

Surface Mount Aluminum Electrolytic Capacitors NACP Series

FEATURES

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

RoHS Compliant

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range	4 ~ 50 Vdc							
Rated Capacitance Range	0.1 ~ 220 μ F							
Operating Temp. Range	-40°C ~ +85°C							
Capacitance Tolerance	\pm 20%(M)							
Max. Leakage Current After 2 Minutes at 20°C	0.01CV or 3 μ A, whichever is greater							
Surge Voltage & Max. Tan δ	W.V. (Vdc)	4	6.3	10	16	25	35	50
	S.V. (Vdc)	5	8.0	13	20	32	44	63
	Tan δ @ 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 value						
	Tan δ	Less than 200% of specified value						
	Leakage Current	Less than the specified value						

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA rms AT 120Hz AND 85°C)

Cap (μ F)	Working Voltage (Vdc)							
	4	6.3	10	16	25	35	50	
0.1								1.0
0.22								2.0
0.33								2.8
0.47								4.0
1.0								8.4
2.2								14
3.3								17
4.7					17	18		21
10				23	27	29		33
22		28	33	37	47	49		
33	28	37	41	51	57			
47	33	45	53	61				
100	56	70	74					
220	96							

MAXIMUM ESR (Ω AT 20°C AND 120Hz)

Cap (μ F)	Working Voltage (Vdc)							
	4	6.3	10	16	25	35	50	
0.1								1990
0.22								905
0.33								603
0.47								423
1.0								199
2.2						106		90.5
3.3					80.5	70.5		60.3
4.7				70.7	56.5	49.4		42.3
10			39.9	33.2	26.5	23.2		19.9
22	30.2	22.6	18.1	15.1	12.1	10.8		
33	20.1	15.1	12.6	10.1	8.1			
47	14.1	10.6	8.5	7.1				
100	6.6	5.0	3.98					
220	3.0							

RIPPLE CURRENT CORRECTION FACTOR

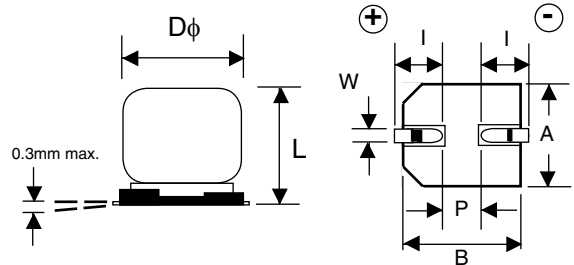
Cap (μ F)	Frequency			
	100~<1KHz	1K~<10KHz	10K~<100KHz	\geq 100KHz
0.47 ~ 4.7	1.0	1.3	1.5	2.0
10 ~ 33	1.0	1.2	1.3	1.45
47 ~ 220	1.0	1.1	1.2	1.3

STANDARD PRODUCTION SIZE Dφ xL (mm)

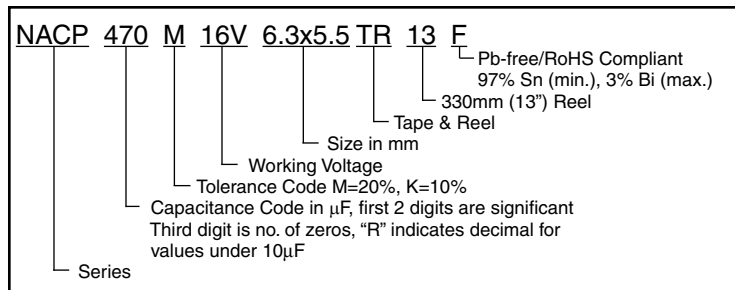
Cap (μF)	Working Voltage (Vdc)						
	4	6.3	10	16	25	35	50
0.1							4x4.5
0.22							4x4.5
0.33							4x4.5
0.47							4x4.5
1.0							4x4.5
2.2							4x4.5
3.3							4x4.5
4.7					4x4.5	4x4.5	5x4.5
10				4x4.5	5x4.5	5x4.5	6.3x4.5
22		4x4.5	5x4.5	5x4.5	6.3x4.5	6.3x4.5	
33	4x4.5	5x4.5	5x4.5	6.3x4.5	6.3x4.5		
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 ± 0.2	I ± 0.2	W	P ± 0.2
4x4.5	4	4.5	4.3	1.8	0.5 ~ 0.8	1.0
5x4.5	5	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



SEE PAGE 38
For Case Size Data
SEE PAGE 39
For Taping/Packaging Data



*Add "F" suffix for optional RoHS compliant parts