

# Surface Mount Aluminum Electrolytic Capacitors NACP Series

## FEATURES

- CYLINDRICAL V-CHIP CONTRUCTION
- LOW PROFILE, 4.6mm MAXIMUM HEIGHT
- DESIGNED FOR REFLOW SOLDERING

**RoHS  
Compliant**  
includes all homogeneous materials



## CHARACTERISTICS

\*See Part Number System for Details

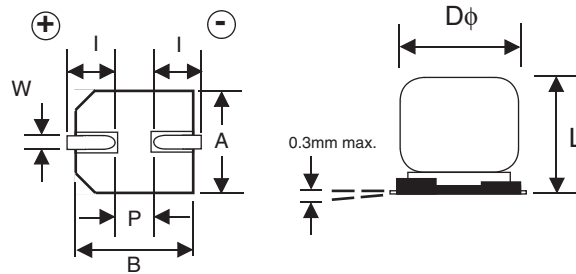
Rated Voltage Rating	4 ~ 50Vdc							
Rated Capacitance Range	0.1 ~ 220 $\mu$ F							
Operating Temperature Range	-40° ~ +85°C							
Capacitance Tolerance	$\pm$ 20%(M)							
Max. Leakage Current After 2 Minutes at 20°C	0.01CV or 3 $\mu$ A, whichever is greater							
Surge Voltage & Max. Tan $\delta$	W.V. (Vdc)	4	6.3	10	16	25	35	50
	S.V. (Vdc)	5	8.0	13	20	32	44	63
	Tan $\delta$ @ 120Hz/20°C	0.40	0.30	0.24	0.20	0.16	0.14	0.12
Low Temperature Stability (Impedance Ratio @ 120Hz)	W.V. (Vdc)	4	6.3	10	16	25	35	50
	Z-25°C/Z +20°C	7	4	3	2	2	2	2
	Z-40°C/Z +20°C	15	10	8	6	4	4	4
Load Life Test at Rated W.V. 85°C 1,000 Hours	Capacitance Change	Within $\pm$ 25% of initial measured value						
	Tan $\delta$	Less than 200% of specified value						
	Leakage Current	Less than specified value						

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

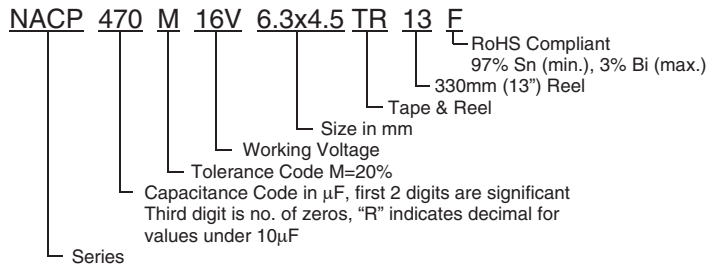
Cap. ( $\mu$ F)	Working Voltage (Vdc)						
	4	6.3	10	16	25	35	50
0.1	-	-	-	-	-	-	4x4.5
0.22	-	-	-	-	-	-	4x4.5
0.33	-	-	-	-	-	-	4x4.5
0.47	-	-	-	-	-	-	4x4.5
1.0	-	-	-	-	-	-	4x4.5
2.2	-	-	-	-	-	-	4x4.5
3.3	-	-	-	-	-	-	4x4.5
4.7	-	-	-	-	4x4.5	4x4.5	5x4.5
10	-	-	-	4x4.5	5x4.5	5x4.5	6.3x4.5
22	-	4x4.5	5x4.5	5x4.5	6.3x4.5	6.3x4.5	-
33	4x4.5	5x4.5	5x4.5	6.3x4.5	6.3x4.5	-	-
47	4x4.5	5x4.5	6.3x4.5	6.3x4.5	-	-	-
100	5x4.5	6.3x4.5	6.3x4.5	-	-	-	-
220	6.3x4.5	-	-	-	-	-	-

## DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L $\pm$ 0.1	A/B $\pm$ 0.2	I $\pm$ 0.2	W	P $\pm$ 0.2
4x4.5	4.0	4.5	4.3	1.8	0.5 ~ 0.8	1.0
5x4.5	5.0	4.5	5.3	2.1	0.5 ~ 0.8	1.4
6.3x4.5	6.3	4.5	6.6	2.5	0.5 ~ 0.8	2.2



