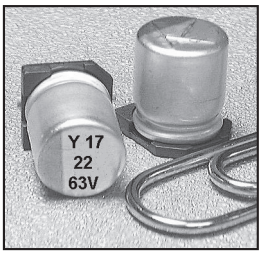
NSPE-Y Series
Hybrid Aluminum Electrolytic Capacitors

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- HIGH TEMPERATURE RANGE (+135°C)
- LOW ESR AND HIGH RIPPLE CURRENT
- 6.3x8 ~ 10x12.8mm CASE SIZES
- REFLOW SOLDERING RATED TO +260°C (ALL SIZES)
- MEETS THE REQUIREMENTS OF AEC-Q200*

*Contact NIC for supporting test data

Available with Wide Anti-Vibration Terminations



CHARACTERISTICS

Rated Voltage Range	25 ~ 63Vdc				
Rated Capacitance Range	10 ~ 330µF				
Operating Temp. Range	-55 ~ +135°C				
Capacitance Tolerance	±20% (M)				
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV				
Working and Surge Voltage Ratings	W.V. (Vdc)	25	35	50	63
	S.V. (Vdc)	32	44	63	79
Tan δ @ 120Hz/20°C		0.16			
Impedance Ratio	Z -55°C/Z +20°C	1 ~ 2.5			
	Z +135°C/Z +20°C	0.6 ~ 1.0			
Load Life Test @ 135°C and Rated Voltage	W.V. (Vdc)	25	35	50	63
	Test Duration	ϕd = 6.3mm 1000 Hrs. ±12 Hrs., ϕd ≥ 2000 Hrs. ±12 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			

STANDARD PRODUCTS AND CASE SIZES Dϕ x L (mm)

PART NUMBER	Cap. (µF)	Working Voltage	Case Size (D X L) mm	Max. Tan δ 120Hz/20°C	Max. ESR (mΩ) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/135°C	Load Life Hours (+135°C)
NSPE-Y680M25V6.3X8NLBYF	68	25	6.3X8	0.16	45	780	1000
NSPE-Y151M25V8X10.8NLBYF	150		8X10.8	0.16	27	1060	2000
NSPE-Y271M25V10X10.8NLBYF	270		10X10.8	0.16	22	1220	2000
NSPE-Y331M25V10X12.8NLBYF	330		10X12.8	0.16	16	1390	2000
NSPE-Y470M35V6.3X8NLBYF	47	35	6.3X8	0.16	60	730	1000
NSPE-Y101M35V8X10.8NLBYF	100		8X10.8	0.16	30	1010	2000
NSPE-Y151M35V10X10.8NLBYF	150		10X10.8	0.16	23	1180	2000
NSPE-Y221M35V10X12.8NLBYF	220		10X12.8	0.16	17	1360	2000
NSPE-Y270M40V6.3X8NLBYF	27	40	6.3X8	0.16	70	700	1000
NSPE-Y560M40V8X10.8NLBYF	56		8X10.8	0.16	32	980	2000
NSPE-Y101M40V10X10.8NLBYF	100		10X10.8	0.16	24	1150	2000
NSPE-Y121M40V10X12.8NLBYF	120		10X12.8	0.16	18	1320	2000
NSPE-Y150M50V6.3X8NLBYF	15	50	6.3X8	0.16	80	670	1000
NSPE-Y330M50V8X10.8NLBYF	33		8X10.8	0.16	35	940	2000
NSPE-Y560M50V10X10.8NLBYF	56		10X10.8	0.16	25	1110	2000
NSPE-Y820M50V10X12.8NLBYF	82		10X12.8	0.16	19	1270	2000
NSPE-Y100M63V6.3X8NLBYF	10	63	6.3X8	0.16	100	590	1000
NSPE-Y220M63V8X10.8NLBYF	22		8X10.8	0.16	40	870	2000
NSPE-Y330M63V8X10.8NLBYF	33		8X10.8	0.16	40	870	2000
NSPE-Y330M63V10X10.8NLBYF	33		10X10.8	0.16	30	1010	2000
NSPE-Y470M63V10X10.8NLBYF	47		10X10.8	0.16	30	1010	2000
NSPE-Y560M63V10X12.8NLBYF	56		10X12.8	0.16	22	1150	2000

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**

RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Capacitance (µF)	Frequency			
	100Hz ≤ F < 1KHz	1KHz ≤ F < 10KHz	10KHz ≤ F < 100KHz	100KHz ≤ F
C ≤ 4.7	0.03	0.30	0.65	1.00
4.7 < C ≤ 33	0.05	0.32	0.67	1.00
33 < C	0.10	0.35	0.70	1.00

