

Surface Mount Aluminum Electrolytic Capacitors

NACK Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- VERY LOW IMPEDANCE (**Up to 60% lower than NACZ**)
- WIDE TEMPERATURE RANGE (-55 +105°C)
- **REDUCED SIZE (Up to 50% smaller than NACZ)**
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING



CHARACTERISTICS

Rated Voltage Range	6.3 ~ 100Vdc										
Rated Capacitance Range	3.3 ~ 6,800µF										
Operating Temperature Range	-55°C ~ +105°C										
Capacitance Tolerance	±20%(M)										
Maximum Leakage Current after 2 minutes @ 20°C	0.01CV or 3µA, whichever is greater										
Maximum Tanδ @ 120Hz/20°C	W.V. (Vdc)		6.3	10	16	25	35	50	63	80	100
	S.V. (Vdc)		8.0	13	20	32	44	63	79	100	125
	All Case Sizes	C ≤ 1,000µF	0.26	0.19	0.16	0.14	0.12	0.10	0.08	0.08	0.07
		C = 2,200µF	-	0.21	-	0.16	-	-	-	-	-
		C = 3,300µF	0.30	-	0.20	0.18	-	-	-	-	-
C = 4,700µF		-	0.25	0.22	-	-	-	-	-	-	
Low Temperature Stability Impedance Ratio @ 120Hz	Z -25°C/Z +20°C		2	2	2	2	2	2	2	2	2
	Z -40°C/Z +20°C		3	3	3	3	3	3	3	3	3
	Z -55°C/Z +20°C		4	4	4	3	3	3	3	3	3
Load Life Test @ 105°C 4 ~ 10mm Dia. 2,000 Hours 12.5 ~ 18mm Dia. 5,000 Hours	Capacitance Change		Within ±30% of initial measured value								
	Tanδ		Less than 200% of specified maximum value								
	Leakage Current		Less than specified maximum value								

RoHS Compliant

includes all homogeneous materials

*See Part Number System for Details

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms AT 100KHz AND 105°C)

Cap (µF)	Working Voltage (Vdc)									
	6.3	10	16	25	35	50	63	80	100	
3.3	-	-	-	-	-	-	-	25	-	
4.7	-	-	-	-	90	60	50	40	-	
10	-	-	90	90	90	85	80	60	-	
					160	165	80	60	-	
22	90	90	90	160	160	165	120	130	130	
			160	160	165	120	130	130		
33	-	90	-	160	240	195	250	130	200	
		160	-	240	240	195	250	130	200	
47	90	-	160	240	240	195	250	200	500	
68	-	-	240	240	280	-	250	500	500	
100	160	-	240	280	280	350	400	500	793	
	240	-	240	300	600	350	400	500	793	
150	-	240	280	600	600	670	800	500	793	
220	240	160	280	600	600	670	800	-	917	
	300	300	300	600	600	670	800	-	917	
330	280	600	600	600	850	900	-	793	917	
	300	600	600	600	850	900	-	793	917	
470	600	600	600	850	1100	1610	1410	917	-	
680	-	600	850	-	1100	1610	1690	-	-	
1000	600	850	-	1100	1800	1610	-	-	-	
1500	850	-	1100	-	1800	-	-	-	-	
2200	-	1100	-	1800	-	-	-	-	-	
3300	1100	-	1800	2060	-	-	-	-	-	
4700	-	1800	2060	-	-	-	-	-	-	
6800	1800	2060	-	-	-	-	-	-	-	

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	60Hz	120Hz	1KHz	10KHz	100KHz
Correction Factor	0.7	0.75	0.9	0.95	1.0

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

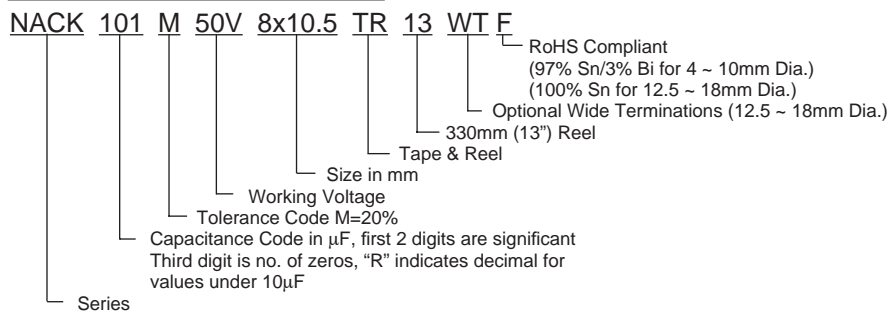


Surface Mount Aluminum Electrolytic Capacitors NACK Series

MAXIMUM IMPEDANCE (Ω AT 100KHz AND 20°C)

