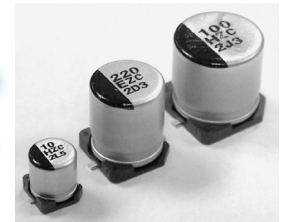


- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- HIGH TEMPERATURE RANGE (+125°C)
- LONG LIFE (4,000 HOURS)
- LOW ESR, HIGH RIPPLE CURRENT & LOW LEAKAGE
- 5x6.1 ~ 10x10.5mm CASE SIZES
- REFLOW SOLDERING RATED TO +260°C (ALL SIZES)
- **MEETS THE REQUIREMENTS OF AEC-Q200***

*Contact NIC for supporting test data

**High Temperature, Long Life
& Available with Wide
Anti-Vibration Terminations**



CHARACTERISTICS

Rated Voltage Range	25 ~ 63Vdc					
Rated Capacitance Range	10 ~ 330 μ F					
Operating Temp. Range	-55 ~ +125°C					
Capacitance Tolerance	\pm 20% (M)					
Max. Leakage Current After 2 Minutes @ 20°C	Less than 0.01CV or 3 μ A whichever is greater					
Working and Surge Voltage Ratings	W.V. (Vdc)	25	35	50	63	
	S.V. (Vdc)	32	44	63	79	
Tan δ @ 120Hz/20°C		0.14	0.12	0.10	0.08	
Load Life Test @ +125°C and Rated Voltage	Test Duration	All Case Sizes: 4,000 Hours				
	Capacitance Change	Within \pm 30% of initial measured value				
	Tan δ	Less than 200% of specified max. value				
	ESR	Less than 200% of specified max. value				
	Leakage Current	Less than specified max. value				
	Low Temperature ESR after endurance test ESR @ 100KHz/-40°C	ϕ 5x6.1	ϕ 6.3x6.1	ϕ 6.3x8	ϕ 8x10.5	ϕ 10x10.5
	2.0 Ω	1.4 Ω	0.8 Ω	0.4 Ω	0.3 Ω	

STANDARD PRODUCTS AND CASE SIZES D ϕ x L (mm)

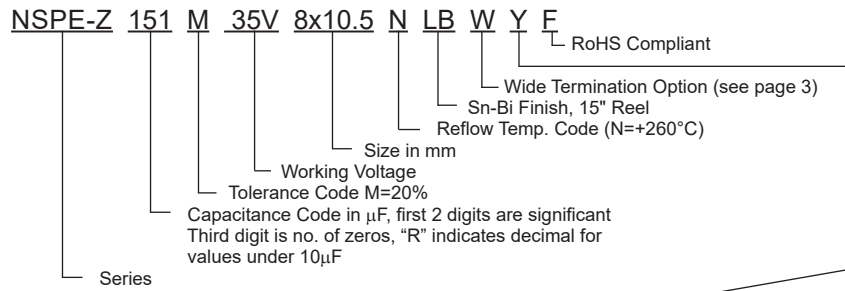
PART NUMBER	Case Size (D X L) mm	Cap. (μ F)	Working Voltage	Max. Tan δ 120Hz/20°C	Max. ESR (m Ω) @ 100KHz/20°C	Max. Ripple Current (mA rms) @ 100KHz/125°C	Load Life Hours (+125°C)
NSPE-Z330M25V5X6.1NLBYF	5X6.1	33	25	0.14	80	550	4,000
NSPE-Z560M25V6.3X6.1NLBYF	6.3X6.1	56		0.14	50	900	4,000
NSPE-Z101M25V6.3X8NLBYF	6.3x8	100		0.14	30	1400	4,000
NSPE-Z221M25V8X10.5NLBYF	8x10.5	220		0.14	27	1600	4,000
NSPE-Z331M25V10X10.5NLBYF	10x10.5	330		0.14	20	2000	4,000
NSPE-Z220M35V5X6.1NLBYF	5X6.1	22	35	0.12	100	550	4,000
NSPE-Z470M35V6.3X6.1NLBYF	6.3X6.1	47		0.12	60	900	4,000
NSPE-Z680M35V6.3X8NLBYF	6.3x8	68		0.12	35	1400	4,000
NSPE-Z151M35V8X10.5NLBYF	8x10.5	150		0.12	27	1600	4,000
NSPE-Z271M35V10X10.5NLBYF	10x10.5	270		0.12	20	2000	4,000
NSPE-Z100M50V5X6.1NLBYF	5X6.1	10	50	0.10	120	500	4,000
NSPE-Z220M50V6.3X6.1NLBYF	6.3X6.1	22		0.10	80	750	4,000
NSPE-Z330M50V6.3X8NLBYF	6.3X8	33		0.10	40	1100	4,000
NSPE-Z680M50V8X10.5NLBYF	8X10.5	68		0.10	30	1250	4,000
NSPE-Z101M50V10X10.5NLBYF	10X10.5	100		0.10	28	1600	4,000
NSPE-Z100M63V6.3X6.1NLBYF	6.3X6.1	10	63	0.08	120	700	4,000
NSPE-Z220M63V6.3X8NLBYF	6.3X8	22		0.08	80	900	4,000
NSPE-Z330M63V8X10.5NLBYF	8X10.5	33		0.08	40	1100	4,000
NSPE-Z560M63V10X10.5NLBYF	10X10.5	56		0.08	30	1400	4,000

