

Surface Mount Aluminum Electrolytic Capacitors NAZK Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- SUIT FOR HIGH TEMPERATURE REFLOW SOLDERING (UP TO 260°C)
- LOW IMPEDANCE AND HIGH RIPPLE CURRENT
- 2,000 HOUR LOAD LIFE @ +105°C
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

See **NAZT** for
New Designs

**RoHS
Compliant**

includes all homogeneous materials



CHARACTERISTICS

Rated Voltage Rating	6.3 ~ 35Vdc					
Rated Capacitance Range	4.7 ~ 1,000μF					
Operating Temp. Range	-55 ~ +105°C					
Capacitance Tolerance	±20% (M)					
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV or 3μA whichever is greater					
Tan δ @ 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35
	S.V. (Vdc)	8.0	13	20	32	44
	Tan δ	0.26	0.19	0.16	0.14	0.12
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	6.3	10	16	25	35
	Z-40°C/Z+20°C	3	3	3	3	3
	Z-55°C/Z+20°C	4	4	4	3	3
Load Life Test @ 105°C All Case Sizes = 2,000 hours	Capacitance Change	Within ±30% of initial measured value				
	Tan δ	Less than ±200% of the specified maximum value				
	Leakage Current	Less than the specified maximum value				

*See Part Number System for Details

SAC Alloy Compatible
230°C ~ 260°C

LOW ESR COMPONENT
LIQUID ELECTROLYTE
For Performance Data
see www.LowESR.com

PART NUMBER SYSTEM

NAZK 101 M 16V 6.3x8 N B P F

NAZK: Series
 101: Capacitance Code in μF, first 2 digits are significant
 M: Tolerance Code M=20%
 16V: Working Voltage
 6.3x8: Size in mm
 N: Reflow Temperature Code
 B: Termination/Packaging Code
 P: Optional plastic reel (standard material is cardboard). See page 3 & 4
 F: RoHS Compliant

DIMENSIONS (mm) AND REEL QUANTITIES

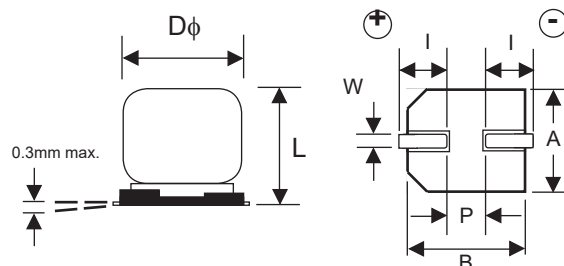
Case Size	φD±0.5	L max.	A±0.2	B±0.2	I±0.3	W	P±0.3
4x6.1	4	6.1	4.3	4.3	1.8	0.5~0.8	1.0
5x6.1	5	6.1	5.3	5.3	2.2	0.5~0.8	1.3
6.3x6.1	6.3	6.1	6.6	6.6	2.7	0.5~0.8	1.8
6.3x8	6.3	8.0	6.6	6.6	2.5	0.5~0.8	2.2
8x10.5	8.0	10.5	8.3	8.3	2.9	0.7~1.1	3.2
10x10.5	10.0	10.5	10.3	10.3	3.2	0.7~1.4	4.6

PEAK REFLOW TEMPERATURE CODES

Code	Peak Reflow Temperature
N	260°C
L	250°C

TERMINATION FINISH & PACKAGING OPTIONS CODES

Code	Finish & Reel Size
B	Sn-Bi Finish & 13" Reel
LB	Sn-Bi Finish & 15" Reel
S	100% Sn Finish & 13" Reel
LS	100% Sn Finish & 15" Reel



PRECAUTIONS

Please review the notes on correct use, safety and precautions found at
<https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
 If in doubt or uncertainty, please review your specific application - process details with
 NIC's technical support personnel: tpmg@niccomp.com