## PART NUMBER SYSTEM



## 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 VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple Current (mA) +85°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Load Life Hours @ +85°C
NACP330M4V4X4.5TR13F	33	4	0.40	28	20.1	1,000
NACP470M4V4X4.5TR13F	47		0.40	33	14.1	1,000
NACP101M4V5X4.5TR13F	100		0.40	56	6.6	1,000
NACP221M4V6.3X4.5TR13F	220		0.40	98	3.0	1,000
NACP220M6.3V4X4.5TR13F	22	6.3	0.30	28	22.6	1,000
NACP330M6.3V5X4.5TR13F	33		0.30	37	15.1	1,000
NACP470M6.3V5X4.5TR13F	47		0.30	45	10.6	1,000
NACP101M6.3V6.3X4.5TR13F	100		0.30	70	5.0	1,000
NACP220M10V5X4.5TR13F	22	10	0.24	33	18.1	1,000
NACP330M10V5X4.5TR13F	33		0.24	41	12.6	1,000
NACP470M10V6.3X4.5TR13F	47		0.24	53	8.5	1,000
NACP101M10V6.3X4.5TR13F	100		0.24	74	3.98	1,000
NACP100M16V4X4.5TR13F	10	16	0.20	23	33.2	1,000
NACP220M16V5X4.5TR13F	22		0.20	37	15.1	1,000
NACP330M16V6.3X4.5TR13F	33		0.20	51	10.1	1,000
NACP470M16V6.3X4.5TR13F	47		0.20	61	7.1	1,000
NACP4R7M25V4X4.5TR13F	4.7	25	0.16	17	56.5	1,000
NACP100M25V5X4.5TR13F	10		0.16	27	26.5	1,000
NACP220M25V6.3X4.5TR13F	22		0.16	47	12.1	1,000
NACP330M25V6.3X4.5TR13F	33		0.16	57	8.1	1,000
NACP4R7M35V4X4.5TR13F	4.7	35	0.14	18	49.4	1,000
NACP100M35V5X4.5TR13F	10		0.14	29	23.2	1,000
NACP220M35V6.3X4.5TR13F	22		0.14	49	10.8	1,000
NACP10M50V4X4.5TR13F	0.1	50	0.12	1.0	1990	1,000
NACP22M50V4X4.5TR13F	0.22		0.12	2.0	905	1,000
NACP33M50V4X4.5TR13F	0.33		0.12	2.8	603	1,000
NACP47M50V4X4.5TR13F	0.47		0.12	4.0	423	1,000
NACP1R0M50V4X4.5TR13F	1.0		0.12	8.4	199	1,000
NACP2R2M50V4X4.5TR13F	2.2		0.12	14	90.5	1,000
NACP3R3M50V4X4.5TR13F	3.3		0.12	17	60.3	1,000
NACP4R7M35V5X4.5TR13F	4.7		0.12	21	42.3	1,000
NACP100M35V6.3X4.5TR13F	10		0.12	33	19.0	1,000

## RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Cap. (μF)	Frequency			
	10 < f ≤ 1KHz	1K < f ≤ 10KHz	10K < f ≤ 100KHz	≥ 100KHz
0.47 ~ 4.7	1.0	1.3	1.5	2.0
10 ~ 33	1.0	1.2	1.3	1.45
47 ~ 220	1.0	1.1	1.2	1.3



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## CARRIER TAPE

Case Size	A ±0.5	B ±0.2	C ±0.3	D ±0.1	P ±0.1	T ±0.2
4 x 4.5	4.7	4.7	12.0	5.5	8.0	5.1
5 x 4.5	5.7	5.7	12.0	5.5	12.0	5.1
6.3 x 4.5	7.0	7.0	16.0	7.5	12.0	5.1

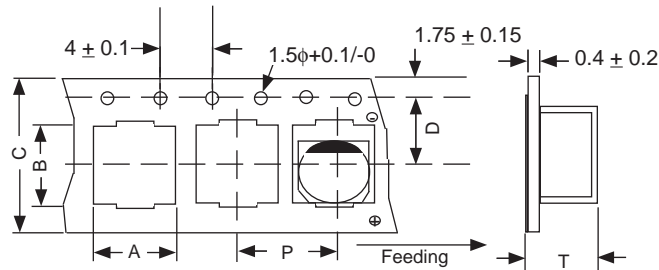
## TR13 330mm (13") REEL TR15 380mm (15") REEL

Case Size	W ±1.0	Quantity Per Reel	
		13" Reel (Std)	15" Reel (Opt.)
4 x 4.5	14.0	1,500 pcs	2,000 pcs
5 x 4.5	14.0	1,000 pcs	1,000 pcs
6.3 x 4.5	18.0	1,000 pcs	1,000 pcs

## TAPING SPECIFICATIONS (mm)

- Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

### CARRIER



### REEL

