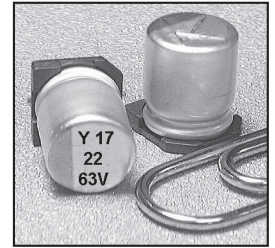


Hybrid Aluminum Electrolytic Capacitors

NSPE-Y Series

- 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-Y680M25V6.3X8NBF	68	25	6.3X8	0.16	45	780	1000
NSPE-Y151M25V8X10.8NBF	150		8X10.8	0.16	27	1060	2000
NSPE-Y271M25V10X10.8NBF	270		10X10.8	0.16	22	1220	2000
NSPE-Y331M25V10X12.8NBF	330		10X12.8	0.16	16	1390	2000
NSPE-Y470M35V6.3X8NBF	47	35	6.3X8	0.16	60	730	1000
NSPE-Y101M35V8X10.8NBF	100		8X10.8	0.16	30	1010	2000
NSPE-Y151M35V10X10.8NBF	150		10X10.8	0.16	23	1180	2000
NSPE-Y221M35V10X12.8NBF	220		10X12.8	0.16	17	1360	2000
NSPE-Y270M40V6.3X8NBF	27	40	6.3X8	0.16	70	700	1000
NSPE-Y560M40V8X10.8NBF	56		8X10.8	0.16	32	980	2000
NSPE-Y101M40V10X10.8NBF	100		10X10.8	0.16	24	1150	2000
NSPE-Y121M40V10X12.8NBF	120		10X12.8	0.16	18	1320	2000
NSPE-Y150M50V6.3X8NBF	15	50	6.3X8	0.16	80	670	1000
NSPE-Y330M50V8X10.8NBF	33		8X10.8	0.16	35	940	2000
NSPE-Y560M50V10X10.8NBF	56		10X10.8	0.16	25	1110	2000
NSPE-Y820M50V10X12.8NBF	82		10X12.8	0.16	19	1270	2000
NSPE-Y100M63V6.3X8NBF	10	63	6.3X8	0.16	100	590	1000
NSPE-Y220M63V8X10.8NBF	22		8X10.8	0.16	40	870	2000
NSPE-Y330M63V8X10.8NBF	33		8X10.8	0.16	40	870	2000
NSPE-Y330M63V10X10.8NBF	33		10X10.8	0.16	30	1010	2000
NSPE-Y470M63V10X10.8NBF	47		10X10.8	0.16	30	1010	2000
NSPE-Y560M63V10X12.8NBF	56		10X12.8	0.16	22	1150	2000

For Automotive Applications See Part Numbering System

PRECAUTIONS

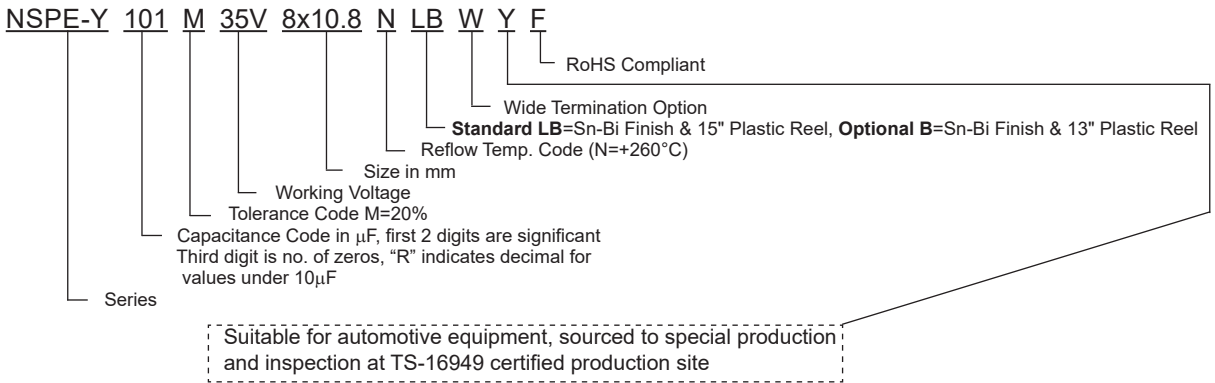
Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: tpmg@niccomp.com



RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

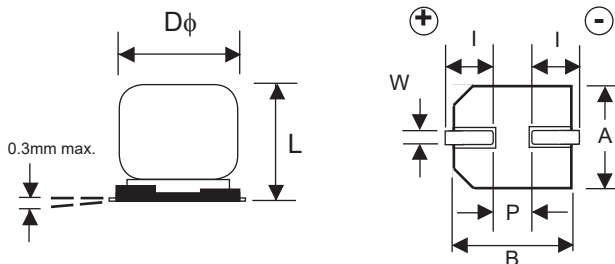
Capacitance (μF)	Frequency			
	100Hz ≤ F < 1KHz	1KHz ≤ F < 10KHz	10KHz ≤ F < 100KHz	100KHz ≤ F
C ≤ 4.7	0.03	0.30	0.65	1.00
4.7 < C ≤ 33	0.05	0.32	0.67	1.00
33 < C	0.10	0.35	0.70	1.00

