

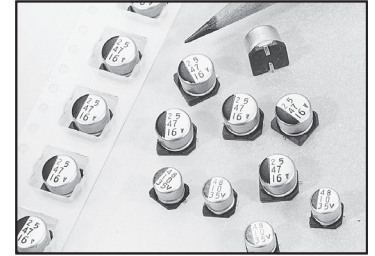
# Surface Mount Aluminum Electrolytic Capacitors NAZV Series

## FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION
- LONG LIFE (7,000 ~ 10,000 HOURS)
- WIDE TEMPERATURE RANGE (-25°C ~ +105°C)
- DESIGNED FOR REFLOW SOLDERING

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details

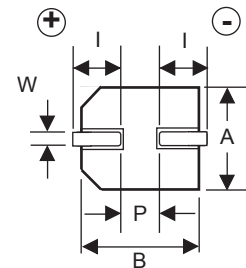
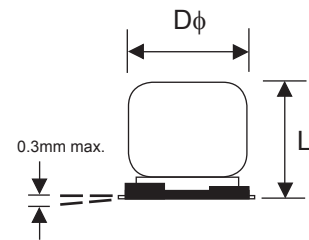


## CHARACTERISTICS

Rated Voltage Range		6.3 ~ 50V					
Rated Capacitance Range		10 ~ 1000 $\mu$ F					
Operating Temperature Range		-25°C ~ +105°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 and Max. Tan $\delta$	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V.(Vdc)	8	13	20	32	44	63
	Tan $\delta$	0.32	0.28	0.26	0.16	0.14	0.14
Low Temperature Stability (Impedance Ratio @ 120Hz)	Z-25°C/Z+20°C	4	3	2	2	2	2
	Load Life Hours	$\phi D \leq 6.3\text{mm} = 7,000$ $\phi D \geq 8 = 10,000$ hours					
High Temperature Load Life at 105°C and Rated Working Voltage	Capacitance Change	Within $\pm$ 30% of initial measured value					
	Tan $\delta$	Less than 300% of specified value					
	Leakage Current	Less than the specified value					

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

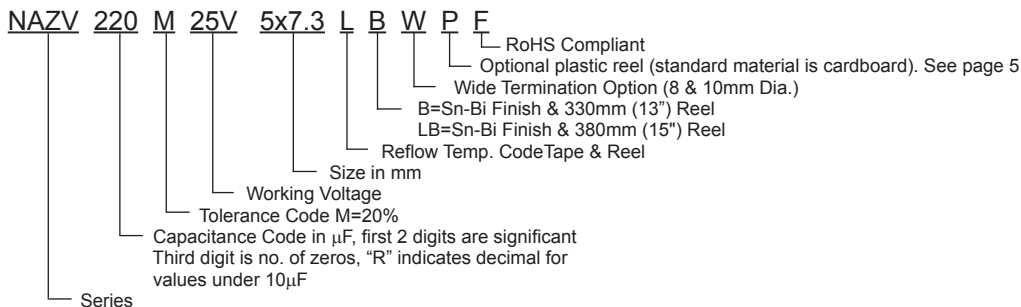
Cap. ( $\mu$ F)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
10	100	-	-	-	-	5X7.3	-
22	220	-	-	5X7.3	5X7.3	5X7.3	6.3X8.7
33	330	-	5X7.3	-	6.3X7.3	6.3X8.7	8X10.5
47	470	5X7.3	-	6.3X7.3	6.3X7.3	6.3X8.7	8X10.5
100	101	6.3X7.3	-	6.3X7.3	6.3X8.7	8X10.5	10X10.5
150	151	-	6.3X7.3	6.3X8.7	8X10.5	-	-
220	221	6.3X8.7	-	6.3X8.7	8X10.5	10X10.5	-
330	331	6.3X8.7	-	8X10.5	10X10.5	-	-
470	471	8X10.5	-	10X10.5	-	-	-
1000	102	10X10.5	-	-	-	-	-



## DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A/B $\pm$ 0.2	l $\pm$ 0.2	W	P $\pm$ 0.2
5x7.3	5	7.3	5.3	2.2	0.5 ~ 0.8	1.4
6.3x7.3	6.3	7.3	6.6	2.5	0.5 ~ 0.8	2.2
6.3x8.7	6.3	8.7	6.6	2.5	0.5 ~ 0.8	2.2
8x10.5	8	10.5	8.3	2.9	0.7 ~ 1.1	3.2
10x10.5	10	10.5	10.3	3.2	0.7 ~ 1.4	4.6

