

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION
- LONG LIFE (7,000 ~ 10,000 HOURS)
- WIDE TEMPERATURE RANGE (-25°C ~ +105°C)
- DESIGNED FOR REFLOW SOLDERING

CHARACTERISTICS

Rated Voltage Range		6.3 ~ 50V					
Rated Capacitance Range		10 ~ 1000μF					
Operating Temperature Range		-25°C ~ +105°C					
Capacitance Tolerance		±20% (M)					
Max. Leakage Current After 2 Minutes at 20°C		0.01CV or 3μA whichever is greater					
Surge Voltage and Max. Tan δ	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V.(Vdc)	8	13	20	32	44	63
	Tan δ	0.32	0.28	0.26	0.16	0.14	0.14
Low Temperature Stability (Impedance Ratio @ 120Hz)		Z-25°C/Z+20°C	4	3	2	2	2
High Temperature Load Life at 105°C and Rated Working Voltage	Load Life Hours	φD ≤ 6.3mm = 7,000 φD ≥ 8 = 10,000 hours					
	Capacitance Change	Within ±30% of initial measured value					
	Tan δ	Less than 300% of specified value					
	Leakage Current	Less than the specified value					

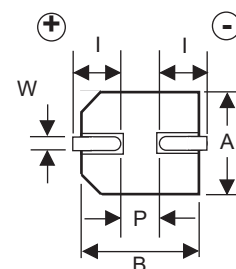
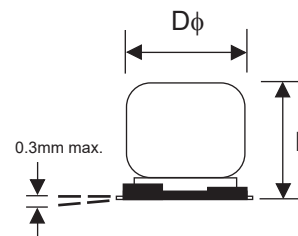


STANDARD PRODUCT AND SIZE DφxL (mm)

Cap. (μF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
10	100	-	-	-	-	5X7.3	-
22	220	-	-	5X7.3	5X7.3	5X7.3	6.3X8.7
33	330	-	5X7.3	-	6.3X7.3	6.3X8.7	8X10.5
47	470	5X7.3	-	6.3X7.3	6.3X7.3	6.3X8.7	8X10.5
100	101	6.3X7.3	-	6.3X7.3	6.3X8.7	8X10.5	10X10.5
150	151	-	6.3X7.3	6.3X8.7	8X10.5	-	-
220	221	6.3X8.7	-	6.3X8.7	8X10.5	10X10.5	-
330	331	6.3X8.7	-	8X10.5	10X10.5	-	-
470	471	8X10.5	-	10X10.5	-	-	-
1000	102	10X10.5	-	-	-	-	-

DIMENSIONS (mm)

Case Size	Dφ±0.5	L max.	A/B±0.2	I ± 0.2	W	P±0.2
5x7.3	5	7.3	5.3	2.2	0.5 ~ 0.8	1.4
6.3x7.3	6.3	7.3	6.6	2.5	0.5 ~ 0.8	2.2
6.3x8.7	6.3	8.7	6.6	2.5	0.5 ~ 0.8	2.2
8x10.5	8	10.5	8.3	2.9	0.7 ~ 1.1	3.2
10x10.5	10	10.5	10.3	3.2	0.7 ~ 1.4	4.6



PART NUMBER SYSTEM

NAZV 220 M 25V 5x7.3 L LB W F

- RoHS Compliant
- Wide Termination Option (8 & 10mm Dia.)
- LB=Sn-Bi Finish & 380mm (15") Reel
- Reflow Temp. L = +250°C
- Size in mm
- Working Voltage
- Tolerance Code M=20%
- Capacitance Code in μF, first 2 digits are significant
- Third digit is no. of zeros, "R" indicates decimal for values under 10μF
- Series

