

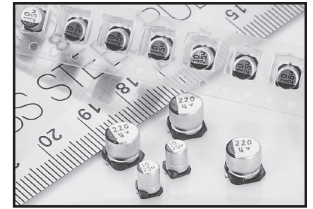
# NSPE-TJ Series Hybrid Aluminum Electrolytic Capacitors



## FEATURES

- 55°C TO +125°C OPERATING RANGE
- MEETS THE REQUIREMENTS OF AEC-Q200\*
- HIGH RIPPLE CURRENT RATING AT HIGH TEMPERATURE
- EXTENDED LIFETIME: 4000 HOURS @ +125°C
- CASE SIZES 6.3x6.1mm ~ 10x12.5mm
- 'W' WIDE TERMINAL OPTION FOR HIGH VIBRATION APPLICATIONS  
8mm & 10mm DIAMETER SIZES

Available with Wide  
Anti-Vibration  
Terminations



\*Contact NIC for supporting test data

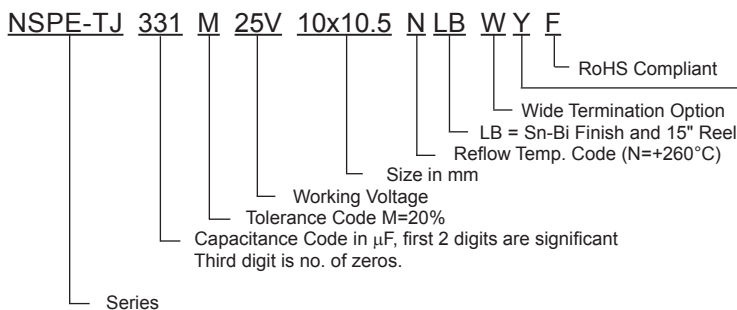
## CHARACTERISTICS

Rated Voltage Range	25 ~ 80VDC					
Rated Capacitance Range	22 ~ 470 $\mu$ F					
Operating Temp. Range	-55 ~ +125°C					
Capacitance Tolerance	$\pm$ 20% (M)					
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV					
Working Voltage & Surge Voltage Ratings	W.V. (Vdc)	25	35	50	63	80
	S.V. (Vdc)	32	44	63	79	100
Tan $\delta$ @ 120Hz/20°C		0.14	0.12	0.10	0.08	0.08
Temperature Stability Impedance Ratio @ 120Hz	Z -55°C/Z +20°C	1.0 ~ 2.5				
	Z +125°C/Z +20°C	0.6 ~ 1.0				
Load Life Test at W.V. @ 125°C All Case Sizes: 4,000 Hours	Capacitance Change	Within $\pm$ 30% of initial measured value				
	ESR, Tan $\delta$	Less than 200% 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	50	63	80
22	220	-	-	-	-	8x10.5
33	330	-	-	-	-	10x10.5
39	390	-	-	-	-	10x12.5
47	470	-	6.3x6.1	-	8x10.5	-
56	560	6.3x6.1	-	-	-	-
68	680	-	6.3x8	8x10.5	-	-
82	820	-	-	-	10x10.5	-
100	101	6.3x8	-	-	10x12.5	-
120	121	-	-	10x10.5	-	-
150	151	-	8x10.5	10x12.5	-	-
220	221	8x10.5	-	-	-	-
270	271	-	10x10.5	-	-	-
330	331	10x10.5	10x12.5	-	-	-
470	471	10x12.5	-	-	-	-

