NSPE-YP Series
Hybridt Aluminum Electrolytic Capacitors

AEC-Q200 QUALIFIED | 9001:2015 CERTIFIED | ROHS/REACH COMPLIANT HALOGEN FREE

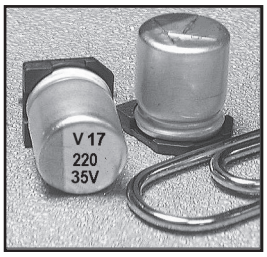
NIC Components Corp.

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- EXTENDED LOAD LIFE AT HIGH TEMPERATURE (4,000 HOURS @ +135°C)
- INCREASED CAPACITANCE VALUE PER CASE SIZE
- LOW ESR AND HIGH RIPPLE CURRENT RATINGS
- 8x10.5mm ~ 10x16.5mm CASE SIZES
- HIGH REFLOW SOLDERING RATED TO +260°C
- MEETS THE REQUIREMENTS OF AEC-Q200*

*Contact NIC for supporting test data

UPGRADE

NSPE-YJ → NSPE-YP



Available with Wide Anti-Vibration Terminations

CHARACTERISTICS

Rated Voltage Range	16 ~ 35Vdc			
Rated Capacitance Range	220 ~ 1,800µF			
Operating Temp. Range	-55 ~ +135°C			
Capacitance Tolerance	±20% (M)			
Max. Leakage Current After 2 Minutes @ 20°C		0.01CV max.		
Working and Surge Voltage Ratings	W.V. (Vdc)	16	25	35
	S.V. (Vdc)	20	32	44
Tan δ @ 120Hz/20°C		0.16	0.14	0.12
Impedance Ratio	Z -55°C/Z +20°C	1 ~ 2.5		
	Z +125°C/Z +20°C	0.6 ~ 1.0		
	Z +135°C/Z +20°C			
Load Life Test @ +125°C and +135°C and Rated Voltage	W.V. (Vdc)	16	25	35
	ϕ8mm & ϕ10mm Dia.	4000 hrs.		
	Capacitance Change	Within ±30% of initial measured value		
	Tan δ and ESR	Less than 200% of specified max. value		
	Leakage Current	Less than specified max. value		
	ESR	Less than 200% of specified max. value		
Resistance to Soldering Heat	After reflow soldering and stablizing at +20°C capacitors shall meet the following limits.			
	Capacitance Change	Within ±10% of the initial measured value		
	Dissipation Factor	Less than specified value		
	Leakage Current	Less than specified value		
	ESR	Less than 130% of specified value		

STANDARD PRODUCTS AND CASE SIZES Dϕ x L (mm)

PART NUMBER	Cap. (µF)	Working Voltage	Case Size (D X L) mm	Max. ESR (mΩ) AT 100kHz/20°C	Max. Ripple Current (mA rms) AT 100KHz		Load Life Hours
					+125°C	+135°C	
NSPE-YP561M16V8X10.5NLBYF	560	16	8X10.5	27	3100	1500	4000
NSPE-YP102M16V10X10.5NLBYF	1000		10X10.5	20	3600	1750	4000
NSPE-YP122M16V10X12.5NLBYF	1200		10X12.5	16	4100	1950	4000
NSPE-YP152M16V10X13.8NLBYF	1500		10X13.8	15	4300	2050	4000
NSPE-YP182M16V10X16.5NLBYF	1800		10X16.5	11	5200	2500	4000
NSPE-YP331M25V8X10.5NLBYF	330	25	8X10.5	27	3100	1500	4,000
NSPE-YP331M25V8X10.5NLBYF	390		8X10.5	27	3100	1500	4,000
NSPE-YP561M25V10X10.5NLBYF	560		10X10.5	20	3600	1750	4,000
NSPE-YP681M25V10X10.5NLBYF	680		10X10.5	20	3600	1750	4,000
NSPE-YP681M25V10X12.5NLBYF	680		10X12.5	16	4100	1950	4,000
NSPE-YP821M25V10X12.5NLBYF	820		10X12.5	16	4100	1950	4,000
NSPE-YP821M25V10X13.8NLBYF	820		10X13.8	15	4300	2050	4,000
NSPE-YP102M25V10X13.8NLBYF	1000		10X13.8	15	4300	2050	4,000
NSPE-YP102M25V10X16.5NLBYF	1000		10X16.5	11	5200	2500	4,000
NSPE-YP122M25V10X16.5NLBYF	1200		10X16.5	11	5200	2500	4,000

STANDARD PRODUCTS AND CASE SIZES CONTINUE ON NEXT PAGE

NIC Components Corp.
100 Baylis Road. Melville, NY 11747

Last Updated 2/5/2025. Specification subject to change without notice. Please check web site for latest information.