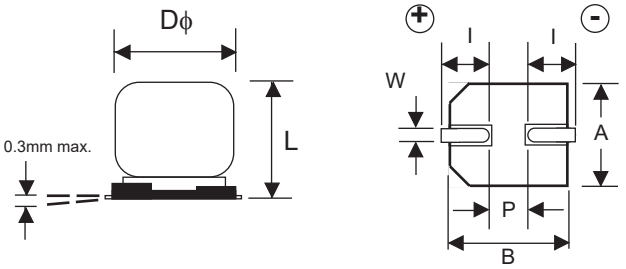
PART NUMBER SYSTEM

NSPE-Y 101 M 35V 8x10.8 N LB W Y F

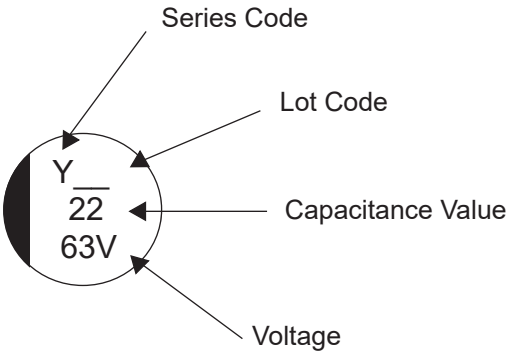
- F — RoHS Compliant
- Y — Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site
- W — Wide Termination Option
- LB — LB=Sn-Bi Finish & 15" Reell
- N — Reflow Temp. Code (N=+260°C)
- 8x10.8 — Size in mm
- 35V — Working Voltage
- M — Tolerance Code M=20%
- 101 — Capacitance Code in µF, first 2 digits are significant. Third digit is no. of zeros, "R" indicates decimal for values under 10µF
- NSPE-Y — Series

DIMENSIONS (mm)

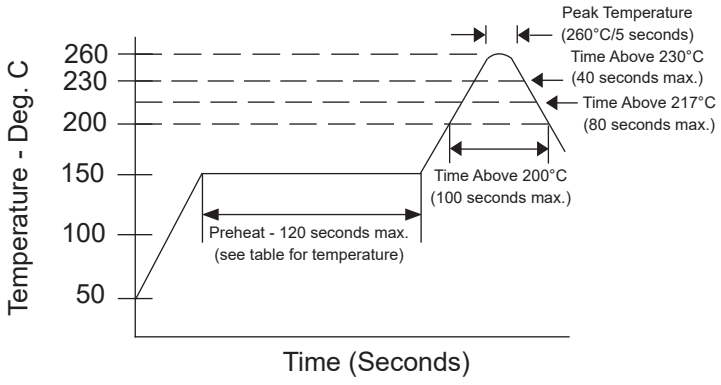
Case Size	Dϕ ±0.5	L max.	A, B ±0.2	W	I ±0.2	P ±0.2
6.3X8	6.3	8	6.6	0.5 ~ 0.8	2.5	2.2
8x10.8	8.0	10.8	8.3	0.7 ~ 1.0	2.9	3.2
10x10.8	10	10.8	10.3	1.0 ~ 1.4	3.2	4.6
10x12.8	10	12.8	10.3	1.0 ~ 1.4	3.2	4.6



Part Marking

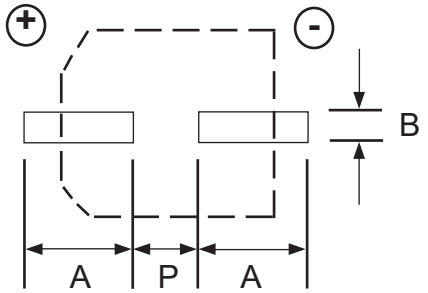


RECOMMENDED REFLOW SOLDERING PROFILE*



LAND PATTERN DIM. (mm)

Case Dia.	A	B	P
6.3	1.8	1.8	3.6
8	4.1	2.1	2.8
10	4.4	2.5	4.3



PEAK TEMPERATURE AND DURATION

Diameter	Preheat (120 sec. max.)	Time above 200°C	Time above 217°C	Time above 230°C	Peak Temperature
6.3 ~ 10mm	150°C ~ 190°C	100 sec. max.	80 sec. max.	40 sec. max.	260°C/5 sec.

