	0.34	1900	18x40	0.22	0.30	2000				
3300	18x36	0.25	0.34	1800	18x36	0.22	0.30	2000	22x40	0.20	0.28	2040				
4700	18x40	0.22	0.30	2050	22x40	0.20	0.28	2200								
6800	22x40	0.20	0.28	2200												
10000																
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