NSPE-YP Series
Hybridt Aluminum Electrolytic Capacitors

AEC-Q200 QUALIFIED | 9001:2015 CERTIFIED | ROHS/REACH COMPLIANT HALOGEN FREE | NIC Components Corp.

STANDARD PRODUCTS AND CASE SIZES Dϕ x L (mm)

PART NUMBER	Cap. (µF)	Working Voltage	Case Size (D X L) mm	Max. ESR (mΩ) AT 100kHz/20°C	Max. Ripple Current (mA rms) AT 100KHz		Load Life Hours
					+125°C	+135°C	
NSPE-YP221M35V8X10.5NLBYF	220	35	8X10.5	27	3100	1500	4,000
NSPE-YP391M35V10X10.5NLBYF	390		10X10.5	20	3600	1750	4,000
NSPE-YP471M35V10X12.5NLBYF	470		10X12.5	16	4100	1950	4,000
NSPE-YP561M35V10X13.8NLBYF	560		10X13.8	15	4300	2050	4,000
NSPE-YP681M35V10X16.5NLBYF	680		10X16.5	11	5200	2500	4,000

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	100Hz ≤ F < 1KHz	1KHz ≤ F < 10KHz	10KHz ≤ F < 100KHz	100K ≤ F < 500KHz
Correction Factor	0.15	0.45	0.75	1.00

TERMINAL FINISH & REEL CODE

Code	Terminal Finish & Reel Size
LBF	Sn-Bi Finish & 15" Reel
LSF	100% Sn Finish & 15" Reel

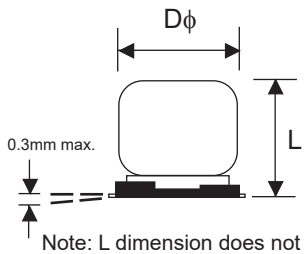
PART NUMBER SYSTEM

NSPE-YP 221 M 25V 8x10.5 N LB W Y F

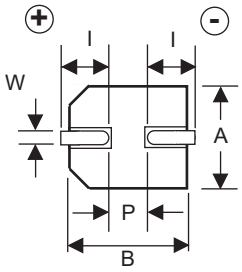
- NSPE-YP — Series
- 221 — Capacitance Code in µF, first 2 digits are significant. Third digit is no. of zeros, "R" indicates decimal for values under 10µF
- M — Tolerance Code M=20%
- 25V — Working Voltage
- 8x10.5 — Size in mm
- N — Reflow Temp. Code (N=+260°C)
- LB — LB = Sn-Bi Finish & 15" Reel, LS = 100% Sn & 15" Reel
- W — Wide Termination Option
- Y — Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site
- F — RoHS Compliant

DIMENSIONS (mm)

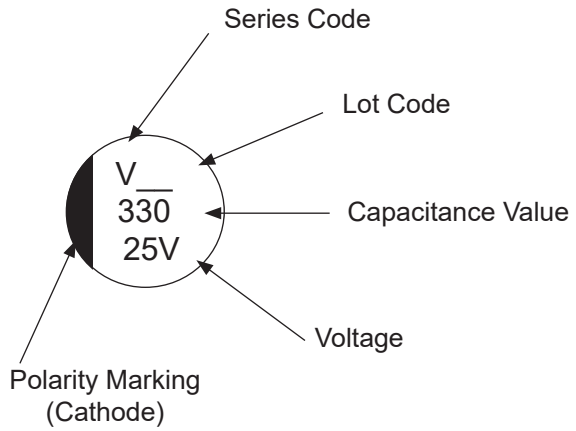
Case Size	Dϕ ±0.5	L max.	A, B ±0.2	W	(I)	(P)
8x10.5	8.0	10.5	8.3	0.7 ~ 1.0	2.9	3.2
10x10.5	10	10.5	10.3	1.0 ~ 1.4	3.2	4.6
10x12.5	10	12.5	10.3	1.0 ~ 1.4	3.2	4.6
10x13.8	10	13.8	10.3	1.0 ~ 1.4	3.2	4.6
10x16.5	10	16.5	10.3	1.0 ~ 1.4	3.2	4.6



