

# Surface Mount Aluminum Electrolytic Capacitors NACL Series

## FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION
- LOW LEAKAGE CURRENT (0.5μA TO 2.0μA max.)
- LOW COST TANTALUM REPLACEMENT
- DESIGNED FOR REFLOW SOLDERING

**RoHS  
Compliant**

includes all homogeneous materials

\*See Part Number System for Details



## CHARACTERISTICS

Rated Voltage Rating	6.3 ~ 50Vdc						
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	0.18	0.14	0.12	0.10
Low Temperature Stability (Impedance Ratio @ 120Hz)	W.V. (Vdc)	6.3	10	16	25	35	50
	Z-40°C/Z +20°C	4	3	2	2	2	2
	Z-55°C/Z +20°C	8	8	4	4	4	4
Load Life Test at Rated W.V. 85°C 2,000 Hours	Capacitance Change	Within ±25% of initial measured value					
	Tanδ	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	-	-	-	18	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 120Hz AND 20°C)

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 FREQUENCY CORRECTION FACTOR

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

### 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](http://www.niccomp.com/precautions)

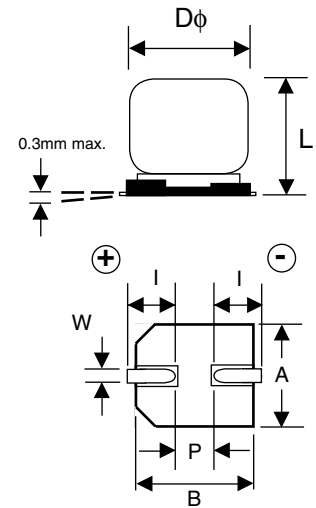
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



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## STANDARD PRODUCT AND CASE SIZE D $\phi$ xL (mm)

Cap. ( $\mu$ F)	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	5x5.5	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	-	-	-	-



## DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A/B $\pm$ 0.2	I $\pm$ 0.2	W	P $\pm$ 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

## PART NUMBER SYSTEM