For Automotive Applications See Part Numbering System

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	120Hz	1KHz	10KHz	\geq 100KHz
Correction Factor	0.10	0.30	0.60	1.00

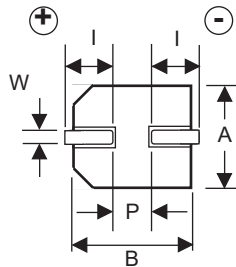
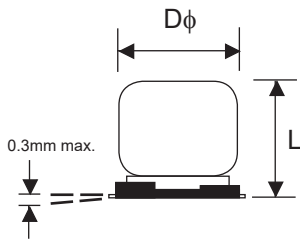
PART NUMBER SYSTEM



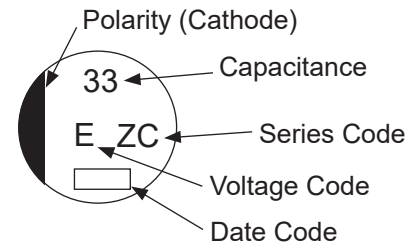
Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site

DIMENSIONS (mm)

Case Size	$D\phi \pm 0.5$	L max.	A, B ± 0.2	W	$l \pm 0.3$	$P \pm 0.2$
5x6.1	5	6.1	5.3	0.55 ~ 0.75	2.2	1.5
6.3x6.1	6.3	6.1	6.6	0.55 ~ 0.75	2.6	1.8
6.3x8	6.3	8.0	6.6	0.55 ~ 0.75	2.6	1.8
8x10.5	8.0	10.5	8.3	0.7 ~ 1.1	3.4	3.1
10x10.5	10	10.5	10.3	0.7 ~ 1.1	3.5	4.6



Part Marking

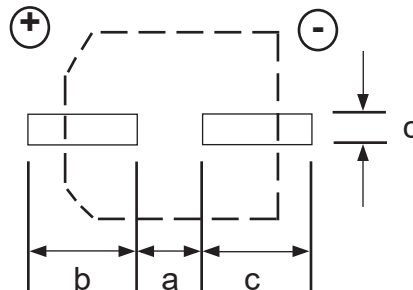


VOLTAGE RATING CODES

Code	Voltage Rating
E	25V
V	35V
H	50V
J	63V

LAND PATTERN DIM. (mm)

Case Dia.	a	b	c
5	1.5	2.8	1.6
6.3	1.8	3.2	1.6
8	3.1	4.0	2.0
10	4.6	4.1	2.0



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

WIDE TERMINATION DIM. (mm)

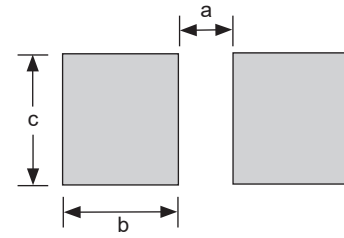
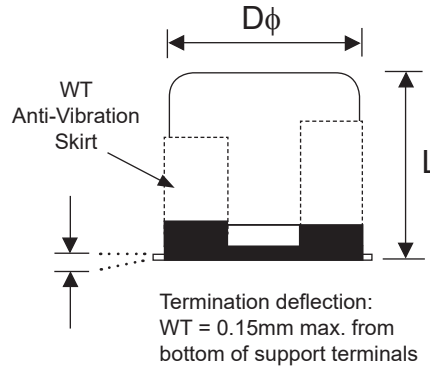
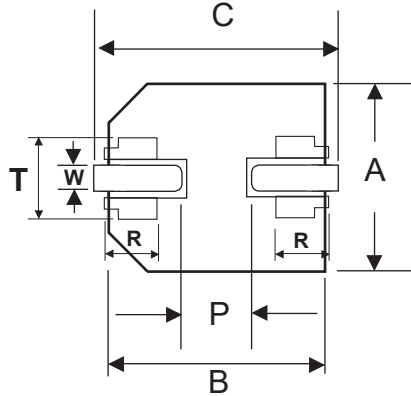
Case Size	D ϕ \pm 0.5	L max.	A, B	C max.	P	W	R	T
6.3x6.1	6.3	6.4	6.6 \pm 0.2	7.8	(2.2)	0.65 \pm 0.1	(1.3 \pm 0.2)	3.0 \pm 0.2
6.3x8	6.3	8.3	6.6 \pm 0.2	7.8	(2.2)	0.65 \pm 0.1	(1.3 \pm 0.2)	3.0 \pm 0.2
8 x 10.5WT	8.0	10.8	8.3 \pm 0.2	10.0	(3.1)	1.2 \pm 0.2	0.7 \pm 0.2	1.3 \pm 0.2
10 x 10.5WT	10.0	10.8	10.3 \pm 0.2	12.0	(4.6)	1.2 \pm 0.2	0.7 \pm 0.2	1.3 \pm 0.2

