

NAYT Series

Surface Mount Aluminum Electrolytic Capacitors

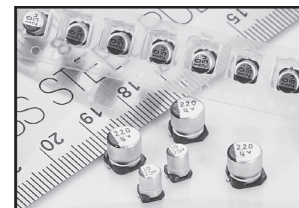


FEATURES

- **HIGH TEMPERATURE +135°C**
- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING
- **MEETS THE REQUIREMENTS OF AEC-Q200***

*Contact NIC for supporting test data

Available with Wide
Anti-Vibration
Terminations

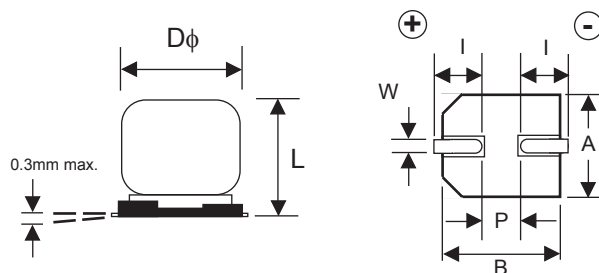


CHARACTERISTICS

Rated Voltage Range	16 ~ 50VDC				
Rated Capacitance Range	22 ~ 1000 μ F				
Operating Temp. Range	-40 ~ +135°C				
Capacitance Tolerance	$\pm 20\%$ (M)				
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV				
Working Voltage & Surge Voltage Ratings	W.V. (Vdc)	16	25	35	50
	S.V. (Vdc)	20	32	44	63
Tan δ @ 120Hz/20°C	Tan δ @ 120Hz/20°C	0.23	0.18	0.16	0.16
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	16	25	35	50
	Z -25°C/Z +20°C	2	2	2	2
	Z -40°C/Z +20°C	4	3	3	3
Load Life Test at W.V. @ 135°C 6.3mm Dia.: 1,000 hours 8 ~ 12.5mm Dia.: 2,000 Hours	Capacitance Change	Within $\pm 30\%$ of initial measured value			
	Tan δ	Less than 300% of specified max. value			
	Leakage Current	Less than specified max. value			

STANDARD PRODUCT AND CASE SIZE D ϕ xL (mm)

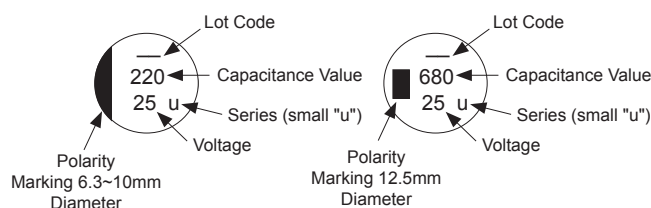
Cap.(μ F)	Code	Working Voltage (Vdc)			
		16	25	35	50
22	220	-	-	-	6.3x8
33	330	-	-	6.3x8	-
47	470	-	-	6.3x8	8x10.8
100	101	6.3x8	6.3x8	8x10.8	10x10.8
220	221	-	8x10.8	10x10.8	12.5x14
330	331	8x10.8	10x10.8	12.5x14	-
470	471	10x10.8	-	12.5x14	-
680	681	-	12.5x14	-	-
1000	102	12.5x14	-	-	-



DIMENSIONS (mm)

Case Size	D ϕ ± 0.5	L max.	A, B ± 0.2	I ± 0.3	(P)	W
6.3x8	6.3	8.0	6.6	2.5	2.2	0.5 ~ 0.8
8x10.8	8.0	10.8	8.3	2.9	3.2	0.7 ~ 1.0
10x10.8	10.0	10.8	10.3	3.2	4.6	1.0 ~ 1.4
12.5x14	12.5	14.0	12.8	4.5	4.6	1.0 ~ 1.4

Part Marking



PART NUMBER SYSTEM

NAYT 221 M 25V 8x10.8 N LB W Y F

RoHS Compliant

W = Wide Termination (≥ 8 mm diameter)

