

# NATU Series

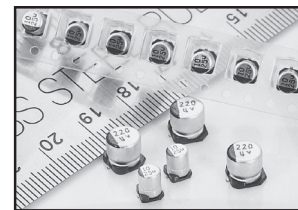
## Surface Mount Aluminum Electrolytic Capacitors



### FEATURES

- EXTENDED TEMPERATURE +125°C & LONG LIFE (4,000 HOURS)
- 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

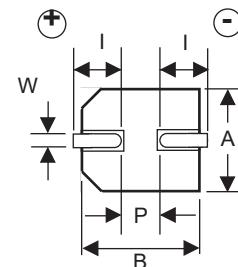
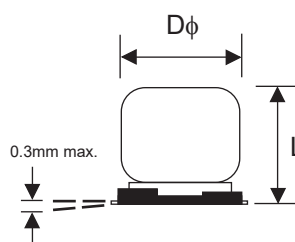


### CHARACTERISTICS

Rated Voltage Range	25 ~ 35VDC		
Rated Capacitance Range	100 ~ 330 $\mu$ F		
Operating Temp. Range	-40 ~ +125°C		
Capacitance Tolerance	$\pm$ 20% (M)		
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV		
Tan $\delta$ @ 120Hz/20°C	W.V. (Vdc)	25	35
	S.V. (Vdc)	32	44
	Tan $\delta$ @ 120Hz/20°C	0.16	0.14
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	25	35
	Z -25°C/Z +20°C	2	2
	Z -40°C/Z +20°C	3	3
Load Life Test at W.V. @ 125°C All Case Sizes: 4,000 Hours	Capacitance Change	Within $\pm$ 30% of initial measured value	
	Tan $\delta$	Less than 300% of specified max. value	
	Leakage Current	Less than specified max. value	

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

Cap. ( $\mu$ F)	Code	Working Voltage (Vdc)	
		25	35
100	101	-	8X10.8
150	151	8X10.8	-
220	221	-	10X10.8
330	331	10X10.8	-



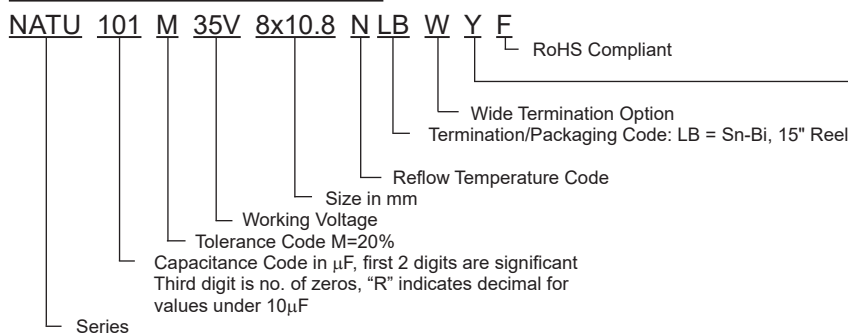
### DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A, B $\pm$ 0.2	I $\pm$ 0.3	(P)	W
8 x 10.8	8.0	10.8	8.3	2.9	3.2	0.7 ~ 1.1
10 x 10.8	10.0	10.8	10.3	3.2	4.6	0.7 ~ 1.4

Reflow Code
L = +250°C
N = +260°C

Termination / Packaging Code
LB = Sn-Bi / 15" reel

### PART NUMBER SYSTEM



### 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](mailto:tpmg@niccomp.com)

### STANDARD VALUES, CASE SIZES & SPECIFICATIONS

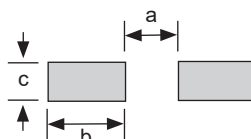
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @120Hz/20°C	Max. ESR (Ω) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/125°C	Load Life Hours @ +125°C
NATU151M25V8X10.8NLBYF	150	25	0.16	0.30	300	4,000
NATU331M25V10X10.8LLBYF	330		0.16	0.20	500	4,000
NATU101M35V8X10.8NLBYF	100	35	0.14	0.30	300	4,000
NATU221M35V10X10.8LLBYF	220		0.14	0.20	500	4,000

### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	100 ≤ f < 1K	1K ≤ f < 10K	10K ≤ f < 100K	100K ≤ f
100μF ~ 330μF	0.6	0.85	0.93	1.00

### LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
8x10.8	2.8	4.1	2.1
10x10.8	4.3	4.4	2.5



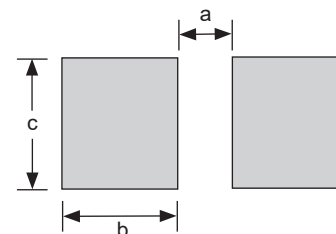
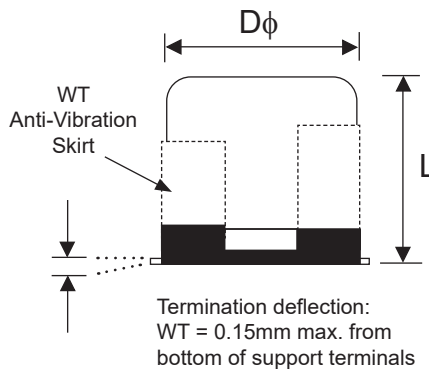
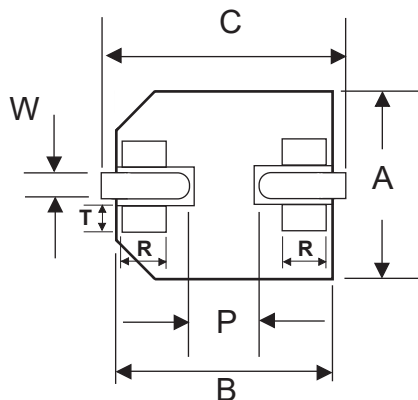
### W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	Dφ ±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)

