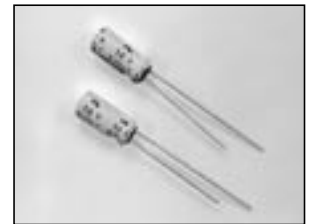


Miniature Aluminum Electrolytic Capacitors

NLE-L Series

LOW LEAKAGE CURRENT AND LONG LIFE ALUMINUM ELECTROLYTIC CAPACITORS, POLARIZED, RADIAL LEADS



FEATURES

- LOW LEAKAGE CURRENT & LOW NOISE
- CLOSE TOLERANCE AVAILABLE ($\pm 10\%$)
- NEW REDUCED SIZES (Alternate Sizes on Request)

CHARACTERISTICS

Rated Working Voltage Range	10 ~ 50Vdc					
Rated Capacitance Range	0.1 ~ 2200 μ F					
Operating Temperature Range	-40°C~+85°C					
Capacitance Tolerance	$\pm 20\%$ (M), $\pm 10\%$ (K)					
Max. Leakage Current After 2 minutes At 20°C	0.002CV or 0.4 μ A Whichever is greater					
Surge Voltage & Dissipation Factor (Tan δ)	W.V. (Vdc)	10	16	25	35	50
	S.V. (Vdc)	13	20	32	44	63
	Tan δ @ 120Hz	0.16	0.13	0.12	0.10	0.08
Low Temperature Stability (Impedance Ratio @ 120Hz)	W.V. (Vdc)	10	16	25	35	50
	Z-20°C/Z+20°C	2	1.5	1.5	1.5	1.5
	Z-40°C/Z+20°C	5	4	3	3	3
Life Test @ 85°C 2,000 Hours for 5-10 ϕ mm size 4,000 Hours for 12.5 ϕ mm & over	Capacitance Change	Within $\pm 20\%$ of initial value				
	Dissipation Factor	Less than 200% of specified maximum value				
	Leakage Current	Less than specified maximum value				

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms AT 120Hz AND 85°C)

Cap (μ F)	Working Voltage (Vdc)				
	10	16	25	35	50
0.1	-	-	-	-	1.5
0.22	-	-	-	-	2.5
0.33	-	-	-	-	3.5
0.47	-	-	-	-	5.0
1.0	-	-	-	-	11
2.2	-	-	-	-	23
3.3	-	-	-	-	40
4.7	-	-	45	45	45
10	-	65	65	70	70
22	-	85	100	110	110
33	-	100	140	140	170
47	110	140	170	190	200
100	180	230	280	300	350
220	300	350	400	450	500
330	400	450	500	550	600
470	500	550	650	700	800
1000	800	900	1000	1100	-
2200	1200	1300	-	-	-

MAXIMUM ESR (Ω AT 120Hz AND 20°C)

Cap (μ F)	Working Voltage (Vdc)				
	10	16	25	35	50
0.1	-	-	-	-	1326
0.22	-	-	-	-	603
0.33	-	-	-	-	402
0.47	-	-	-	-	282
1.0	-	-	-	-	133
2.2	-	-	-	-	60.3
3.3	-	-	-	-	40.2
4.7	-	-	26.2	28.2	28.2
10	-	19.9	13.3	13.3	13.3
22	-	9.05	6.03	6.03	6.03
33	-	6.03	4.02	4.02	4.02
47	5.29	4.23	2.82	2.82	2.82
100	2.49	1.99	1.33	1.33	1.33
220	1.13	0.91	0.61	0.61	0.61
330	0.76	0.61	0.41	0.41	0.41
470	0.53	0.43	0.29	0.29	0.29
1000	0.25	0.20	0.14	0.14	-
2200	0.12	0.09	-	-	-

PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.

Also found at www.niccomp.com/precautions

If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com



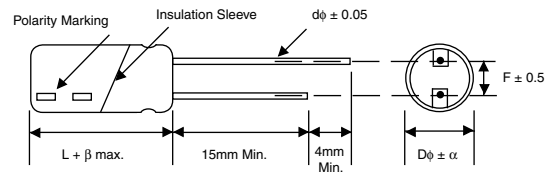
STANDARD PRODUCT AND CASE SIZE TABLE $D\phi \times L$ (mm)

Cap (μ F)	Code	Working Voltage (Vdc)				
		10	16	25	35	50
0.1	R10	-	-	-	-	5 x 11
0.22	R22	-	-	-	-	5 x 11
0.33	R33	-	-	-	-	5 x 11
0.47	R47	-	-	-	-	5 x 11
1.0	1R0	-	-	-	-	5 x 11
2.2	2R2	-	-	-	-	5 x 11
3.3	3R3	-	-	-	-	5 x 11
4.7	4R7	-	-	5 x 11	5 x 11	5 x 11
10	100	-	5 x 11	5 x 11	5 x 11	5 x 11
22	220	-	5 x 11	5 x 11	6.3 x 11	6.3 x 11.5
33	330	-	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5
47	470	5 x 11	6.3 x 11	6.3 x 11	8 x 11.5	8 x 11.5
100	101	6.3 x 11	8 x 11.5	8 x 11.5	10 x 12.5	10 x 16
220	221	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20
330	331	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 25
470	471	10 x 16	10 x 16	12.5 x 20	12.5 x 25	16 x 25
1000	102	12.5 x 20	12.5 x 20	16 x 25	16 x 25	-
2200	222	16 x 25	16 x 25	-	-	-

LEAD SPACING AND DIAMETER (mm)

Case Dia. ($D\phi$)	5	6.3	8	10	12.5	16	18	22
Leads Dia. ($d\phi$)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10
Dim. α	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0

DIMENSIONS (mm)



PART NUMBER SYSTEM

