

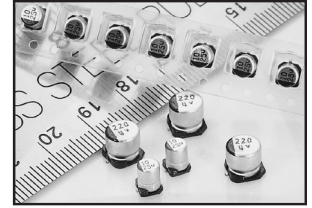
# Hybrid Aluminum Electrolytic Capacitors

NSPE-J Series

## FEATURES

- -40°C TO +150°C OPERATING RANGE
- MEETS THE REQUIREMENTS OF AEC-Q200\*
- HIGH RIPPLE CURRENT RATING AT HIGH TEMPERATURE
- EXTENDED LIFETIME: 1000 HOURS @ +150°C (OVER 20K HOURS @ +105°C)
- 6.3x8mm, 8x10.5mm, 10x10.5mm & 10x12.5mm SIZES
- 'W' WIDE TERMINAL OPTION FOR HIGH VIBRATION APPLICATIONS

\*Contact NIC for supporting test data

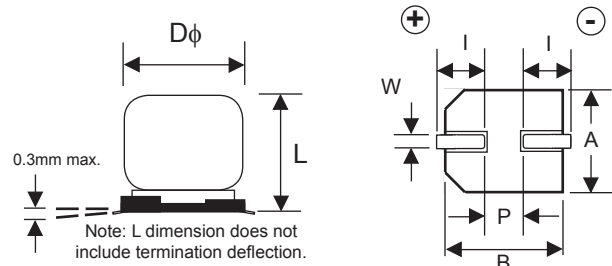


## CHARACTERISTICS

Rated Voltage Range	25 ~ 63VDC				
Rated Capacitance Range	33 ~ 330 $\mu$ F				
Operating Temp. Range	-40 ~ +150°C				
Capacitance Tolerance	$\pm$ 20% (M)				
Max. Leakage Current After 2 Minutes @ 20°C	0.05CV				
Working Voltage & Surge Voltage Ratings	W.V. (Vdc)	25	35	50	63
	S.V. (Vdc)	32	44	63	79
Tan $\delta$ @ 120Hz/20°C		0.16			
Temperature Stability Impedance Ratio @ 120Hz	Z -40°C/Z +20°C	1.0 ~ 2.5			
	Z +150°C/Z +20°C	0.6 ~ 1.0			
Load Life Test at W.V. @ 150°C All Case Sizes: 1,000 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			

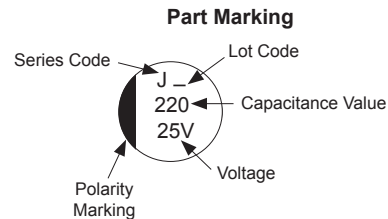
## STANDARD PRODUCT AND CASE SIZE D $\phi$ xL (mm)

Cap.( $\mu$ F)	Code	Working Voltage (Vdc)			
		25	35	50	63
33	330	-	-	-	8x10.5
47	470	-	6.3x8	-	-
56	560	-	-	8x10.5	10x10.5
68	680	6.3x8	-	-	10x12.5
100	101	-	8x10.5	10x10.5	-
120	121	-	-	10x12.5	-
150	151	8x10.5	10x10.5	-	-
220	221	10x10.5	10x12.5	-	-
270	271	10x10.5	-	-	-
330	331	10x12.5	-	-	-



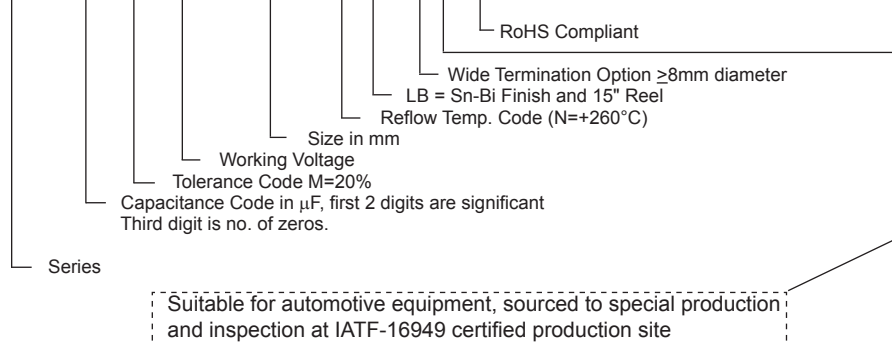
## DIMENSIONS (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A, B $\pm$ 0.2	I $\pm$ 0.3	(P)	W
6.3x8	6.3	8.0	6.6	2.5	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