(Reference dimensions)

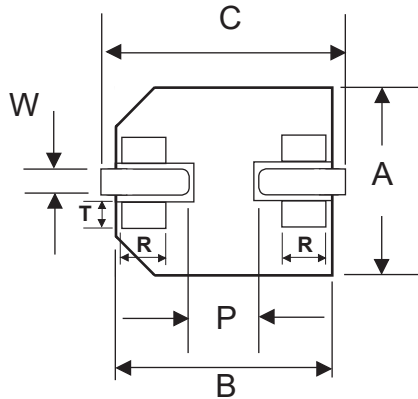
WIDE TERMINATION LAND PATTERN DIM. (mm)

Case Size	a	b	c
6.3x6.1	1.2	3.6	3.2
6.3x8	1.2	3.6	3.2
8x10.5	2.7	4.0	4.7
10x10.5	3.9	4.4	4.7

6.3mm DIAMETER WT STYLE TERMINATION

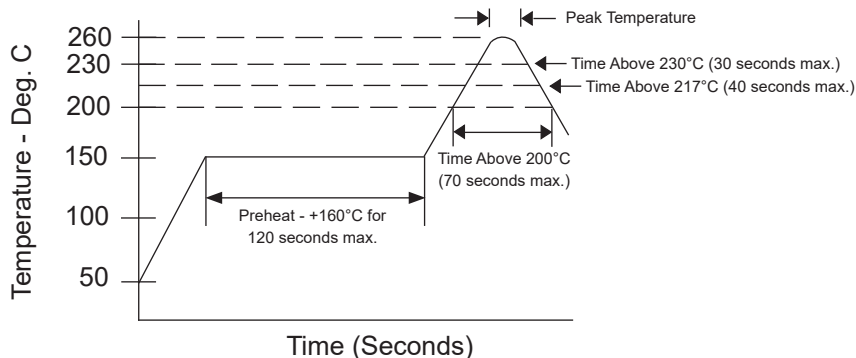


8 & 10mm DIAMETER WT STYLE TERMINATION



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

RECOMMENDED REFLOW SOLDERING PROFILE*



PEAK TEMPERATURE AND DURATION

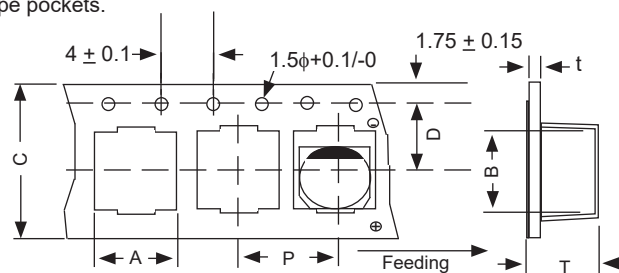
Diameter	Peak Temperature	Time	Time above 230°C	Time above 217°C	# of Reflow Passes
φ5 ~ 6.3mm	+260°C	≥+250°C 5 sec.	30 sec. max.	40 sec. max.	2
	+255°C	≥+250°C 10 sec.			2
φ8 ~ 10mm	+260°C	≥+250°C 5 sec.	30 sec. max.	40 sec. max.	1
	+245°C	≥+240°C 10 sec.			2

*Two reflow passes are permissible with a cool down to room temperature required between the first and second pass. Acceptable soldering methods are IR or IR & heated air.

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	B	C	D	P	T	t
5x6.1	±0.5	±0.5	±0.3	±0.1	±0.1	±0.2	max.
6.3x6.1	7.0	7.0	12.0	5.5	12.0	6.4	0.4
6.3x8	7.0	7.0	16.0	7.5	12.0	8.5	0.4
8x10.5	8.7	8.7	24.0	11.5	16.0	11.0	0.4
10x10.5	10.7	10.7	24.0	11.5	16.0	11.0	0.4



REEL DIMENSIONS (mm)

Case Size	W ±1.0	Qty per Reel
		15" (380mm)
5x6.1	14	1,000
6.3x6.1	18	1,000
6.3x8	18	900
8x10.5	26	500
10x10.5	26	500