Cap (μF)	Working Voltage (Vdc)								
	6.3	10	16	25	35	50	63	80	100
3.3	-	-	-	-	-	-	-	5.0	-
4.7	-	-	-	-	1.35	2.9	3.0	3.0	-
10	-	-	1.35	1.35	1.35 0.70	1.52 0.88	1.5	2.4 2.4	-
22	1.35	1.35	1.35 0.70	0.70	0.70	0.88	1.2 1.2	1.3	1.3
33	-	1.35 0.70	-	0.70 0.36	0.36	0.68 0.68	0.65	1.3	0.7
47	1.35 0.70	-	0.70 0.36	0.36	0.36	0.68 0.68	0.65	0.7	0.32
68	-	-	0.36	0.36	0.34	-	0.65	0.32	0.32
100	0.70 0.36	-	0.36	0.34 0.26	0.34 0.16	0.34	0.35	0.32	0.17
150	-	0.36	0.34	0.16	0.16	0.18	0.16	0.32	0.17
220	0.36	0.34 0.26	0.34 0.26	0.16	0.16	0.18	0.16	-	0.153
330	0.34 0.26	0.16	0.16	0.16	0.08	0.12	-	0.17	0.153
470	0.16	0.16	0.16	0.08	0.06	0.073	0.082	0.153	-
680	-	0.16	0.08	-	0.06	0.073	0.08	-	-
1000	0.16	0.08	-	0.06	0.035	0.073	-	-	-
1500	0.08	-	0.06	-	0.035	-	-	-	-
2200	-	0.06	-	0.035	-	-	-	-	-
3300	0.06	-	0.035	0.033	-	-	-	-	-
4700	-	0.035	0.033	-	-	-	-	-	-
6800	0.035	0.033	-	-	-	-	-	-	-

PART NUMBER SYSTEM



Surface Mount Aluminum Electrolytic Capacitors

NACK Series

STANDARD PRODUCT AND CASE SIZE D ϕ xL (mm)

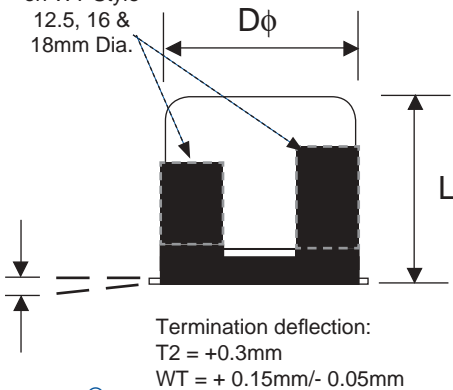
Cap (μ F)	Code	Working Voltage (Vdc)								
		6.3	10	16	25	35	50	63	80	100
3.3	3R3	-	-	-	-	-	-	-	5x6.1	-
4.7	4R7	-	-	-	-	4x6.1	4x6.1	5x6.1	6.3x6.1	-
10	100	-	-	4x6.1	4x6.1	4x6.1 5x6.1	5x6.1 6.3x6.1	6.3x6.1	6.3x8 8x6.5	-
22	220	4x6.1	4x6.1	4x6.1 5x6.1	5x6.1	5x6.1	6.3x6.1	6.3x8 8x6.5	8x10.5	8x10.5
33	330	-	4x6.1 5x6.1	-	5x6.1 6.3x6.1	6.3x1	6.3x8 8x6.5	8x10.5	8x10.5	10x10.5
47	470	4x6.1 5x6.1	-	5x6.1 6.3x6.1	6.3x6.1	6.3x6.1	6.3x8 8x6.5	8x10.5	10x10.5	12.5x14
68	680	-	-	6.3x6.1	6.3x6.1	6.3x8	-	8x10.5	12.5x14	12.5x14
100	101	5x6.1 6.3x6.1	-	6.3x6.1	6.3x8 8x6.5	6.3x8 8x10.5	8x10.5	10x10.5	12.5x14	16x17
150	151	-	6.3x6.1	6.3x8	8x10.5	8x10.5	10x10.5	12.5x14	12.5x14	16x17
220	221	6.3x6.1	6.3x8 8x6.5	6.3x8 8x6.5	8x10.5	8x10.5	10x10.5	12.5x14	-	18x17
330	331	6.3x8 8x6.5	8x10.5	8x10.5	8x10.5	10x10.5	12.5x14	-	16x17	18x17
470	471	8x10.5	8x10.5	8x10.5	10x10.5	12.5x14	16x17	16x17	18x17	-
680	681	-	8x10.5	10x10.5	-	12.5x14	16x17	18x17	-	-
1000	102	8x10.5	10x10.5	-	12.5x14	16x17	16x17	-	-	-
1500	152	10x10.5	-	12.5x14	-	16x17	-	-	-	-
2200	222	-	12.5x14	-	16x17	-	-	-	-	-
3300	332	12.5x14	-	16x17	18x17	-	-	-	-	-
4700	472	-	16x17	18x17	-	-	-	-	-	-
6800	682	16x17	18x17	-	-	-	-	-	-	-

