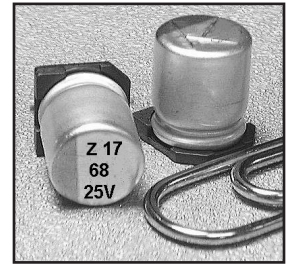


- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- EXTENDED LOAD LIFE AT HIGH TEMPERATURE (2000 ~ 5,000 HOURS @ +105°C)
- VOLTAGE RATINGS (16 ~ 40VDC)
- ULTRA LOW ESR AND HIGH RIPPLE CURRENT RATINGS
- 6.3x6.3mm ~ 10x12.8mm CASE SIZES
- HIGH REFLOW SOLDERING TEMPERATURE (+260°C)
- MEETS THE REQUIREMENTS OF AEC-Q200\*

\*Contact NIC for supporting test data

Available with Wide  
Anti-Vibration  
Terminations



### CHARACTERISTICS

Rated Voltage Range	16 ~ 40Vdc		
Rated Capacitance Range	18 ~ 560 $\mu$ F		
Operating Temp. Range	-55 ~ +105°C		
Capacitance Tolerance	$\pm$ 20% (M)		
Max. Leakage Current After 2 Minutes @ 20°C	All Values	Less than 0.01CV or 3 $\mu$ A whichever is greater	
Working and Surge Voltage Ratings	W.V. (Vdc)	16      25      35      40	
	S.V. (Vdc)	20      32      44      50	
Tan $\delta$ @ 120Hz/20°C	0.16		
Impedance Ratio	Z -55°C/Z +20°C	0.75 ~ 1.25	
	Z +105°C/Z +20°C	0.75 ~ 1.25	
Load Life Test @ 105°C and Rated Voltage	W.V. (Vdc)	16      25      35      40	
	Case Dia.	$\phi$ 6.3mm	2000 hrs.
		$\phi$ 8 & 10mm	5000 hrs.
	Capacitance Change	Within $\pm$ 30% of initial measured value	
	Tan $\delta$ and ESR	Less than 200% of specified max. value	
	Leakage Current	Less than specified max. value	

### STANDARD PRODUCTS AND CASE SIZES D $\phi$ x L (mm)

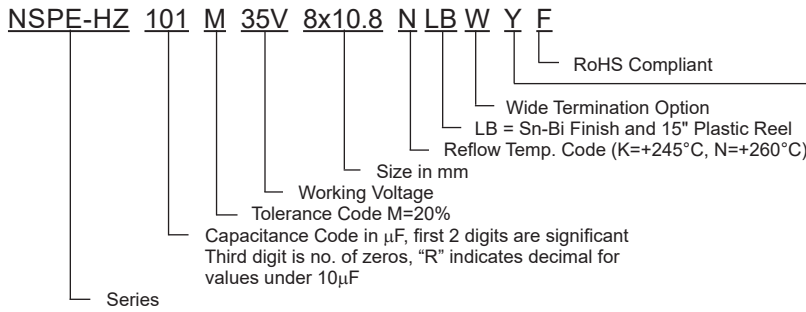
PART NUMBER	Cap. ( $\mu$ F)	Working Voltage	Case Size (D X L) mm	Max. ESR (m $\Omega$ ) AT 100KHz/20°C	Max. Ripple Current (mA rms) AT 100KHz/105°C	Load Life Hours (+105°C)
NSPE-HZ820M16V6.3X6.3NLBYF	82	16	6.3X6.3	38	1890	2000
NSPE-HZ121M16V6.3X8NLBYF	120		6.3X8	32	2070	2000
NSPE-HZ271M16V8X10.8NLBYF	270		8X10.8	23	2820	5000
NSPE-HZ471M16V10X10.8NLBYF	470		10X10.8	18	3750	5000
NSPE-HZ561M16V10X12.8NLBYF	560		10X12.8	14	4340	5000
NSPE-HZ470M25V6.3X6.3NLBYF	47	25	6.3X6.3	40	1800	2000
NSPE-HZ680M25V6.3X8NLBYF	68		6.3X8	35	1980	2000
NSPE-HZ151M25V8X10.8NLBYF	150		8X10.8	25	2690	5000
NSPE-HZ271M25V10X10.8NLBYF	270		10X10.8	19	3580	5000
NSPE-HZ331M25V10X12.8NLBYF	330		10X12.8	14	4140	5000
NSPE-HZ270M35V6.3X6.3NLBYF	27	35	6.3X6.3	50	1530	2000
NSPE-HZ470M35V6.3X8NLBYF	47		6.3X8	45	1840	2000
NSPE-HZ101M35V8X10.8NLBYF	100		8X10.8	28	2550	5000
NSPE-HZ151M35V10X10.8NLBYF	150		10X10.8	20	3490	5000
NSPE-HZ221M35V10X12.8NLBYF	220		10X12.8	15	4000	5000
NSPE-HZ180M40V6.3X6.3NLBYF	18	40	6.3X6.3	55	1510	2000
NSPE-HZ270M40V6.3X8NLBYF	27		6.3X8	48	1770	2000
NSPE-HZ560M40V8X10.8NLBYF	56		8X10.8	30	2450	5000
NSPE-HZ101M40V10X10.8NLBYF	100		10X10.8	21	3380	5000
NSPE-HZ121M40V10X12.8NLBYF	120		10X12.8	16	3870	5000

### RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Cap. $\mu$ F	100Hz	1KHz	10KHz	100KHz
C $\leq$ 4.7	0.03	0.30	0.65	1.00
5.6 ~ 33	0.05	0.32	0.67	1.00
> 33	0.10	0.35	0.70	1.00



## PART NUMBER SYSTEM

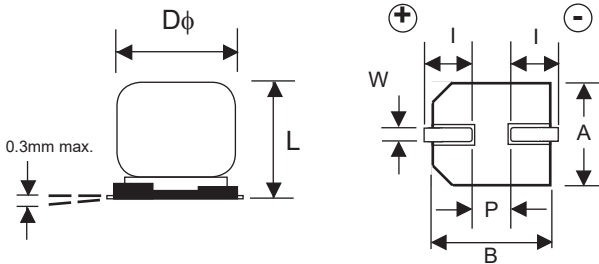


Suitable for automotive equipment, sourced to special production and inspection at TS-16949 certified production site

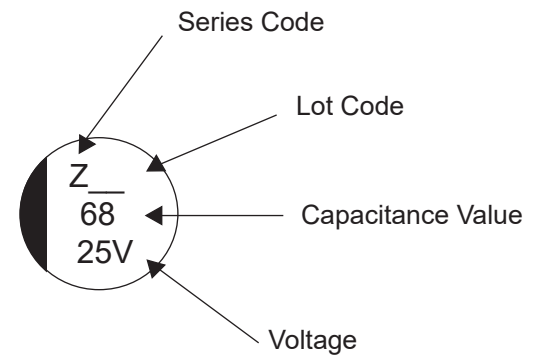
Code	Plating	Termination Type	Automotive	Reel Size
LB	Sn-Bi	Standard	No	15" Reel
LBY	Sn-Bi	Standard	Yes	15" Reel
LBW	Sn-Bi	Wide Terminations	No	15" Reel
LBWY	Sn-Bi	Wide Terminations	Yes	15" Reel

## DIMENSIONS (mm)

Case Size	$D\phi \pm 0.5$	L max.	A, B $\pm 0.2$	W	$l \pm 0.2$	$P \pm 0.2$
6.3X6.3	6.3	6.3	6.6	0.5 ~ 0.8	2.5	2.2
6.3X8	6.3	8.0	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

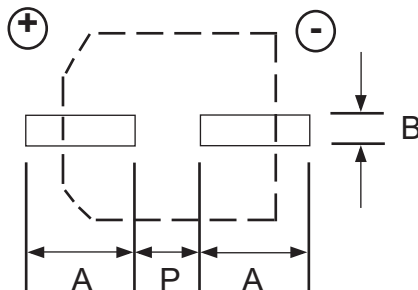


## Part Marking



## STANDARD TERMINATION LAND PATTERN DIM. (mm)

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



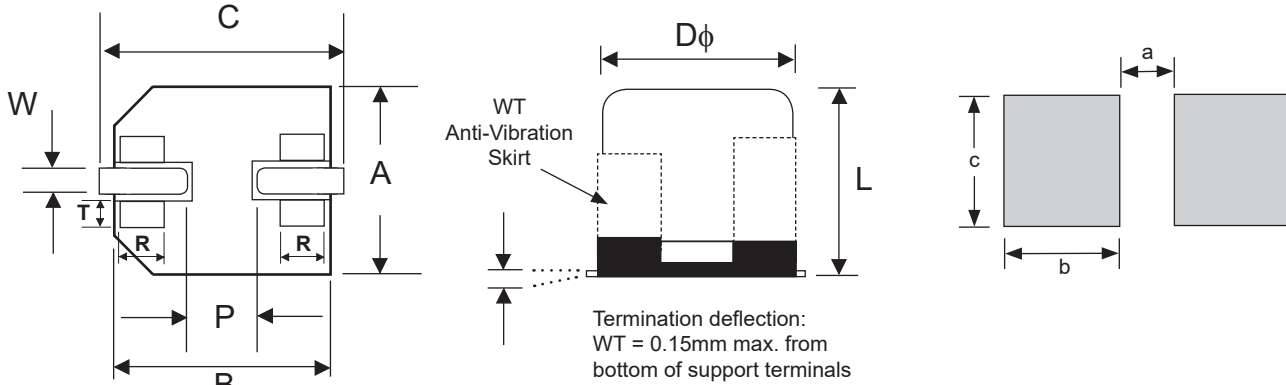
## W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	Dφ ±0.5	L max.	A, B ±0.2	C ±0.2	P	W	R	T
6.3X6.3	6.3	6.5	6.6	7.3	(2.2)	0.5 ~ 0.8	(1.7)	(0.7)
6.3X8	6.3	8.2	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)