## PART NUMBER SYSTEM

NSPE-J 221 M 25V 10x10.5 N LB W Y F



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

Reflow Code  
N = +260°C

## 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)



NIC COMPONENTS CORP.

www.niccomp.com

SPECIFICATIONS ARE SUBJECT TO CHANGE

## STANDARD VALUES, CASE SIZES & SPECIFICATIONS

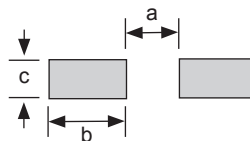
Part Number	Cap. (μF)	Working Voltage	Dissipation Factor @120Hz/20°C	Max. ESR (Ω) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/150°C	Load Life Hours @ +150°C
NSPE-J680M25V6.3X8NLBYF	68	25V	0.16	0.045	540	1000
NSPE-J151M25V8x10.5NLBYF	150		0.16	0.027	740	1000
NSPE-J221M25V10X10.5NLBYF	220		0.16	0.022	850	1000
NSPE-J271M25V10X10.5NLBYF	270		0.16	0.022	850	1000
NSPE-J331M25V10X12.5NLBYF	330		0.16	0.016	970	1000
NSPE-J470M35V6.3X8NLBYF	47	35V	0.16	0.060	510	1000
NSPE-J101M35V8x10.5NLBYF	100		0.16	0.030	710	1000
NSPE-J151M35V10x10.5NLBYF	150		0.16	0.023	830	1000
NSPE-J221M35V10X12.5NLBYF	220		0.16	0.017	950	1000
NSPE-J560M50V8X10.5NLBYF	56	50	0.16	0.035	660	1000
NSPE-J101M50V10X10.5NLBYF	100		0.16	0.028	780	1000
NSPE-J121M50V10X12.5NLBYF	120		0.16	0.019	890	1000
NSPE-J330M63V8X10.5NLBYF	33	63	0.16	0.040	610	1000
NSPE-J560M63V10X10.5NLBYF	56		0.16	0.030	710	1000
NSPE-J680M63V10X12.5NLBYF	68		0.16	0.022	810	1000

## RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	100 ≤ f < 1K	1K ≤ f < 10K	10K ≤ f < 100K	100K ≤ f
33μF ~ 330μF	0.10	0.35	0.70	1.00

## LAND PATTERN DIMENSIONS (mm)

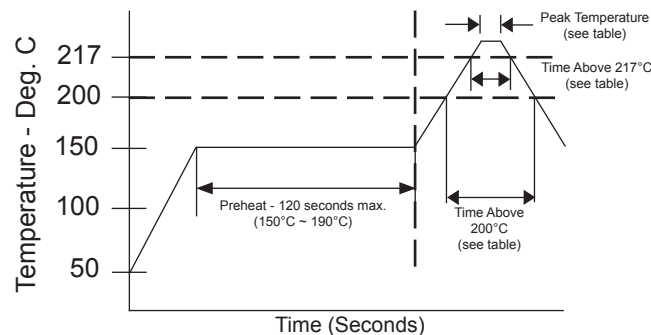
Case Size	a	b	c
6.3x8	1.8	3.6	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5
10x12.5	4.3	4.4	2.5



## PEAK REFLOW TEMPERATURES AND DURATION

Diameter	Time above 200°C	Time above 217°C	Time above 230°C	Peak Temperature 5 seconds
φ6.3 & φ10mm	Within 100 sec.	Within 80 sec.	Within 40 sec.	+260°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.