## PART NUMBER SYSTEM



## PRECAUTIONS

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



# Surface Mount Aluminum Electrolytic Capacitors NAZV Series

## STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple Current (mA) +105°C/100KHz	Max. Z (Ω) +20°C/100KHz	Load Life Hours @ +105°C
NAZV470M6.3V5X7.3LBF	47	6.3	0.32	95	2.2	7,000
NAZV101M6.3V6.3X7.3LBF	100		0.32	140	1.1	7,000
NAZV221M6.3V6.3X8.7LBF	220		0.32	230	1.0	7,000
NAZV331M6.3V6.3X8.7LBF	330		0.32	230	1.0	7,000
NAZV471M6.3V8X10.5LBF	470		0.32	600	0.22	10,000
NAZV102M6.3V10X10.5LBF	1000		0.32	850	0.16	10,000
NAZV330M10V5X7.3LBF	33	10	0.28	95	2.2	7,000
NAZV151M10V6.3X7.3LBF	150		0.28	140	1.1	7,000
NAZV220M16V5X7.3LBF	22	16	0.26	95	2.2	7,000
NAZV470M16V6.3X7.3LBF	47		0.26	140	1.1	7,000
NAZV101M16V6.3X7.3LBF	100		0.26	140	1.1	7,000
NAZV151M16V6.3X8.7LBF	150		0.26	230	1.0	7,000
NAZV221M16V6.3X8.7LBF	220		0.26	230	1.0	7,000
NAZV331M16V8X10.5LBF	330		0.26	600	0.22	10,000
NAZV471M16V10X10.5LBF	470		0.26	850	0.16	10,000
NAZV220M25V5X7.3LBF	22		25	0.16	95	2.2
NAZV330M25V6.3X7.3LBF	33	0.16		140	1.1	7,000
NAZV470M25V6.3X7.3LBF	47	0.16		140	1.1	7,000
NAZV101M25V6.3X8.7LBF	100	0.16		230	1.0	7,000
NAZV151M25V8X10.5LBF	150	0.16		600	0.22	10,000
NAZV221M25V8X10.5LBF	220	0.16		600	0.22	10,000
NAZV331M25V10X10.5LBF	330	0.16		850	0.16	10,000
NAZV100M35V5X7.3LBF	10	35	0.14	95	2.2	7,000
NAZV220M35V5X7.3LBF	22		0.14	95	2.2	7,000
NAZV330M35V6.3X8.7LBF	33		0.14	230	1.0	7,000
NAZV470M35V6.3X8.7LBF	47		0.14	230	1.0	7,000
NAZV101M35V8X10.5LBF	100		0.14	600	0.22	10,000
NAZV221M35V10X10.5LBF	220		0.14	850	0.16	10,000
NAZV220M50V6.3X8.7LBF	22	50	0.14	100	1.80	7,000
NAZV330M50V8X10.5LBF	33		0.14	350	0.53	10,000
NAZV470M50V8X10.5LBF	47		0.14	350	0.53	10,000
NAZV101M50V10X10.5LBF	100		0.14	850	0.35	10,000

## RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Cap. (μF)	Frequency			
	120Hz	1KHz	10KHz	100KHz
10 ~ 22	0.50	0.80	0.90	1.00
33 ~ 150	0.65	0.85	0.92	1.00
220 ~ 1000	0.70	0.85	0.95	1.00

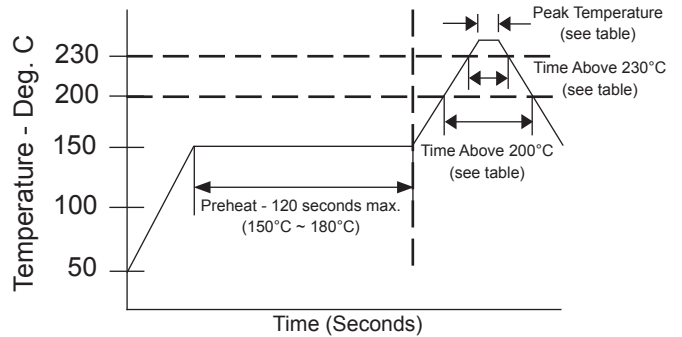
Review & Compare Reflow Soldering Heat Limits  
V-chip SMT Aluminum Electrolytic Capacitors  
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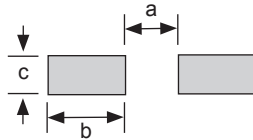
## PEAK REFLOW TEMPERATURE AND DURATION

Diameter	Time above 200°C	Time above 230°C	Peak Temperature 5 seconds
5 ~ 6.3mm $\phi$	70 sec. max.	40 sec. max.	250°C
8 ~ 10mm $\phi$	60 sec. max.	20 sec. max.	250°C



## RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
5x7.3	1.4	3.0	1.8
6.3x7.3 6.3x8.7	1.8	3.6	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5



