Surface Mount Aluminum Electrolytic Capacitors

NACL Series

FEATURES

- CYLINDRICAL LEADLESS TYPE FOR SURFACE MOUNTING
- LOW LEAKAGE CURRENT (0.5μA TO 2.0μA max.)
- LOW COST REPLACEMENT FOR MANY TANTALUM APPLICATIONS
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

CHARACTERISTICS

Rated Voltage Range	6.3 ~ 50 Vdc						
Rated Capacitance Range	0.1 ~ 100μF						
Operating Temperature Range	-40° ~ +85°C						
Capacitance Tolerance	±20%(M)						
Max. Leakage Current After 2 Minutes at 20°C	0.002CV or 0.5μA, whichever is greater						
Surge Voltage & Max. Tanδ	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V. (Vdc)	8.0	13	20	32	44	63
	Tanδ @ 120Hz/20°C	0.24	0.20	0.16	0.14	0.12	0.10
Low Temperature Stability (Impedance Ratio @ 120Hz)	W.V. (Vdc)	6.3	10	16	25	35	50
	Z-25°C/Z +20°C	4	3	2	2	2	2
	Z-40°C/Z +20°C	8	6	4	4	3	3
Load Life Test at Rated W.V. 85°C 2,000 Hours	Capacitance Change	Within ± 25% of initial measured value					
	Tanδ at 120Hz	Less than 200% of specified value					
	Leakage Current	Less than specified value					

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

Cap. (μF)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
0.1						1.0
0.22						2.3
0.33						3.5
0.47						5
1.0						10
2.2						15
3.3						18
4.7				19	20	23
10			25	28	30	34
22	31	35	39	52	54	
33	39	43	57	63		
47	47	59	68			
100	71	76				

MAXIMUM ESR (Ω AT 20°C AND 120Hz)

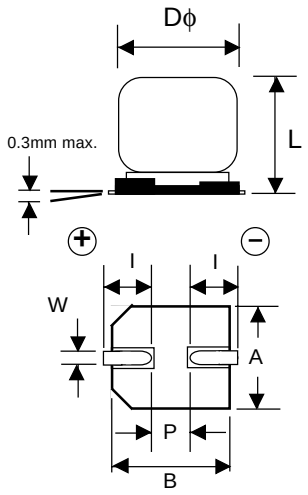
Cap. (μF)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
0.1						1660
0.22						754
0.33						503
0.47						353
1.0						166
2.2						75.4
3.3						50.3
4.7				49.5	42.3	35.3
10			26.5	23.2	19.9	16.6
22	18.1	15.1	12.1	10.6	9.05	
33	12.6	10.1	8.04	7.04		
47	8.47	7.06	5.65			
100	3.98	3.32				

RIPPLE CURRENT CORRECTION FACTOR

Frequency	50Hz ≤ f<100Hz	100Hz ≤ f<1KHz	1KHz ≤ f<10KHz	f ≥ 10KHz
Correction Factor	0.8	1.0	1.3	1.5

STANDARD PRODUCTION SIZE DØ xL

Cap. (µF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
0.1	R10						4x5.5
0.22	R22						4x5.5
0.33	R33						4x5.5
0.47	R47						4x5.5
1.0	1R0						4x5.5
2.2	2R2						4x5.5
3.3	3R3						4x5.5
4.7	4R7				4x5.5	4x5.5	5x5.5
10	100			4x5.5	5x5.5	5x5.56.	6.3x5.5
22	220	4x5.5	5x5.5	5x5.5	6.3x5.5	6.3x5.5	
33	330	5x5.5	5x5.5	6.3x5.5	6.3x5.5		
47	470	5x5.5	6.3x5.5	6.3x5.5			
100	101	5x5.5	6.3x5.5				



SEE PAGE 38
For Case Size Data
SEE PAGE 39
For Taping/Packaging Data

DIMENSIONS (mm)

Case Size	DØ ± 0.5	L MAX	A ± 0.2	I ± 0.2	W	P ± 0.2
4x5.5	4.0	5.5	4.3	1.8	0.5 ~ 0.8	1.0
5x5.5	5.0	5.5	5.3	2.1	0.5 ~ 0.8	1.4
6.3x5.5	6.3	5.5	6.6	2.5	0.5 ~ 0.8	2.2

NACL 100 M 35V 4.5x5.5 TR 13 F

- 13 F — Lead Free Finish Optional 97% Sn (min.), 3% Bi (max.); 330mm (13") Reel
- TR — Tape & Reel
- 4.5x5.5 — Size in mm
- 35V — Working Voltage
- M — Tolerance Code M=20%, K=10%
- 100 — Capacitance Code in µF, first 2 digits are significant. Third digit is no. of zeros, "R" indicates decimal for values under 10µF
- NACL — Series