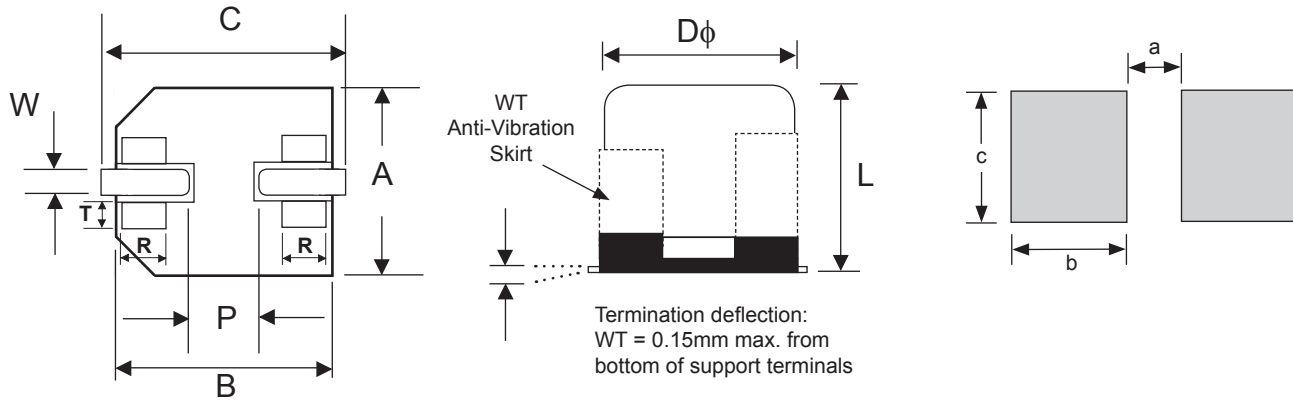


### W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

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	11.2	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.5	10.0	11.2	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)
10x12.5	10.0	13.5	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

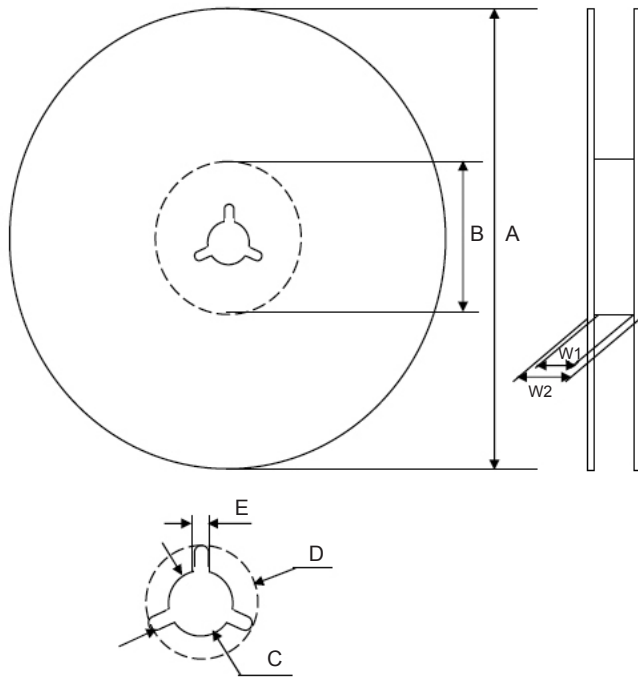


### W (Wide Terminations) Anti-Vibration Test

Test Method	W (Wide Terminations) Anti-Vibration Test
Capacitance	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 $\pm$ 0.03mm
Appearance	During test measured value to be stabilized 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)



Dimensions (mm)

Case Size	Tape Width	W1	W2
6.3x8	16.0	16.5 ~ 18.5	19.5 ~ 24.0
8x10.5, 10x10.5, 10x12.5	24.0	24.5 ~ 26.5	27.5 ~ 32.0

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 $\pm 0.5$
8x10.5, 10x10.5, 10x12.5	24.0					

Color
Black

Case Size	Qty per Reel 15" (380mm)
6.3x8	900
8x10.5	500
10x10.5	500
10x12.5	400

## 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.
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