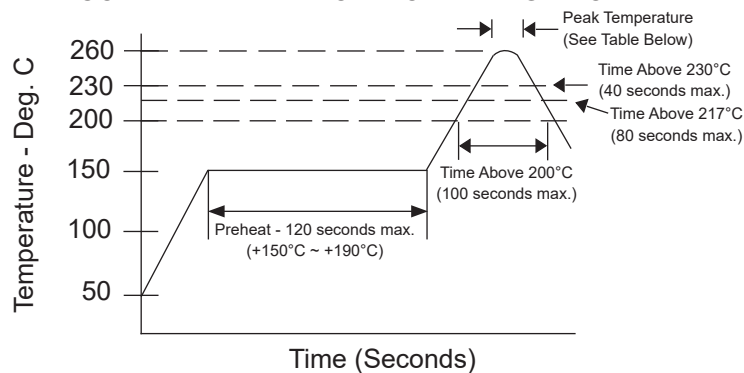
## W (WIDE TERMINATIONS) LAND PATTERN DIM. (mm)

Case Size	a	b	c
6.3X6.3	1.6	4.0	3.0
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

## RECOMMENDED REFLOW SOLDERING PROFILE\*



## PEAK TEMPERATURE AND DURATION

Diameter	Time above 200°C	Time above 217°C	Time above 230°C	Peak Temperature
6.3 ~ 10mm	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.

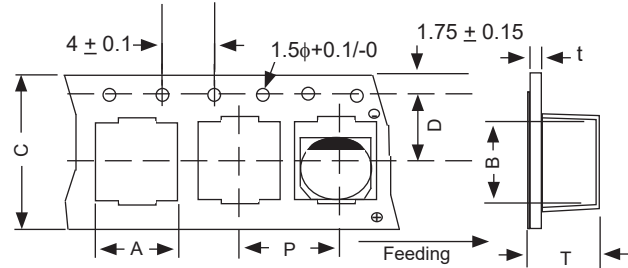


## TAPING SPECIFICATIONS (mm)

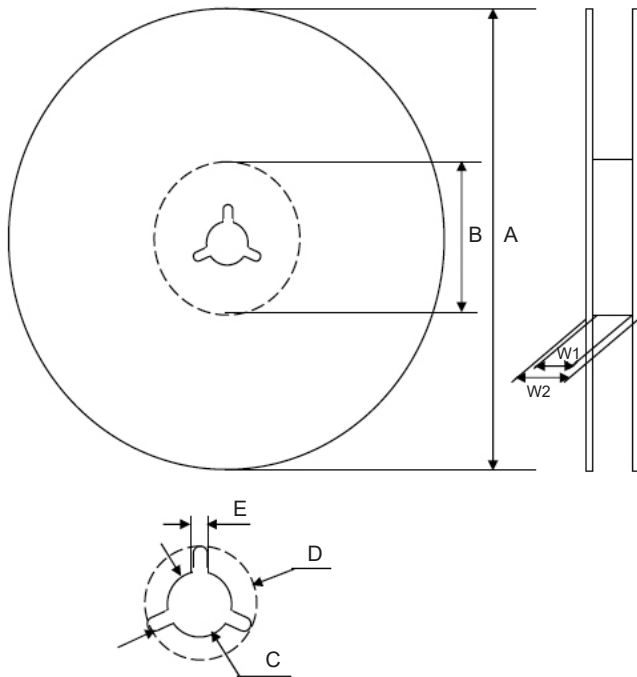
- Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

## CARRIER DIMENSIONS (mm)

Case Size	A ±0.5	B ±0.5	C ±0.3	D ±0.1	P ±0.1	T ±0.2	t max.
6.3X6.3	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
8X10.8	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) Plastic Reels (LB suffix)



### Dimensions (mm)

Case Size	Tape Width	W1	W2
6.3x6.1, 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
6.3x6.1, 6.3x8	16.0	φ380 ±2	φ80~105	φ13 ±0.5	φ21 ±1.0	2.0 ±0.5
8x10.5, 10x10.5, 10x12.5	24.0					

Color
Black

Case Size	Qty per Reel 15" (380mm)
6.3X6.1	1000
6.3X8	900
8X10.5	500
10X10.5	500
10X12.5	400

## 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)

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