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

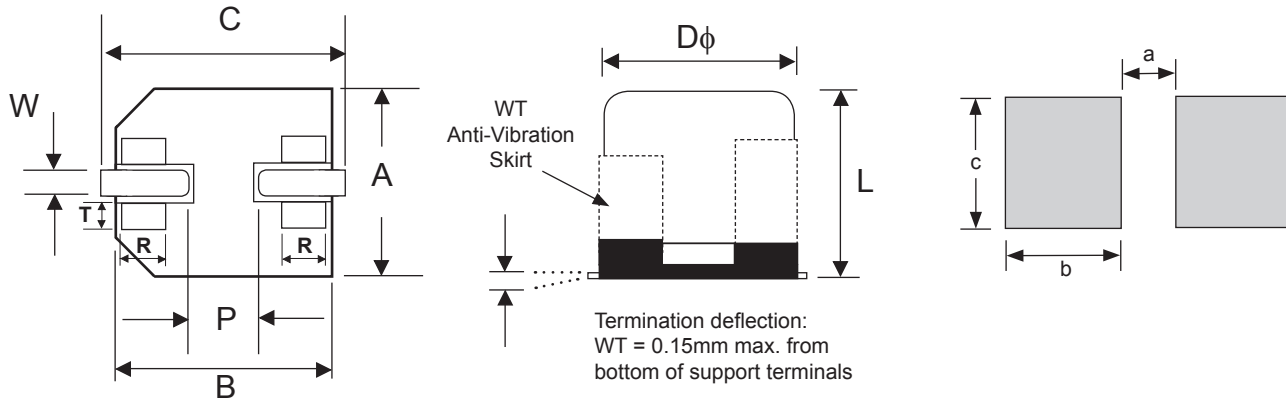
## W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A, B $\pm$ 0.2	C $\pm$ 0.2	P	W	R	T
8x10.5	8.0	11.0	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.5	10.0	11.0	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)

(Reference dimensions)

## W (WIDE TERMINATIONS) LAND PATTERN DIM. (mm)

Case Size	a	b	c
8x10.5	2.5	4.5	4.7
10x10.5	3.8	4.8	4.7



W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log
$\Delta$ Capacitance	Within $\pm$ 10% of initial value
Tangent of Loss	$\leq$ Specified value
Leakage Current	$\leq$ Specified value

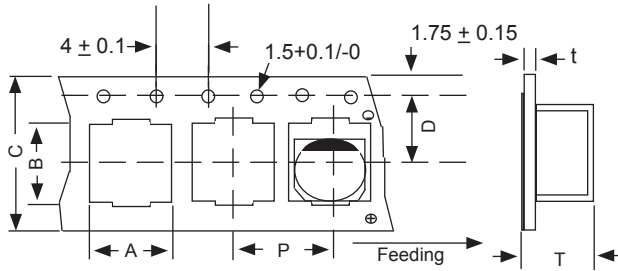


## EMBOSED CARRIER DIMENSIONS (mm)

Case Size	A ± 0.3	B ± 0.3	C ± 0.3	D ± 0.1	P ± 0.1	T ± 0.2	t ± 0.1
5x7.3	5.7	5.7	12.0	5.5	12.0	7.1	0.4
6.3x7.3	7.0	7.0	16.0	7.5	12.0	7.5	0.4
6.3x8.7	7.0	7.0	16.0	7.5	12.0	9.2	0.4
8x10.5	8.7	8.7	24.0	11.5	16.0	11.1	0.4
10x10.5	10.7	10.7	24.0	11.5	16.0	11.2	0.4