Termination/Packaging Code: LB = Sn-Bi, 15" Reel

Reflow Temperature Code

Size in mm

Working Voltage

Tolerance Code M=20%

Capacitance Code in μ F, first 2 digits are significant

Third digit is no. of zeros, "R" indicates decimal for values under 10 μ F

Series

Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site

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STANDARD VALUES, CASE SIZES & SPECIFICATIONS

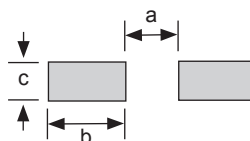
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @120Hz/20°C	Max. ESR (Ω) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/135°C	Load Life Hours @ +135°C
NAYT101M16V6.3X8NLBYF	100	16V	0.23	0.80	150	1000
NAYT331M16V8X10.8NLBYF	330		0.23	0.30	240	2000
NAYT471M16V10X10.8LLBYF	470		0.23	0.20	400	2000
NAYT102M16V12.5X14KLBYF	1000		0.23	0.10	750	2000
NAYT101M25V6.3X8NLBYF	100	25V	0.18	0.80	150	1000
NAYT221M25V8X10.8NLBYF	220		0.18	0.30	240	2000
NAYT331M25V10X10.8LLBYF	330		0.18	0.20	400	2000
NAYT681M25V12.5X14KLBYF	680		0.18	0.10	750	2000
NAYT330M35V6.3X8NLBYF	33	35V	0.16	0.80	150	1000
NAYT470M35V6.3X8NLBYF	47		0.16	0.80	150	1000
NAYT101M35V8X10.8NLBYF	100		0.16	0.30	240	2000
NAYT221M35V10X10.8LLBYF	220		0.16	0.20	400	2000
NAYT331M35V12.5X14KLBYF	330		0.16	0.10	750	2000
NAYT471M35V12.5X14KLBYF	470		0.16	0.10	750	2000
NAYT220M50V6.3X8NLBYF	22	50V	0.16	1.20	110	1000
NAYT470M50V8X10.8NLBYF	47		0.16	0.60	160	2000
NAYT101M50V10X10.8LLBYF	100		0.16	0.35	260	2000
NAYT221M50V12.5X14KLBYF	220		0.16	0.15	600	2000

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	100 ≤ f < 1K	1K ≤ f < 10K	10K ≤ f < 100K	100K ≤ f
22μF ~ 1,000μF	0.6	0.85	0.93	1.00

LAND PATTERN DIMENSIONS (mm)

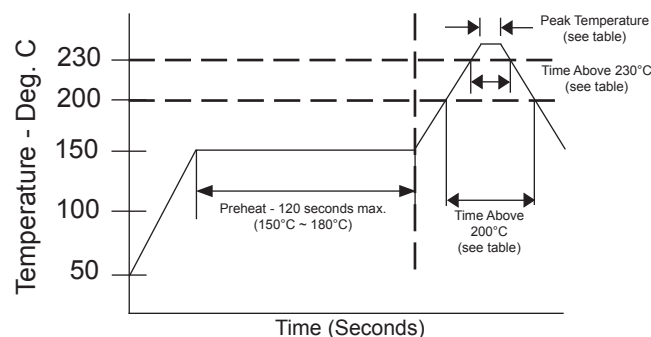
Case Size	a	b	c
6.3x8	1.8	3.6	1.8
8x10.8	2.8	4.1	2.1
10x10.8	4.3	4.4	2.5
12.5x14	4.3	5.8	2.5



PEAK REFLOW TEMPERATURES AND DURATION

Diameter	Time above 200°C	Time above 230°C	Peak Temperature 5 seconds
φ6.3mm & φ8mm	Within 80 sec.	Within 40 sec.	+260°C
φ10mm	Within 70 sec.	Within 40 sec.	+250°C
φ12.5mm	Within 60 sec.	Within 30 sec.	+245°C

Capacitors can withstand two reflow passes under the specified conditions. Capacitors must be allowed to cool to room temperature before the second reflow pass.



PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/wp-content/uploads/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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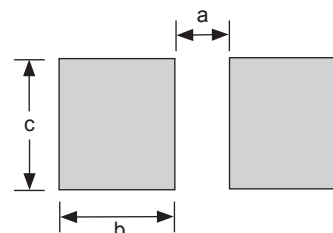
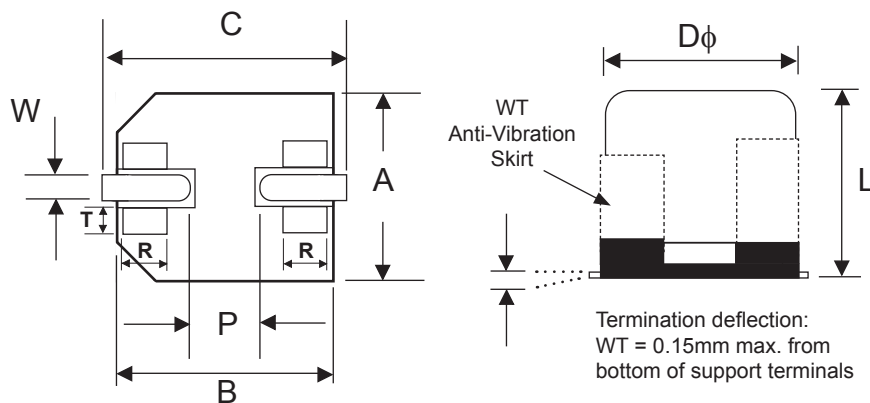
W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	D ϕ ± 0.5	L max.	A, B ± 0.2	C ± 0.2	P	W	R	T
8x10.8	8.0	11.2	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.8	10.0	11.2	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)
12.5x14	12.5	14.5	13.5	14.2	(4.6)	1.0 ~ 1.4	(2.2)	(2.4)