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

STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple Current (mA) +105°C/100KHz	Max. Z (Ω) +20°C/100KHz	Load Life Hours @ +105°C
NAZV470M6.3V5X7.3LLBF	47	6.3	0.32	95	2.2	7,000
NAZV101M6.3V6.3X7.3LLBF	100		0.32	140	1.1	7,000
NAZV221M6.3V6.3X8.7LLBF	220		0.32	230	1.0	7,000
NAZV331M6.3V6.3X8.7LLBF	330		0.32	230	1.0	7,000
NAZV471M6.3V8X10.5LLBF	470		0.32	600	0.22	10,000
NAZV102M6.3V10X10.5LLBF	1000		0.32	850	0.16	10,000
NAZV330M10V5X7.3LLBF	33	10	0.28	95	2.2	7,000
NAZV151M10V6.3X7.3LLBF	150		0.28	140	1.1	7,000
NAZV220M16V5X7.3LLBF	22	16	0.26	95	2.2	7,000
NAZV470M16V6.3X7.3LLBF	47		0.26	140	1.1	7,000
NAZV101M16V6.3X7.3LLBF	100		0.26	140	1.1	7,000
NAZV151M16V6.3X8.7LLBF	150		0.26	230	1.0	7,000
NAZV221M16V6.3X8.7LLBF	220		0.26	230	1.0	7,000
NAZV331M16V8X10.5LLBF	330		0.26	600	0.22	10,000
NAZV471M16V10X10.5LLBF	470		0.26	850	0.16	10,000
NAZV220M25V5X7.3LLBF	22	25	0.16	95	2.2	7,000
NAZV330M25V6.3X7.3LLBF	33		0.16	140	1.1	7,000
NAZV470M25V6.3X7.3LLBF	47		0.16	140	1.1	7,000
NAZV101M25V6.3X8.7LLBF	100		0.16	230	1.0	7,000
NAZV151M25V8X10.5LLBF	150		0.16	600	0.22	10,000
NAZV221M25V8X10.5LLBF	220		0.16	600	0.22	10,000
NAZV331M25V10X10.5LLBF	330		0.16	850	0.16	10,000
NAZV100M35V5X7.3LLBF	10	35	0.14	95	2.2	7,000
NAZV220M35V5X7.3LLBF	22		0.14	95	2.2	7,000
NAZV330M35V6.3X8.7LLBF	33		0.14	230	1.0	7,000
NAZV470M35V6.3X8.7LLBF	47		0.14	230	1.0	7,000
NAZV101M35V8X10.5LLBF	100		0.14	600	0.22	10,000
NAZV221M35V10X10.5LLBF	220		0.14	850	0.16	10,000
NAZV220M50V6.3X8.7LLBF	22	50	0.14	100	1.80	7,000
NAZV330M50V8X10.5LLBF	33		0.14	350	0.53	10,000
NAZV470M50V8X10.5LLBF	47		0.14	350	0.53	10,000
NAZV101M50V10X10.5LLBF	100		0.14	850	0.35	10,000

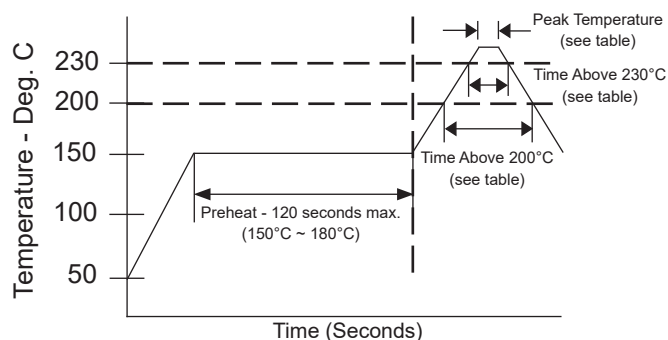
RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Cap. (μF)	Frequency			
	120Hz	1KHz	10KHz	100KHz
10 ~ 22	0.50	0.80	0.90	1.00
33 ~ 150	0.65	0.85	0.92	1.00
220 ~ 1000	0.70	0.85	0.95	1.00

Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
www.niccomp.com/RSL

PEAK REFLOW TEMPERATURE AND DURATION

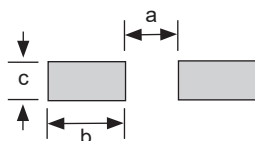
Diameter	Time above 200°C	Time above 230°C	Peak Temperature 5 seconds
5 ~ 6.3mm ϕ	70 sec. max.	40 sec. max.	250°C
8 ~ 10mm ϕ	60 sec. max.	20 sec. max.	250°C



Capacitors can withstand two times reflow at the above conditions. Second reflow shall be at least one hour after natural cool to room temperature.

RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
5x7.3	1.4	3.0	1.8
6.3x7.3 6.3x8.7	1.8	3.6	1.8
8x10.5	2.8	4.1	2.1
10x10.5	4.3	4.4	2.5



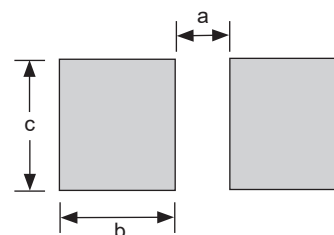
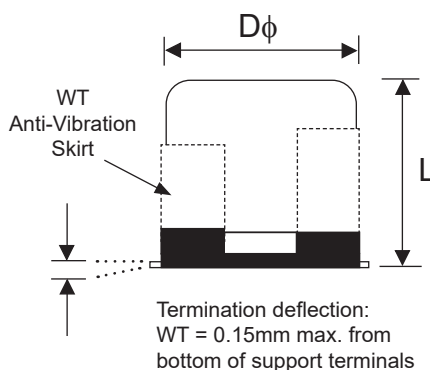
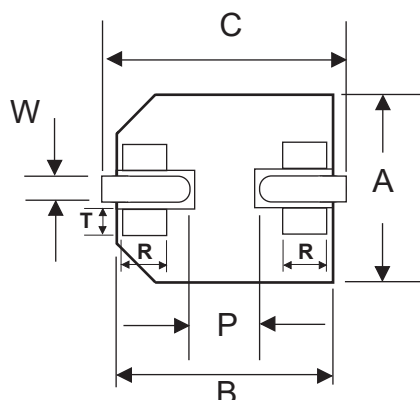
W (WIDE TERMINATIONS) COMPONENT DIM. (mm)

