

# Surface Mount Aluminum Electrolytic Capacitors NACVF Series

## FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNT
- HIGH VOLTAGE (160VDC AND 450VDC)
- 10mm x 14mm ~ 18mm x 22mm CASE SIZES
- LONG LIFE (5000 HOURS AT +105°C)
- DESIGNED FOR REFLOW SOLDERING

**RoHS  
Compliant**  
includes all homogeneous materials  
\*See Part Number System for Details



## CHARACTERISTICS

Rated Voltage Range		160 ~ 450Vdc					
Rated Capacitance Range		2.2 ~ 100μF					
Operating Temperature Range		-40°C ~ +105°C					
Capacitance Tolerance		±20% (M)					
Max. Leakage Current After 2 Minutes		0.06CV + 10μA					
Max. Tan δ at 120Hz & 20°C		160Vdc	200Vdc	250Vdc	350Vdc	400Vdc	450Vdc
		0.15		0.20		0.24	
Low Temperature Stability (Impedance Ratio @ 120Hz)	Z -25°C/+20°C	2	2	3	5	6	6
Load Life @ 105°C & Rated Voltage 10x14mm 3,000 hours 10x18mm 4,000 hours 12.5 ~ 18mm Dia 5,000 hours	Capacitance Change	Within ±20% of initial measured value					
	Tan δ	Less than 200% of specified value					
	Leakage Current	Less than the specified maximum value					
Resistance to Soldering Heat Within the Recommended Reflow Conditions	Capacitance Change	Within ±10% of initial measured value					
	Tan δ	Less than the specified maximum value					
	Leakage Current	Less than the specified maximum value					

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

Cap (μF)	Working Voltage (Vdc)					
	160	200	250	350	400	450
2.2	-	-	-	-	-	29
3.3	-	-	-	38	40	41
4.7	-	-	-	50	50	49
10	70	80	88	270	250	310
22	-	470	560	350	410	560
33	470	600	560	480	600	-
47	600	600	710	670	-	-
68	750	750	990	-	-	-
100	1060	1060	-	-	-	-

## MAXIMUM ESR (Ω AT 120Hz AND 20°C)

Cap (μF)	Working Voltage (Vdc)					
	160	200	250	350	400	450
2.2	-	-	-	-	-	181
3.3	-	-	-	101	121	121
4.7	-	-	-	70.7	84.8	84.8
10	24.9	24.9	24.9	33.2	39.9	39.9
22	-	11.3	11.3	15.1	18.1	18.1
33	7.55	7.55	7.55	10.1	12.1	-
47	5.30	5.30	5.30	7.07	-	-
68	3.66	3.66	3.66	-	-	-
100	2.49	2.49	-	-	-	-

## RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Voltage (Vdc)	Frequency (Hz)			
	120	1K	10K ~ 30K	31K ~ 100K
160V ~ 250V	0.55	0.85	0.90	1.00
350V ~ 450V	0.50	0.80	0.90	1.00

### PRECAUTIONS

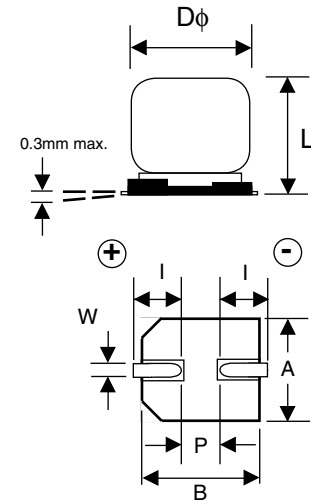
Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.  
Also found at [www.niccomp.com/precautions](http://www.niccomp.com/precautions)  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)



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## STANDARD PRODUCT AND CASE SIZE TABLE DφxL (mm)

Cap (μF)	Code	Working Voltage (Vdc)					
		160	200	250	350	400	450
2.2	2R2	-	-	-	-	-	10 x 14
3.3	3R3	-	-	-	10 x 14	10 x 14	10 x 18
4.7	4R7	-	-	-	10 x 18	10 x 18	12.5 x 17
10	100	10 x 14	10 x 18	10 x 18	16 x 17	16 x 17	18 x 17
22	220	-	12.5 x 17	16 x 17	18 x 17	16 x 22	18 x 22
33	330	12.5 x 17	16 x 17	18 x 17	16 x 22	18 x 22	-
47	470	16 x 17	18 x 17	16 x 22	18 x 22	-	-
68	680	18 x 17	16 x 22	18 x 22	-	-	-
		18 x 22					
100	101	18 x 22	18 x 22	-	-	-	-



## DIMENSIONS (mm)

Case Size	Dφ ±0.5	L max.	A ±0.2	B ±0.2	l ±0.2	W	P ±0.2
10 x 14	10.0	14.0	10.3	10.3	3.5	0.7 ~ 1.4	4.6
10 x 18	10.0	18.5	10.3	10.3	3.5	1.1 ~ 1.4	4.6
12.5 x 17T2	12.5	17.5	13.5	13.5	4.7	0.6 ~ 1.2	4.4
16 x 17T2	16.0	17.5	17.0	17.0	5.5	0.9 ~ 1.5	6.7
18 x 17T2	18.0	17.5	19.0	19.0	6.5	0.9 ~ 1.5	6.7
18 x 22T2	18.0	22.5	19.0	19.0	6.5	0.9 ~ 1.5	6.7

## PART NUMBER SYSTEM