PART NUMBER SYSTEM

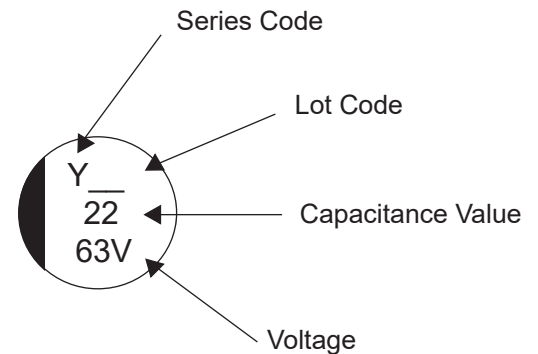


DIMENSIONS (mm)

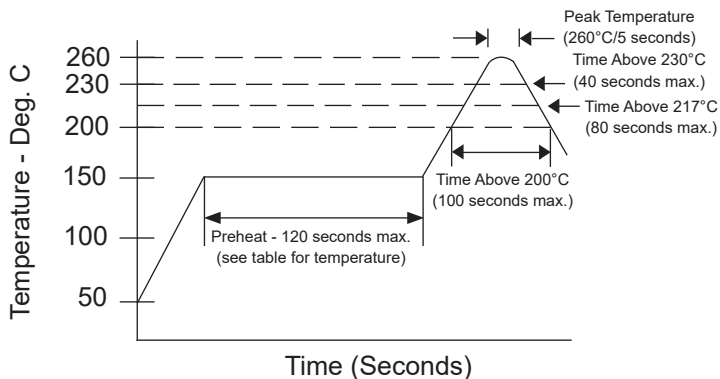
Case Size	Dφ ±0.5	L max.	A, B ±0.2	W	I ±0.2	P ±0.2
6.3X8	6.3	8	6.6	0.5 ~ 0.8	2.5	2.2
8x10.8	8.0	10.8	8.3	0.7 ~ 1.0	2.9	3.2
10x10.8	10	10.8	10.3	1.0 ~ 1.4	3.2	4.6
10x12.8	10	12.8	10.3	1.0 ~ 1.4	3.2	4.6



Part Marking

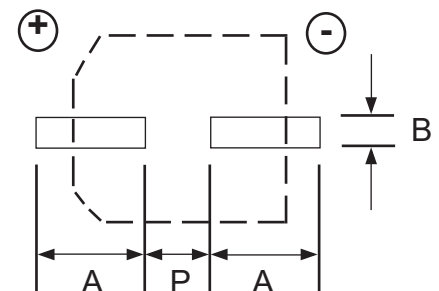


RECOMMENDED REFLOW SOLDERING PROFILE*



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.



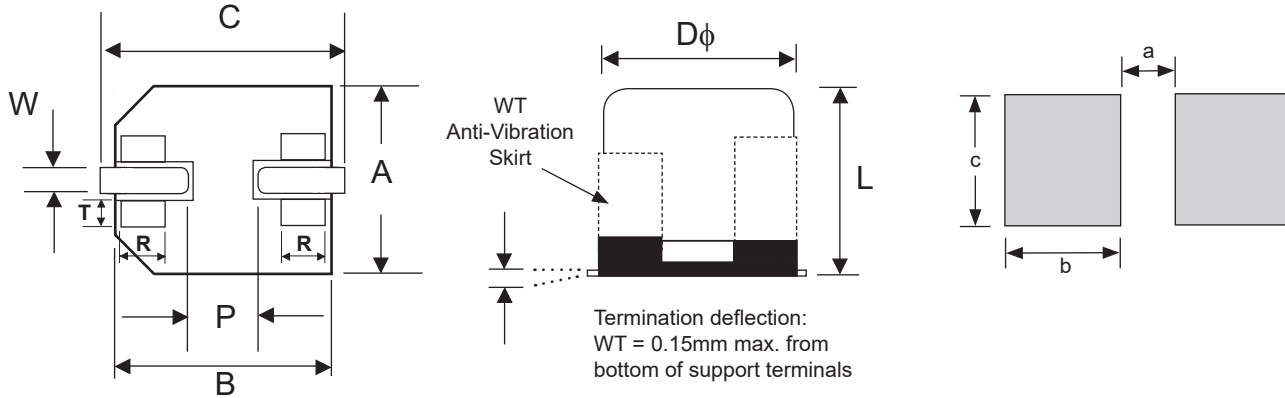
W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	D ϕ \pm 0.5	L max.	A, B \pm 0.2	C \pm 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