Case Size	D ϕ $\pm$ 0.5	L max.	A, B $\pm$ 0.2	C $\pm$ 0.2	P	W	R	T
8x10.5	8.0	11.0	8.3	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10x10.5	10.0	11.0	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
8x10.5	2.5	4.5	4.7
10x10.5	3.8	4.8	4.7



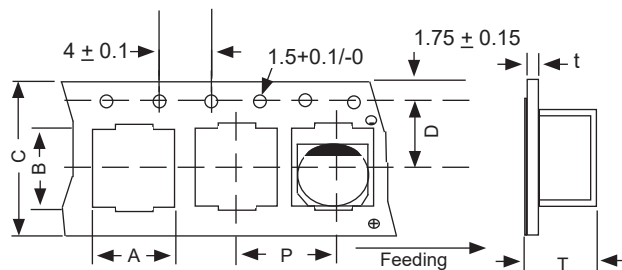
W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log
Δ Capacitance	Within $\pm$ 10% of initial value
Tangent of Loss	$\leq$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

EMBOSSED CARRIER DIMENSIONS (mm)

Case Size	A ± 0.3	B ± 0.3	C ± 0.3	D ± 0.1	P ± 0.1	T ± 0.2	t ± 0.1
5x7.3	5.7	5.7	12.0	5.5	12.0	7.1	0.4
6.3x7.3	7.0	7.0	16.0	7.5	12.0	7.5	0.4
6.3x8.7	7.0	7.0	16.0	7.5	12.0	9.2	0.4
8x10.5	8.7	8.7	24.0	11.5	16.0	11.1	0.4
10x10.5	10.7	10.7	24.0	11.5	16.0	11.2	0.4

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.

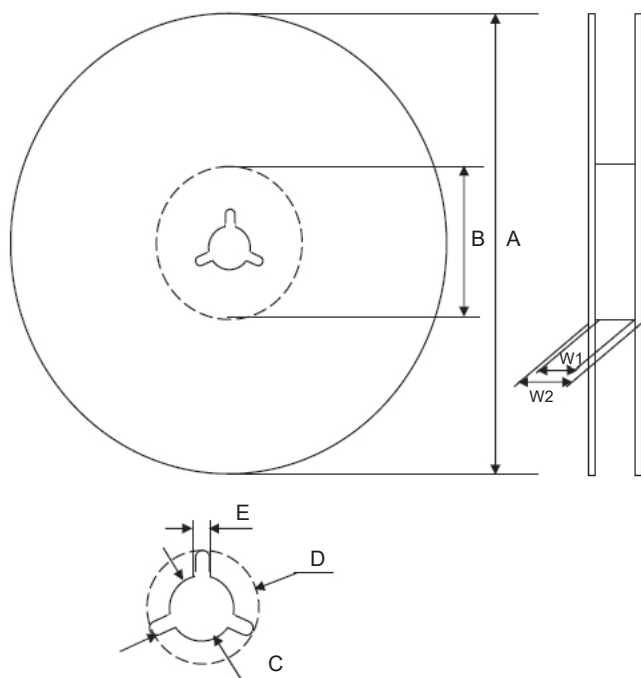


V-Chip 15" (380mm) Reels (LB suffix)

Dimensions (mm)

Case Size	Tape Width	W1	W2
5x7.3	12.0	12.5 ~ 14.0	15.5 ~ 20.0
6.3x7.3, 6.3x8.7	16.0	16.5 ~ 18.0	19.5 ~ 24.0
8x10.5, 10x10.5	24.0	24.5 ~ 26.0	27.5 ~ 32.0

Case Size	Tape Width	A	B	C	D	E
5x7.3	12.0	φ380 ±2	φ80~105	φ13 ±0.5	φ21 ±1.0	2.0 ±0.5
6.3x7.3, 6.3x8.7	16.0					
8x10.5, 10x10.5	24.0					



Case Size	Reel Quantity 15" (380mm)
5x7.3	1,000
6.3x7.3	1,000
6.3x8.7	800
8x10.5	500
10x10.5	500