Note: L dimension does not include termination deflection



Part Marking



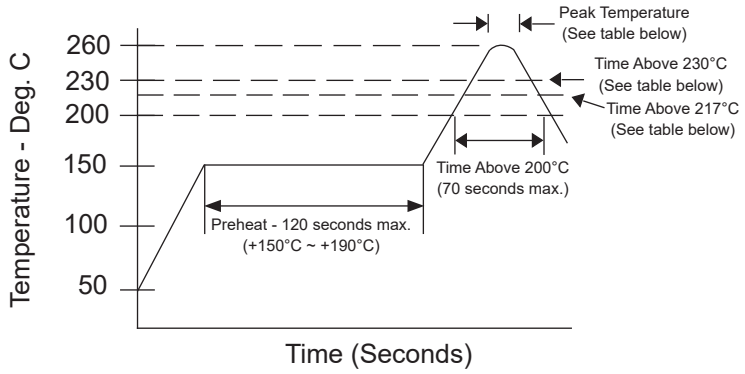
PRECAUTIONS

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**

NSPE-YP Series
Hybridt Aluminum Electrolytic Capacitors

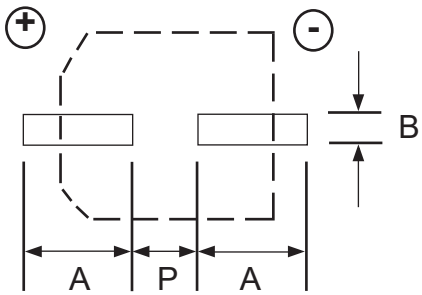
AEC-Q200 QUALIFIED | 9001:2015 CERTIFIED | ROHS/REACH COMPLIANT HALOGEN FREE | NIC Components Corp.

RECOMMENDED REFLOW SOLDERING PROFILE*



LAND PATTERN DIM. (mm)

Case Dia.	A	B	P
8	4.1	2.1	2.8
10	4.4	2.5	4.3



PEAK TEMPERATURE AND DURATION

Diameter	Time Above +200°C	Time Above +217°C	Time Above +230°C	Peak Temperature	Reflow Cycles
8.0mm ~ 10mm	70 sec. max.	40 sec. max.	30 sec. max.	+260°C	2

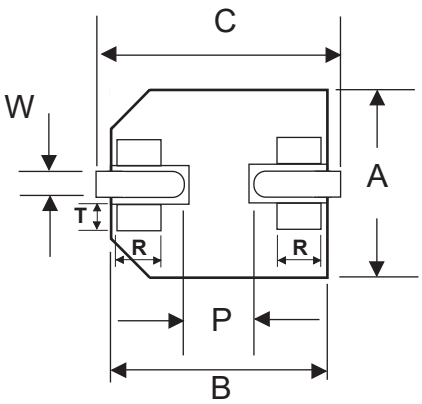
*Two reflow passes are permissible with a natural cool down to room temperature required between the first and second pass.

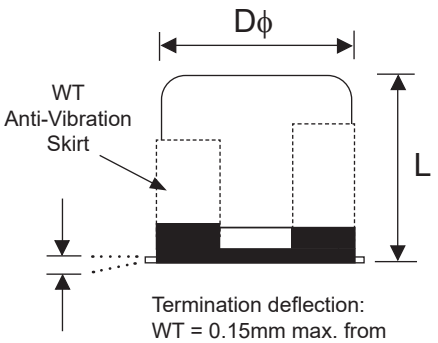
WIDE TERMINATION DIM. (mm)