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STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μ F)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Impedance (Ω) +20°C/100KHz	Max. Ripple Current (mA) +105°C/100KHz	Load Life Hours @ +105°C
NAZK220M6.3V4X6.1NBF	22	6.3	0.26	1.35	90	2,000
NAZK470M6.3V4X6.1NBF	47		0.26	1.35	90	2,000
NAZK470M6.3V5X6.1NBF	47		0.26	0.70	170	2,000
NAZK101M6.3V5X6.1NBF	100		0.26	0.70	170	2,000
NAZK101M6.3V6.3X6.1NBF	100		0.26	0.36	250	2,000
NAZK221M6.3V6.3X6.1NBF	220		0.26	0.36	250	2,000
NAZK221M6.3V6.3X8NBF	220		0.26	0.34	300	2,000
NAZK331M6.3V6.3X8NBF	330		0.26	0.34	300	2,000
NAZK102M6.3V8X10.5LBF	1000		0.26	0.16	600	2,000
NAZK330M10V4X6.1NBF	33	10	0.19	1.35	90	2,000
NAZK221M10V6.3X8NBF	220		0.19	0.34	300	2,000
NAZK471M10V8X10.5LBF	470		0.19	0.16	600	2,000
NAZK681M10V8X10.5LBF	680		0.19	0.16	600	2,000
NAZK102M10V10X10.5LBF	1000		0.19	0.08	850	2,000
NAZK100M16V4X6.1NBF	10	16	0.16	1.35	90	2,000
NAZK220M16V4X6.1NBF	22		0.16	1.35	90	2,000
NAZK220M16V5X6.1NBF	22		0.16	0.70	170	2,000
NAZK330M16V5X6.1NBF	33		0.16	0.70	170	2,000
NAZK470M16V5X6.1NBF	47		0.16	0.70	170	2,000
NAZK470M16V6.3X6.1NBF	47		0.16	0.36	250	2,000
NAZK101M16V6.3X6.1NBF	100		0.16	0.36	250	2,000
NAZK101M16V6.3X8NBF	100		0.16	0.34	300	2,000
NAZK221M16V6.3X8NBF	220		0.16	0.34	300	2,000
NAZK331M16V8X10.5LBF	330		0.16	0.16	600	2,000
NAZK471M16V8X10.5LBF	470		0.16	0.16	600	2,000
NAZK681M16V10X10.5LBF	680		0.16	0.08	850	2,000
NAZK330M25V5X6.1NBF	33	25	0.14	0.70	170	2,000
NAZK330M25V6.3X6.1NBF	33		0.14	0.36	250	2,000
NAZK470M25V6.3X6.1NBF	47		0.14	0.36	250	2,000
NAZK101M25V6.3X8NBF	100		0.14	0.34	300	2,000
NAZK221M25V8X10.5LBF	220		0.14	0.16	600	2,000
NAZK331M25V8X10.5LBF	330		0.14	0.16	600	2,000
NAZK471M25V10X10.5LBF	470		0.14	0.09	850	2,000
NAZK4R7M35V4X6.1NBF	4.7	35	0.12	1.45	90	2,000
NAZK100M35V4X6.1NBF	10		0.12	1.45	90	2,000
NAZK100M35V5X6.1NBF	10		0.12	0.70	170	2,000
NAZK220M35V5X6.1NBF	22		0.12	0.70	170	2,000
NAZK220M35V6.3X6.1NBF	22		0.12	0.36	250	2,000
NAZK330M35V6.3X6.1NBF	33		0.12	0.36	250	2,000
NAZK470M35V6.3X6.1NBF	47		0.12	0.36	250	2,000
NAZK470M35V6.3X8NBF	47		0.12	0.34	300	2,000
NAZK101M35V6.3X8NBF	100		0.12	0.34	300	2,000
NAZK101M35V8X10.5LBF	100		0.12	0.16	600	2,000
NAZK221M35V8X10.5LBF	220		0.12	0.16	600	2,000
NAZK331M35V10X10.5LBF	330		0.12	0.09	850	2,000

RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Frequency	120Hz	1KHz	10KHz	100KHz
4.7 μ F	0.42	0.60	0.80	1.00
10 ~ 33 μ F	0.45	0.75	0.90	1.00
47 ~ 100 μ F	0.50	0.80	0.95	1.00
220 ~ 1000 μ F	0.60	0.85	0.95	1.00

Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
www.niccomp.com/RSL

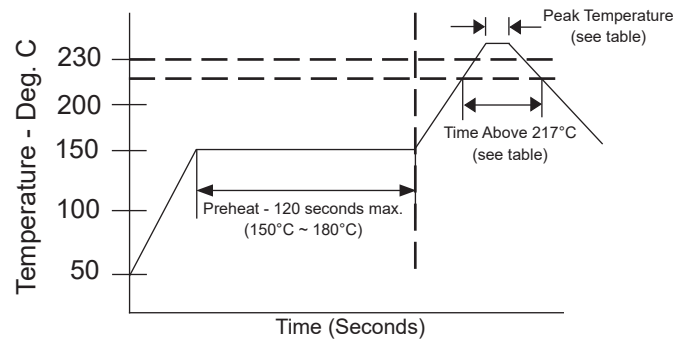


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PEAK REFLOW TEMPERATURE AND DURATION

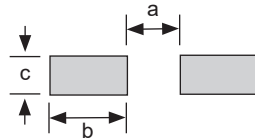
Diameter	Time above 217°C	Peak Temperature 5 seconds
6.3mm ϕ	60 sec. max.	260°C
8 ~ 10mm ϕ	60 sec. max.	250°C

Capacitors can withstand two times reflow at the above conditions. Second reflow shall be at least one hour after natural cool to room temperature.



