

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

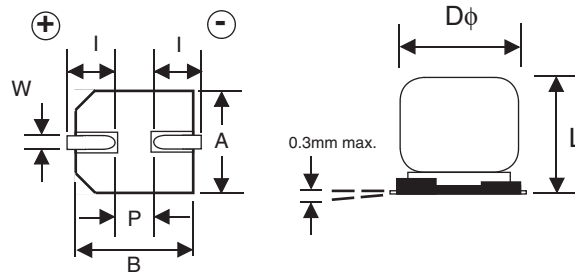
Rated Voltage Rating	4 ~ 50Vdc								
Rated Capacitance Range	0.1 ~ 220μF								
Operating Temperature Range	-40° ~ +85°C								
Capacitance Tolerance	±20%(M)								
Max. Leakage Current After 2 Minutes at 20°C	0.01CV or 3μA, whichever is greater								
Surge Voltage & Max. Tanδ	W.V. (Vdc)	4	6.3	10	16	25	35	50	
	S.V. (Vdc)	5	8.0	13	20	32	44	63	
	Tanδ @ 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 ±25% of initial measured value							
	Tanδ	Less than 200% of specified value							
	Leakage Current	Less than specified value							

STANDARD PRODUCT AND CASE SIZE Dφ xL (mm)

Cap. (μF)	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	Dφ±0.5	L±0.1	A/B±0.2	I ± 0.2	W	P±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

NACP 470 M 16V 6.3x4.5 TR 13 F

- NACP: Series
- 470: Capacitance Code in μF, first 2 digits are significant, Third digit is no. of zeros, "R" indicates decimal for values under 10μF
- M: Tolerance Code M=20%
- 16V: Working Voltage
- 6.3x4.5: Size in mm
- TR: Tape & Reel
- 13: 330mm (13") Reel
- F: RoHS Compliant 97% Sn (min.), 3% Bi (max.)

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



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
NACP47M25V4X4.5TR13F	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
NACP47M35V4X4.5TR13F	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
NACPR10M50V4X4.5TR13F	0.1	50	0.12	1.0	1990	1,000
NACPR22M50V4X4.5TR13F	0.22		0.12	2.0	905	1,000
NACPR33M50V4X4.5TR13F	0.33		0.12	2.8	603	1,000
NACPR47M50V4X4.5TR13F	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

Surface Mount Aluminum Electrolytic Capacitors NACP Series

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

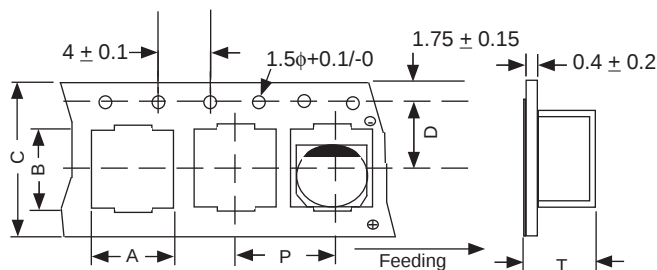
TR15 380mm (15") REEL

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