## PART NUMBER SYSTEM



Termination & Packaging Code LB = Sn-Bi / 15" reel
Reflow Code N = +260°C

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

## 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**

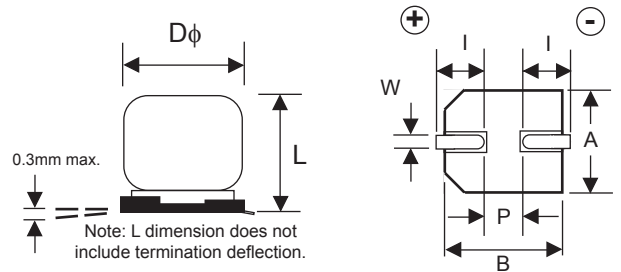
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @120Hz/+20°C	Max. ESR (Ω) AT 100KHz/+20°C	Max. Ripple Current (mA rms) AT 100KHz/+125°C	Load Life Hours @ +125°C
NSPE-TJ560M25V6.3x6.1NLBYF	56	25V	0.14	0.050	1400	4000
NSPE-TJ101M25V6.3x8NLBYF	100		0.14	0.030	2100	4000
NSPE-TJ221M25V8x10.5NLBYF	220		0.14	0.027	2900	4000
NSPE-TJ331M25V10X10.5NLBYF	330		0.14	0.020	3300	4000
NSPE-TJ471M25V10X12.5NLBYF	470		0.14	0.016	3800	4000
NSPE-TJ470M35V6.3x6.1NLBYF	47	35V	0.12	0.060	1400	4000
NSPE-TJ680M35V6.3x8NLBYF	68		0.12	0.035	2100	4000
NSPE-TJ151M35V8x10.5NLBYF	150		0.12	0.027	2900	4000
NSPE-TJ271M35V10x10.5NLBYF	270		0.12	0.020	3300	4000
NSPE-TJ331M35V10X12.5NLBYF	330		0.12	0.017	3800	4000
NSPE-TJ680M50V8x10.5NLBYF	68	50V	0.10	0.030	2300	4000
NSPE-TJ121M50V10x10.5NLBYF	120		0.10	0.028	2700	4000
NSPE-TJ151M50V10X12.5NLBYF	150		0.10	0.019	3500	4000
NSPE-TJ470M63V8x10.5NLBYF	47	63V	0.08	0.040	2100	4000
NSPE-TJ820M63V10x10.5NLBYF	82		0.08	0.030	2600	4000
NSPE-TJ101M63V10X12.5NLBYF	100		0.08	0.022	3400	4000
NSPE-TJ220M80V8x10.5NLBYF	22	80V	0.08	0.045	2000	4000
NSPE-TJ330M80V10x10.5NLBYF	33		0.08	0.036	2550	4000
NSPE-TJ390M80V10X12.5NLBYF	39		0.08	0.032	3000	4000

**RIPPLE CURRENT FREQUENCY CORRECTION FACTOR**

Frequency (Hz)	100 ≤ f <1K	1K ≤ f <10K	10K ≤ f <100K	100K ≤ f 500K
22μF ~ 470μF	0.10	0.35	0.70	1.00

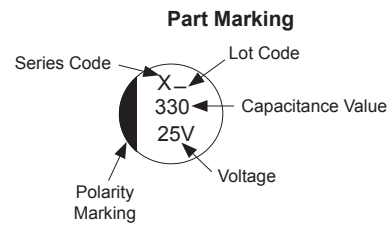
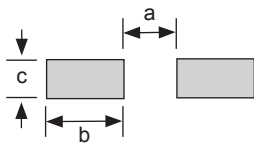
**DIMENSIONS (mm)**

Case Size	Dφ ±0.5	L max.	A, B ±0.2	(I)	(P)	W
6.3x6.1	6.3	6.1	6.6	2.6	2.2	0.5 ~ 0.8
6.3x8	6.3	8.0	6.6	2.6	2.2	0.5 ~ 0.8
8x10.5	8.0	10.5	8.3	2.9	3.2	0.7 ~ 1.0
10x10.5	10.0	10.5	10.3	3.2	4.6	1.0 ~ 1.4
10x12.5	10.0	12.5	10.3	3.2	4.6	1.0 ~ 1.4



**LAND PATTERN DIMENSIONS (mm)**

Case Size	a	b	c
6.3x6.1	1.8	3.6	1.8
6.3x8	1.8	3.6	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5
10x12.5	4.3	4.4	2.5



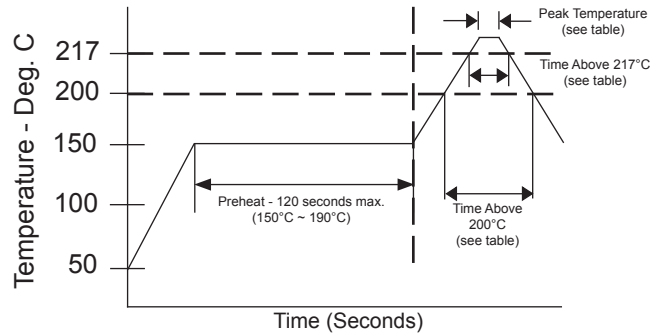
**25V ~ 50V PEAK REFLOW TEMPERATURES AND DURATION**

Diameter	Peak Temperature	Time above +200°C	Time above +217°C	Time above +230°C	Number of Reflow Cycles
φ6.3	+260°C	Within 70 sec.	Within 40 sec.	Within 30 sec.	2
φ8.0 & φ10mm	+260°C	Within 70 sec.	Within 40 sec.	Within 30 sec.	1
	+245°C	Within 70 sec.	Within 50 sec.	Within 40 sec.	2

**63V ~ 80V PEAK REFLOW TEMPERATURES AND DURATION**

Diameter	Peak Temperature	Time above +200°C	Time above +217°C	Time above +230°C	Number of Reflow Cycles
φ8.0 & φ10mm	+260°C	Within 70 sec.	Within 40 sec.	Within 30 sec.	1
	+245°C	Within 70 sec.	Within 40 sec.	Within 30 sec.	2

Capacitors can withstand two reflow passes under the specified conditions when the peak temperature is +245°C. A one hour cooling period to room temperature is required before the second pass through the reflow process.