DIMENSIONS (mm)

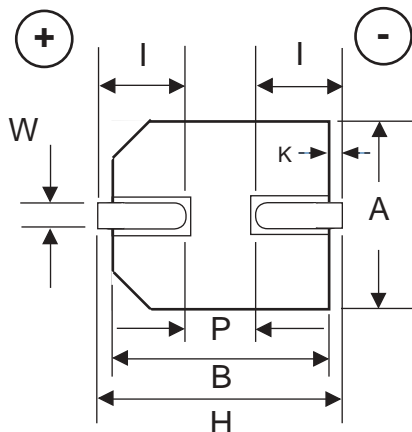
Denotes New Value

Case Size	D ϕ \pm 0.5	L max.	A, B \pm 0.2	H max.	I \pm 0.3	P \pm 0.3	W	K	R	S	T
4 x 6.1	4.0	6.1	4.3	5.5	1.8	1.0	0.65 \pm 0.1	0.35 \pm 0.2	-	-	-
5 x 6.1	5.0	6.1	5.3	6.5	2.2	1.5	0.65 \pm 0.1	0.35 \pm 0.2	-	-	-
6.3 6.1	6.3	6.1	6.6	7.8	2.6	1.8	0.65 \pm 0.1	0.35 \pm 0.2	-	-	-
6.3 x 8	6.3	8.0	6.6	7.8	2.6	1.8	0.65 \pm 0.1	0.35 \pm 0.2	-	-	-
8 x 6.5	8.0	6.5	8.3	9.5	3.4	2.2	0.65 \pm 0.1	0.35 \pm 0.2	-	-	-
8 x 10.5	8.0	10.5	8.3	10.0	3.4	3.1	0.9 \pm 0.2	0.7 \pm 0.2	-	-	-
10 x 10.5	10.0	10.5	10.3	12.0	3.5	4.6	0.9 \pm 0.2	0.7 \pm 0.2	-	-	-
12.5 x 14T2	12.5	14.0	13.5	15.0	4.7	4.4	0.9 \pm 0.3	0.7 \pm 0.3	-	-	-
12.5 x 14WT	12.5	14.0	13.5	15.0	4.7	4.4	1.2 \pm 0.3	0.7 \pm 0.3	2.2 \pm 0.2	7.1 \pm 0.2	2.4 \pm 0.2
16 x 17T2	16.0	17.5	17.0	19.0	5.5	6.7	1.2 \pm 0.3	0.7 \pm 0.3	-	-	-
16 x 17WT	16.0	17.5	17.0	19.0	5.5	6.7	1.4 \pm 0.3	0.7 \pm 0.3	3.0 \pm 0.2	9.0 \pm 0.2	1.9 \pm 0.2
18 x 17T2	18.0	17.5	19.0	21.0	6.7	6.7	1.2 \pm 0.2	0.7 \pm 0.3	-	-	-
18 x 17WT	18.0	17.5	19.0	21.0	6.7	6.7	1.4 \pm 0.2	0.7 \pm 0.3	3.0 \pm 0.2	11.0 \pm 0.2	1.9 \pm 0.2

Anti-Vibration Skirt on WT Style 12.5, 16 & 18mm Dia.



STANDARD



WT STYLE