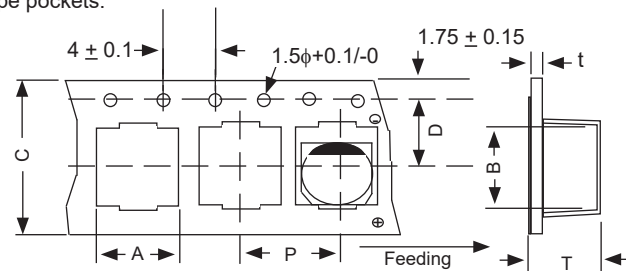


W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log
Δ Capacitance	Within \pm 10% of initial value
Tangent of Loss	\leq Specified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

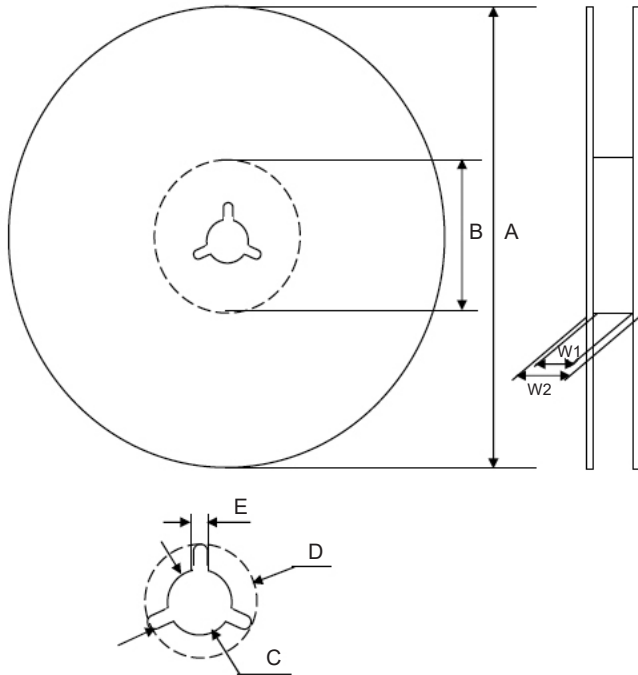
TAPING SPECIFICATIONS (mm)

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

Case Size	A \pm 0.5	B \pm 0.5	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
8X10.8	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



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



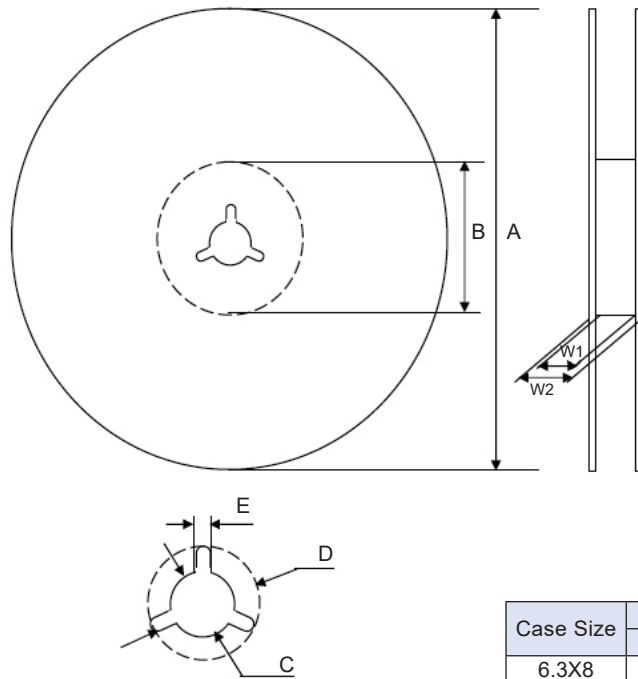
Dimensions (mm)

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	$\phi 380 \pm 2$	$\phi 80 \sim 105$	$\phi 13 \pm 0.5$	$\phi 21 \pm 1.0$	2.0 ± 0.5
8x10.8, 10x10.8, 10x12.8	24.0					

Color
Black

Optional V-Chip 13" (330mm) Plastic Reels (BF suffix)



Dimensions (mm)

Case Size	Tape Width	W1	W2
6.3x8	16.0	16.4 ~ 18.5	19.5 ~ 24.0
8x10.8, 10x10.8, 10x12.8	24.0	24.4 ~ 26.5	27.5 ~ 32.0

Case Size	Tape Width	A	B	C	D	E
6.3x8	16.0	$\phi 330 \pm 2.0$	$\phi 50 \sim 105$	$\phi 13 \pm 0.5$	$\phi 21 \pm 1.0$	2.0 ± 0.5
8x10.8, 10x10.8, 10x12.8	24.0					

Color
Black

Case Size	Qty per Reel	
	13" (330mm)	15" (380mm)
6.3X8	500	900
8X10.8	300	500
10X10.8	300	500
10X12.8	300	400