Case Size	Dϕ ±0.5	L max.	A, B	C ±0.2	P	W	R	T
8x10.5WT	8.0	11.2	8.3 ± 0.2	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.5WT	10.0	11.2	10.3 ± 0.2	11.0	(4.6)	1.0 ~ 1.4	(2.1)	(1.1)
10x12.5WT	10.0	13.0	10.3 ± 0.2	11.0	(4.6)	1.0 ~ 1.4	(2.1)	(1.1)
10x13.8WT	10.0	14.3	10.3 ± 0.2	11.0	(4.6)	1.0 ~ 1.4	(2.1)	(1.1)
10x16.5WT	10.0	17.0	10.3 ± 0.2	11.0	(4.6)	1.0 ~ 1.4	(2.1)	(1.1)

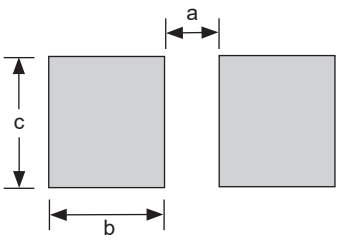
WIDE TERMINATION LAND PATTERN DIM. (mm)

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
10x13.8	3.8	4.8	4.7
10x16.5	3.8	4.8	4.7





Termination deflection:
WT = 0.15mm max. from bottom of support terminals

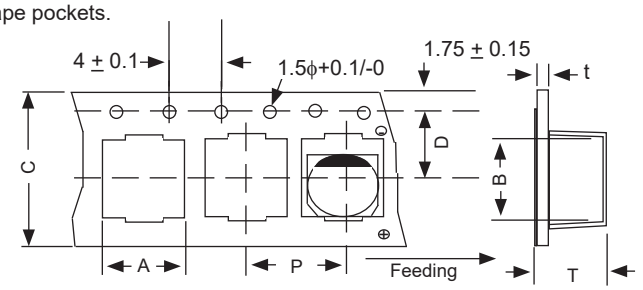


W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log Thickness of solder paste: 0.20: ± 0.03mm
Δ Capacitance	During Test Measured Value to be Stable
Tangent of Loss	No remarkable abnormality

TAPING SPECIFICATIONS (mm)

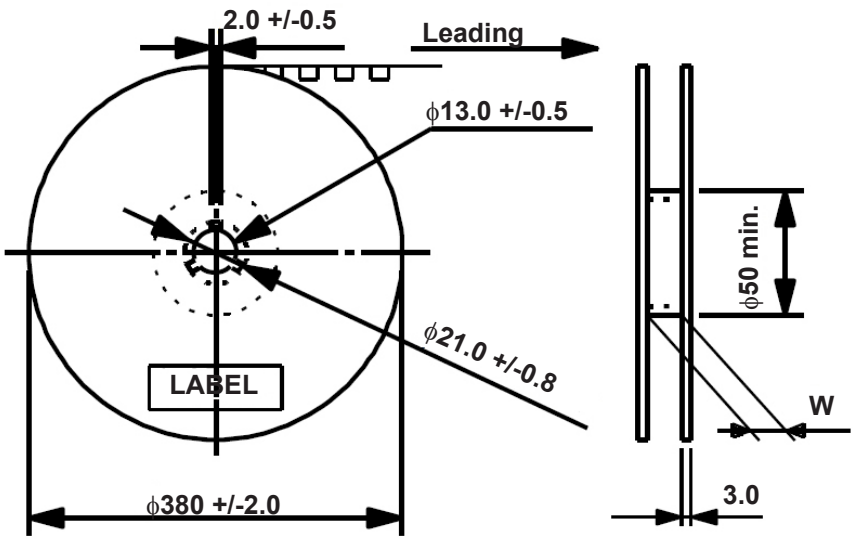
1. Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
2. Leader tape: Approximately 20cm of cover tape at leader.
3. Connection: Maximum 3 connections (slices) per reel.

Case Size	A ±0.5	B ±0.5	C ±0.3	D ±0.1	P ±0.1	T ±0.2	t max.
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
10x13.8	10.7	10.7	24.0	11.5	16.0	14.6	0.6
10x16.5	10.7	10.7	24.0	11.5	16.0	17.7	0.6



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

Dimensions (mm)



Reel Quantity

Case Size	W +3 / -1	Qty per Reel 15" (380mm)
8x10.5	26	500
10x10.5	26	500
10x12.5	26	400
10x13.8	26	400
10x16.5	26	325