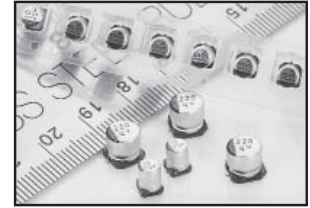


# Surface Mount Aluminum Electrolytic Capacitors NATU Series

## 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

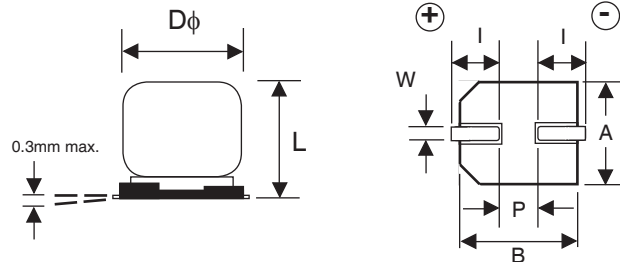


## CHARACTERISTICS

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	-



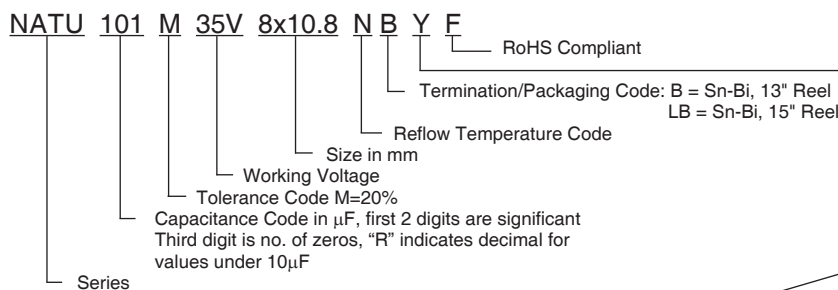
## DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A, B $\pm$ 0.2	l $\pm$ 0.3	P $\pm$ 0.3	W
8 x 10.8	8.0	10.8	8.3	2.9	3.2	0.7 ~ 1.0
10 x 10.8	10.0	10.8	10.3	3.2	4.6	1.0 ~ 1.4

Reflow Code
L = +250°C
N = +260°C

Termination / Packaging Code
B = Sn-Bi / 13" reel
LB = Sn-Bi / 15" reel

## PART NUMBER SYSTEM



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

## PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.  
Also found at [www.niccomp.com/precautions](http://www.niccomp.com/precautions)  
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)



# Surface Mount Aluminum Electrolytic Capacitors NATU Series

## STANDARD VALUES, CASE SIZES & SPECIFICATIONS

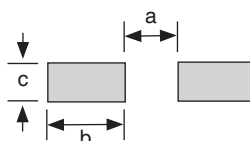
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @ 120Hz/20°C	Max. ESR (Ω) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/125°C	Load Life Hours @ +125°C
NATU151M25V8X10.8NBYP	150	25	0.16	0.30	300	4,000
NATU331M25V10X10.8LBYP	330		0.16	0.20	500	4,000
NATU101M35V8X10.8NBYP	100	35	0.14	0.30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

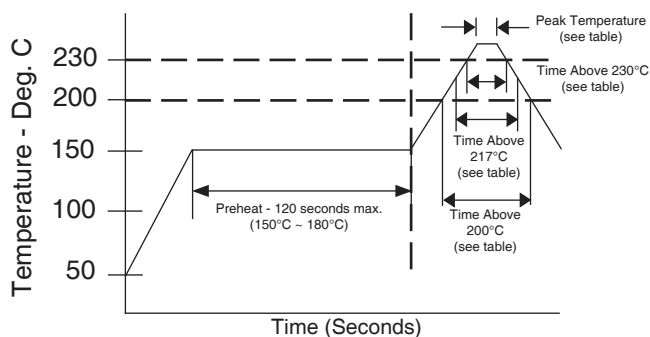
Case Size	a	b	c
8x10.8	2.8	4.1	2.1
10x10.8	4.3	4.4	2.5



## PEAK REFLOW TEMPERATURES AND DURATION

Diameter	Time above 200°C	Time above 217°C	Time above 230°C	Peak Temperature 5 seconds
8mm φ	80 sec. max.	70 sec. max.	40 sec. max.	260°C
10mm φ	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.



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



# Surface Mount Aluminum Electrolytic Capacitors NATU Series

## CARRIER TAPE

Case Size	A ±0.2	B ±0.2	C ±0.3	D ±0.1	P ±0.1	T ±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

## TR13 330mm (13") REEL

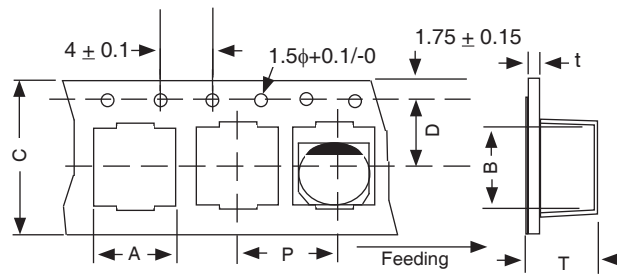
## TR15 380mm (15") REEL

Case Size	W ±1.0	Qty per Reel	
		13" (330mm)	15" (380mm)
8x10.8	26	300	500
10x10.8	26	300	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