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

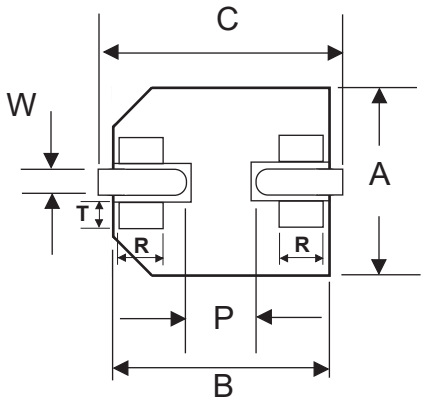
W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

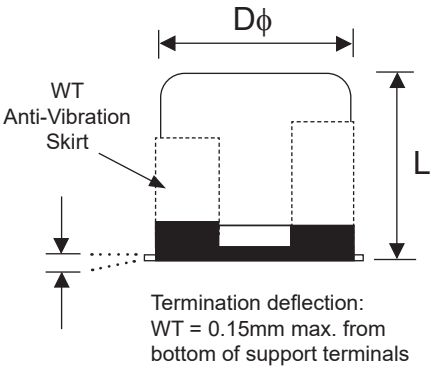
Case Size	Dϕ ±0.5	L max.	A, B ±0.2	C ±0.2	P	W	R	T
6.3x8	6.3	8.3	6.6	7.3	(2.2)	0.5 ~ 0.8	(1.7)	(0.7)
8x10.8	8.0	11.2	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.8	10.0	11.2	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)
10x12.8	10.0	13.5	10.3	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)

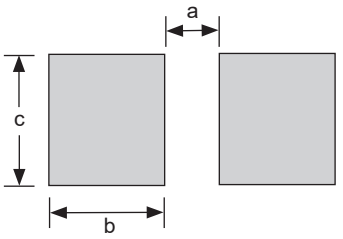
(Reference dimensions)

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

Case Size	a	b	c
6.3x8	1.6	4.0	3.0
8x10.8	2.5	4.5	4.7
10x10.8	3.8	4.8	4.7
10x12.8	3.8	4.8	4.7





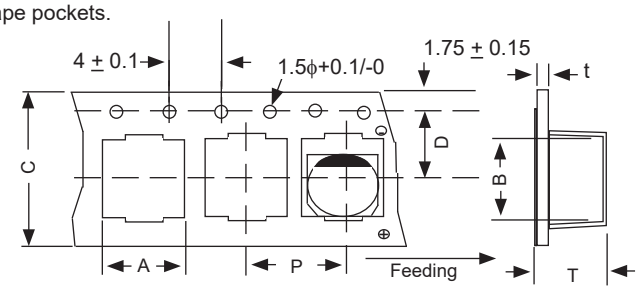


W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log
Δ Capacitance	Within ± 10% of initial value
Tangent of Loss	≤ Specified value
Leakage Current	≤ Specified value

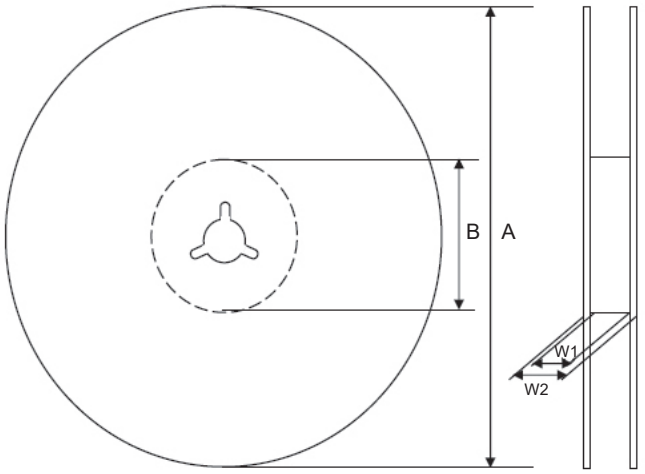
TAPING SPECIFICATIONS (mm)

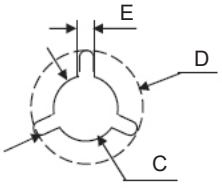
1. Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
2. Leader tape: Approximately 20cm of cover tape at leader.
3. Connection: Maximum 3 connections (slices) per reel.

Case Size	A ±0.5	B ±0.5	C ±0.3	D ±0.1	P ±0.1	T ±0.2	t max.
6.3X8	7.0	7.0	16.0	7.5	12.0	8.2	0.6
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
10X12.8	10.7	10.7	24.0	11.5	16.0	13.3	0.6



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





Dimensions (mm)

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

Case Size	Tape Width	A	B	C	D	E
6.3x8	16.0	ϕ380 ±2	ϕ80~105	ϕ13 ±0.5	ϕ21 ±1.0	2.0 ±0.5
8x10.8, 10x10.8, 10x12.8	24.0					

Case Size	Qty per Reel
	15" (380mm)
6.3X8	900
8X10.8	500
10X10.8	500
10X12.8	400