RECOMMENDED LAND PATTERN DIMENSIONS (mm)

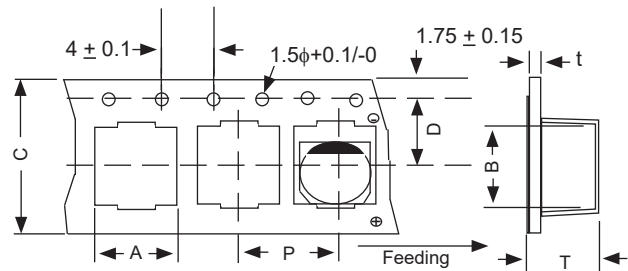
Case Size	a	b	c
4x6.1	1.0	2.6	1.6
5x6.1	1.4	3.0	1.6
6.3x6.1	2.1	3.5	1.6
6.3x8	2.1	3.5	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5



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.

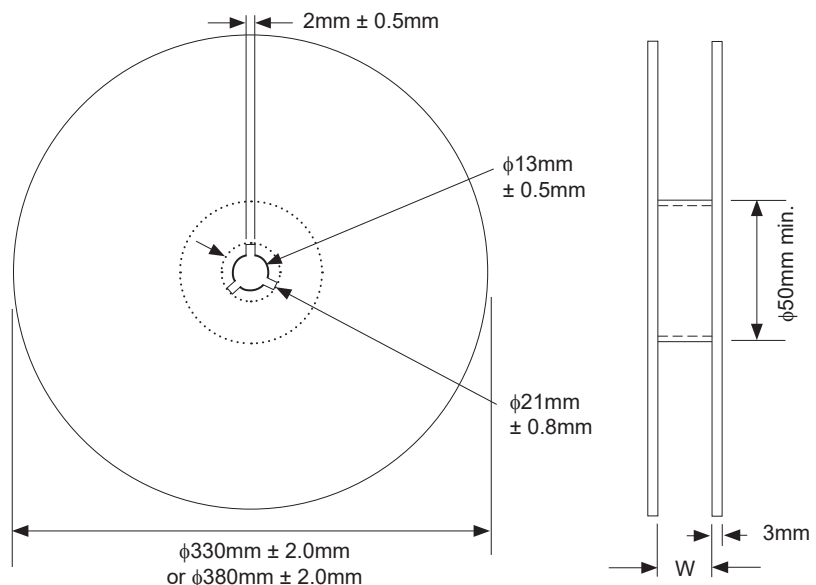
Case Size	A	B	C	D	P	T	t
	± 0.5	± 0.5	± 0.3	± 0.1	± 0.1	± 0.2	± 0.1
4x6.1	4.7	4.7	12.0	5.5	8.0	6.4	0.4
5x6.1	5.7	5.7	12.0	5.5	12.0	6.4	0.4
6.3x6.1	7.0	7.0	16.0	7.5	12.0	6.4	0.4
6.3x8	7.0	7.0	16.0	7.5	12.0	8.2	0.4
8x10.5	8.7	8.7	24.0	11.5	16.0	11.0	0.4
10x10.5	10.7	10.7	24.0	11.5	16.0	11.0	0.4