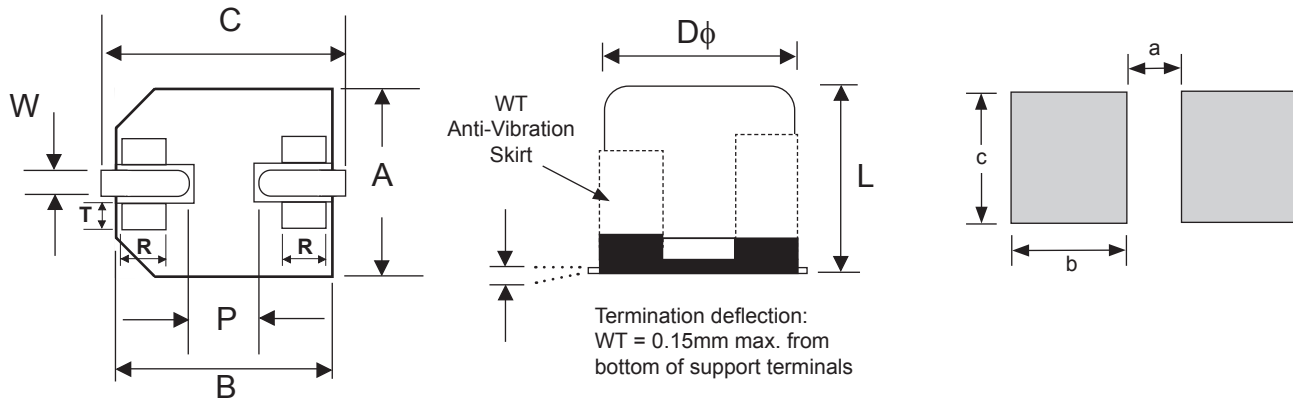


**W (WIDE TERMINATIONS) COMPONENT DIM. (mm)**

Case Size	Dφ ±0.5	L	A, B ±0.2	C ±0.2	P	W	R	T
8x10.5	8.0	10.7 ± 0.5	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.5	10.0	10.7 ± 0.5	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)
10x12.5	10.0	12.5 ± 1.0	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)

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

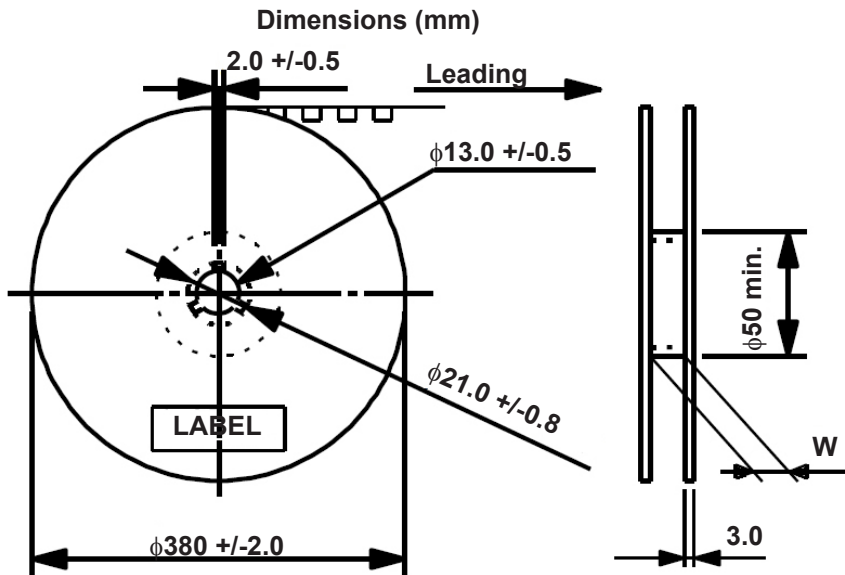
Case Size	a	b	c
8x10.5	2.5	4.5	4.7
10x10.5	3.8	4.8	4.7
10x12.5	3.8	4.8	4.7



W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours total in each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log Thickness of Solder Paste: 0.20mm ± 0.03mm
Capacitance	During test measured value to be stabilized
Appearance	No remarkable abnormality

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

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



**Reel Quantity**

Case Size	W <sup>+3</sup> / <sub>-1</sub>	Qty per Reel
		15" (380mm)
6.3x6.1	18	1000
6.3x8	18	900
8x10.5	26	500
10x10.5	26	500
10x12.5	26	400

**CARRIER TAPE**

Case Size	A ±0.2	B ±0.2	C ±0.3	D ±0.1	P ±0.1	T ±0.2	t max.
6.3x6.1	7.0	7.0	16.0	7.5	12.0	6.5	0.6
6.3x8	7.0	7.0	16.0	7.5	12.0	8.2	0.6
8x10.5	8.7	8.7	24.0	11.5	16.0	11.1	0.6
10x10.5	10.7	10.7	24.0	11.5	16.0	11.2	0.6
10x12.5	10.7	10.7	24.0	11.5	16.0	13.3	0.6

**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**