## 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.

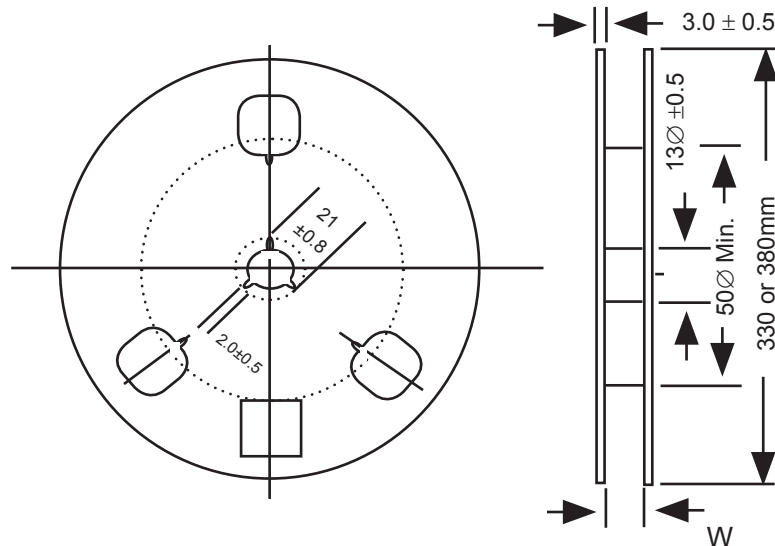


## TR13 330mm (13") CARDBOARD REEL

## TR15 380mm (15") CARDBOARD REEL

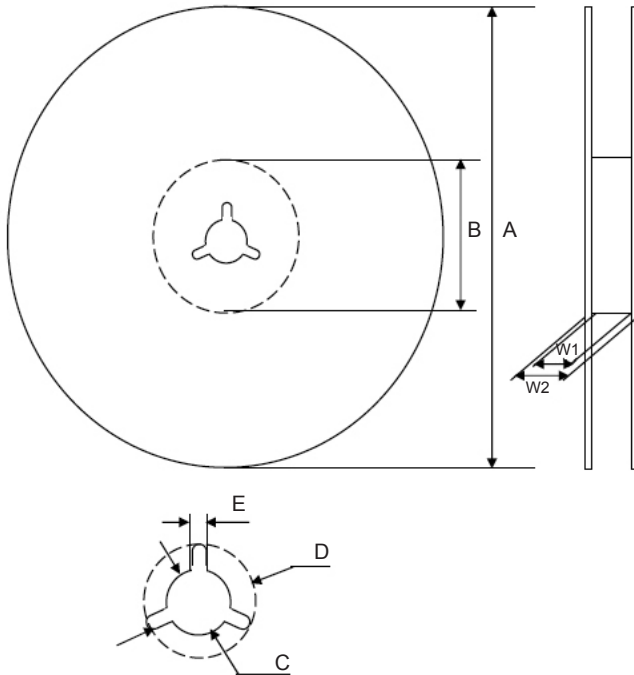
(See page 5 for plastic reel dimensions)

Case Size	W ± 1.0	Reel Quantity 330mm	Reel Quantity 380mm
5x7.3	14	800	1,000
6.3x7.3	18	800	1,000
6.3x8.7	18	500	800
8x10.5	26	300	500
10x10.5	26	300	500



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## Optional V-Chip 13" (330mm) Plastic Reels (TR13PF suffix)



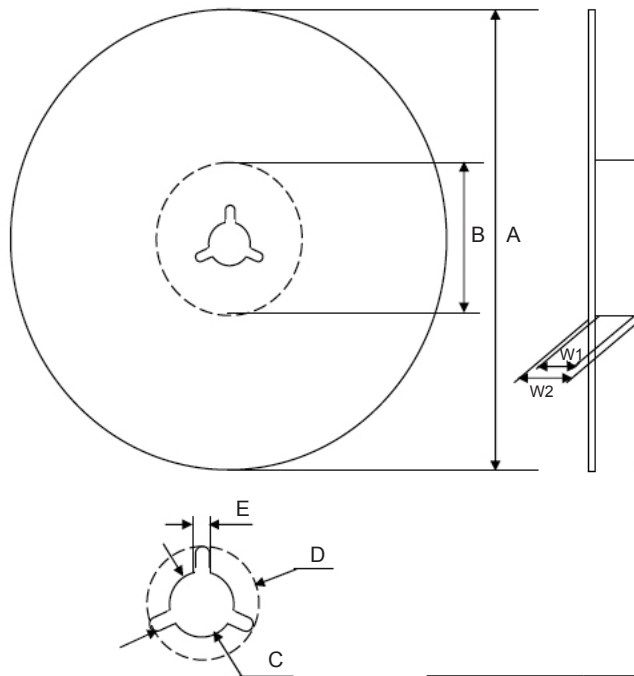
### Dimensions (mm)

Case Size	Tape Width	W1	W2
5x7.3	12.0	12.4 ~ 14.4	15.5 ~ 20.0
6.3x7.3, 6.3x8.7	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
5x7.3	12.0	$\phi 330$ $\pm 2.0$	$\phi 50 \sim 105$	$\phi 13$ $\pm 0.5$	$\phi 21$ $\pm 1.0$	2.0 $\pm 0.5$
6.3x7.3, 6.3x8.7	16.0					
8x10.5, 10x10.5	24.0					

Color
Black or Blue

## Optional V-Chip 15" (380mm) Plastic Reels (TR15PF suffix)



### Dimensions (mm)

Case Size	Tape Width	W1	W2
5x7.3	12.0	12.5 ~ 14.0	15.5 ~ 20.0
6.3x7.3, 6.3x8.7	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
5x7.3	12.0	$\phi 380$ $\pm 2$	$\phi 80 \sim 105$	$\phi 13$ $\pm 0.5$	$\phi 21$ $\pm 1.0$	2.0 $\pm 0.5$
6.3x7.3, 6.3x8.7	16.0					
8x10.5, 10x10.5	24.0					

Color
Black or Blue

Case Size	Reel Quantity 330mm	Reel Quantity 380mm
5x7.3	800	1,000
6.3x7.3	800	1,000
6.3x8.7	500	800
8x10.5	300	500
10x10.5	300	500



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