B suffix 330mm (13") CARDBOARD REEL LB suffix 380mm (15") CARDBOARD REEL

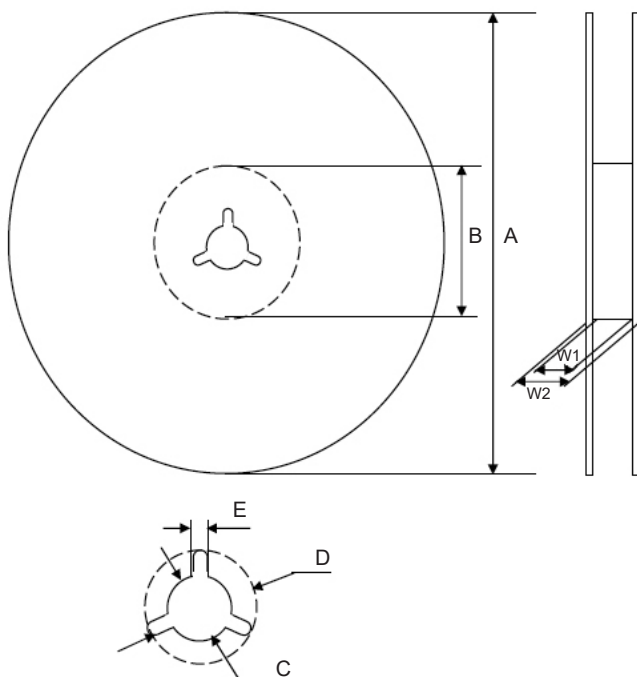
(See page 6 for plastic reel dimensions)

Case Size	W ± 1.0	Qty per Reel	
		13" (330mm)	15" (380mm)
4x6.1	14	1,200	2,000
5x6.1	14	800	1,000
6.3x6.1	18	800	1,000
6.3x8	18	500	900
8x10.5	26	300	500
10x10.5	26	300	500



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Optional V-Chip 13" (330mm) Plastic Reels (BP suffix)



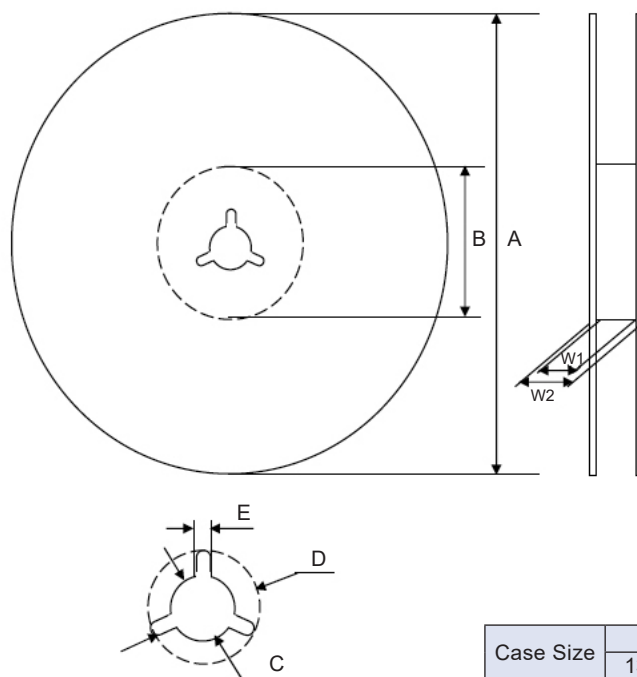
Dimensions (mm)

Case Size	Tape Width	W1	W2
4x6.1, 5x6.1	12.0	12.4 ~ 14.4	15.5 ~ 20.0
6.3x6.1, 6.3x8	16.0	16.4 ~ 18.4	19.5 ~ 24.0
8x10.5, 10x10.5	24.0	24.4 ~ 26.4	27.5 ~ 32.0

Case Size	Tape Width	A	B	C	D	E
4x6.1, 5x6.1	12.0	$\phi 330$ ± 2.0	$\phi 50 \sim 105$	$\phi 13$ ± 0.5	$\phi 21$ ± 1.0	2.0 ± 0.5
6.3x6.1, 6.3x8	16.0					
8x10.5, 10x10.5	24.0					

Color
Black or Blue

Optional V-Chip 15" (380mm) Plastic Reels (LBP suffix)



Dimensions (mm)

Case Size	Tape Width	W1	W2
4x6.1, 5x6.1	12.0	12.5 ~ 14.0	15.5 ~ 20.0
6.3x6.1, 6.3x8	16.0	16.5 ~ 18.0	19.5 ~ 24.0
8x10.5, 10x10.5	24.0	24.5 ~ 26.0	27.5 ~ 32.0

Case Size	Tape Width	A	B	C	D	E
4x6.1, 5x6.1	12.0	$\phi 380$ ± 2	$\phi 80 \sim 105$	$\phi 13$ ± 0.5	$\phi 21$ ± 1.0	2.0 ± 0.5
6.3x6.1, 6.3x8	16.0					
8x10.5, 10x10.5	24.0					

Color
Black or Blue

Case Size	Qty per Reel	
	13" (330mm)	15" (380mm)
4x6.1	1,200	2,000
5x6.1	800	1,000
6.3x6.1	800	1,000
6.3x8	500	900
8x10.5	300	500
10x10.5	300	500