W (WIDE TERMINATIONS)

LAND PATTERN DIM. (mm)

Case Size	a	b	c
8x10.8	2.5	4.5	4.7
10x10.8	3.8	4.8	4.7
12.5x14	3.8	6.1	6.9



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

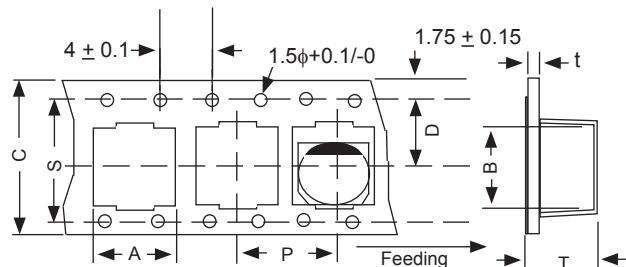
CARRIER TAPE

Case Size	A ± 0.2	B ± 0.2	C ± 0.3	D ± 0.1	P ± 0.1	T ± 0.2	t max.	S ± 0.1
6.3x8	7.0	7.0	16.0	7.5	12.0	8.2	0.6	-
8x10.8	8.7	8.7	24.0	11.5	16.0	11.1	0.6	-
10x10.8	10.7	10.7	24.0	11.5	16.0	11.2	0.6	-
12.5x14	13.2	13.2	32.0	14.2	24.0	14.3	0.6	28.4

TAPING SPECIFICATIONS (mm)

- Both Leader and Trailer tape: Minimum 10 empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

CARRIER

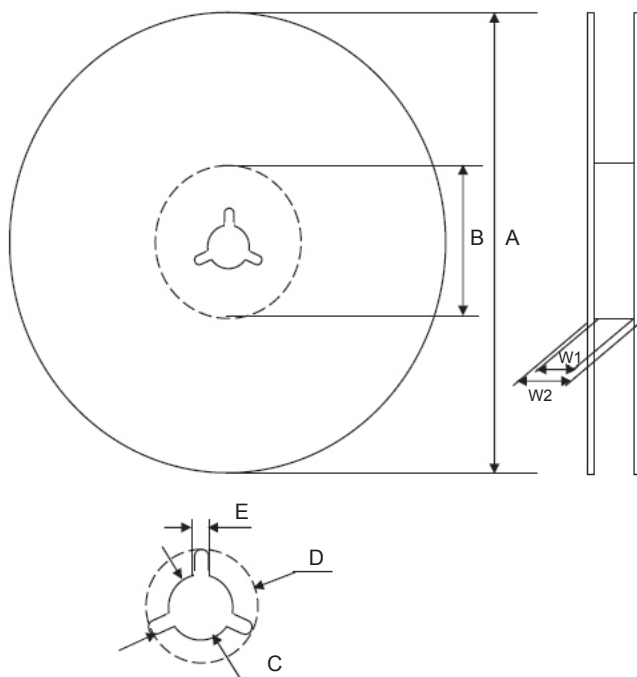


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V-Chip 15" (380mm) Reels (LB suffix)



Dimensions (mm)

Case Size	Tape Width	W1	W2
6.3x8	16.0	16.5 ~ 18.0	19.5 ~ 24.0
8x10.8, 10x10.8	24.0	24.5 ~ 26.0	27.5 ~ 32.0
12.5x14	32.0	33.0 ~ 34.0	36.5 ~ 38.5

Case Size	Tape Width	A	B	C	D	E
6.3x8	16.0	$\phi 380 \pm 2$	$\phi 80 \sim 105$	$\phi 13 \pm 0.5$	$\phi 21 \pm 1.0$	2.0 ± 0.5
8x10.8, 10x10.8	24.0					
12.5x14	32.0					

Color
Black or Blue

Case Size	Qty per Reel 15" (380mm)
6.3x8	900
8x10.8	500
10x10.8	500
12.5x14	250