(Reference dimensions)

### 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

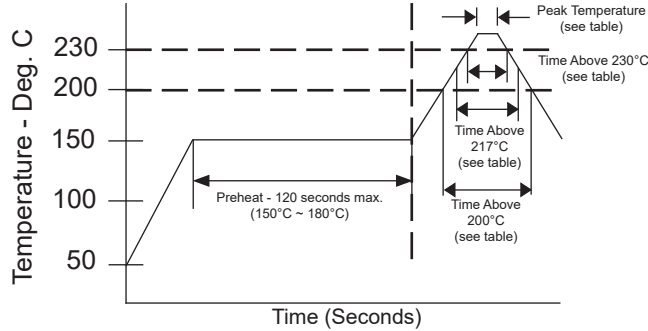


Review & Compare Reflow Soldering Heat Limits  
V-chip SMT Aluminum Electrolytic Capacitors  
[www.niccomp.com/RSL](http://www.niccomp.com/RSL)

### PEAK REFLOW TEMPERATURES AND DURATION

Diameter	Time above 200°C	Time above 217°C	Time above 230°C	Peak Temperature 5 seconds
8mm $\phi$	80 sec. max.	70 sec. max.	40 sec. max.	260°C
10mm $\phi$	70 sec. max.	60 sec. max.	40 sec. max.	250°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.



### CARRIER TAPE

Case Size	A $\pm 0.2$	B $\pm 0.2$	C $\pm 0.3$	D $\pm 0.1$	P $\pm 0.1$	T $\pm 0.2$	t max.
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

### LBF 380mm (15") REEL

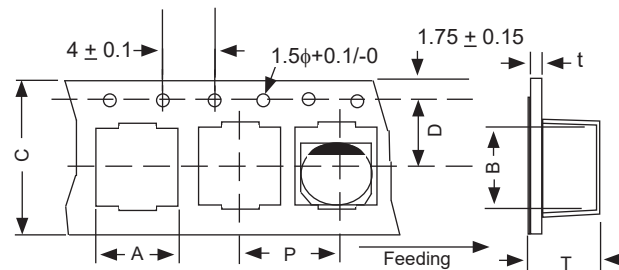
(See page 4 for plastic reel dimensions)

Case Size	W $\pm 3/-1$	Qty per Reel
		15" (380mm)
8x10.8, 10x10.8	26	500

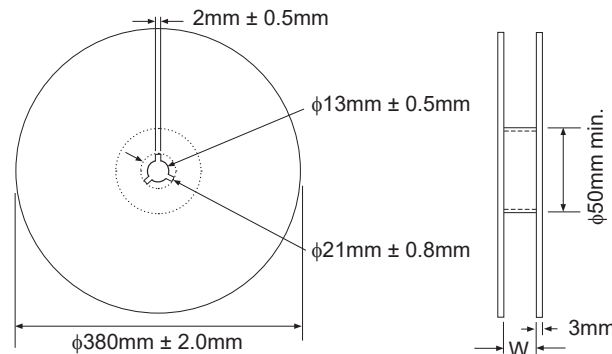
### TAPING SPECIFICATIONS (mm)

- 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.

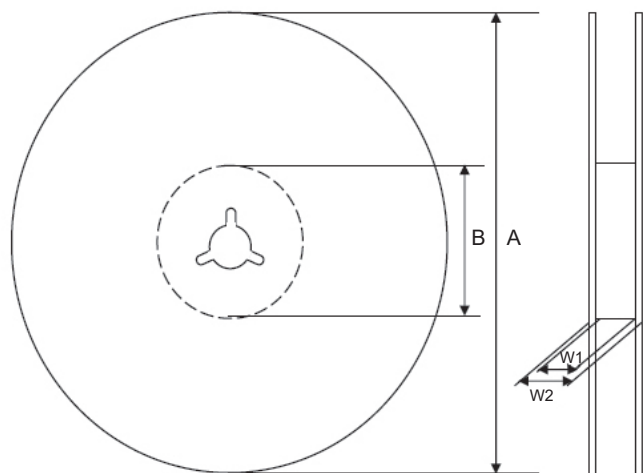
### CARRIER



### REEL



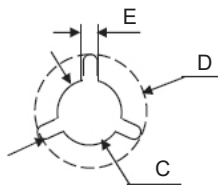
### V-Chip 15" (380mm) Reels (LBF suffix)



#### Dimensions (mm)

Case Size	Tape Width	W1	W2
8x10.8, 10x10.8	24.0	24.5 ~ 26.0	27.5 ~ 32.0

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



Case Size	Qty per Reel
	15" (380mm)
8x10.8, 10x10.8	500