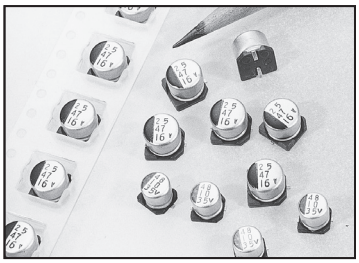
NACX Series
Surface Mount Aluminum Electrolytic Capacitors

FEATURES
- CYLINDRICAL V-CHIP CONSTRUCTION
- VERY LOW IMPEDANCE AT 100KHz
- WIDE TEMPERATURE RANGE (-55 +105°C)
- MAXIMUM 5.5mm HEIGHT
- ANTI-SOLVENT (2 MINUTES)
- DESIGNED FOR REFLOW SOLDERING
- MEETS THE REQUIREMENTS OF AEC-Q200*

*Contact NIC for supporting test data

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



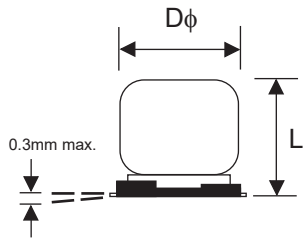
CHARACTERISTICS

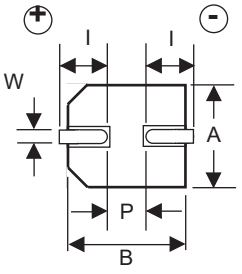
Rated Voltage Range		6.3 ~ 63V						
Rated Capacitance Range		1.0 ~ 150µF						
Operating Temperature Range		-55 ~ +105°C						
Capacitance Tolerance		±20% (M), ±10% (K)*						
Max. Leakage Current After 2 Minutes at 20°C		0.01CV or 3µA whichever is greater						
Surge Voltage and Max. Tan δ	W.V. (Vdc)	6.3	10	16	25	35	50	63
	S.V.(Vdc)	8	13	20	32	44	63	79
	Tan δ	0.24	0.20	0.16	0.14	0.12	0.12	0.12
Low Temperature Stability (Impedance Ratio @ 120Hz)	Z-25°C/Z+20°C	3	2	2	2	2	2	2
	Z-55°C/Z+20°C	5	4	4	3	3	3	3
High Temperature Load Life at 105°C and Rated Working Voltage 1,000 hours	Capacitance Change	Within ±25% of initial measured value						
	Tan δ	Less than 200% of specified value						
	Leakage Current	Less than the specified value						

* Optional ± 10% (K) Tolerance available on most values. Contact factory for availability.

STANDARD PRODUCT AND SIZE DϕxL (mm)

Cap. (µF)	Code	Working Voltage (Vdc)						
		6.3	10	16	25	35	50	63
1.0	1R0	-	-	-	-	4x5.5	4x5.5	4x5.5
2.2	2R2	-	-	-	-	4x5.5	4x5.5	4x5.5
3.3	3R3	-	-	-	-	4x5.5	4x5.5	5x5.5
4.7	4R7	-	-	-	4x5.5	4x5.5	5x5.5	5x5.5
10	100	-	-	4x5.5	5x5.5	5x5.5	6.3x5.5	6.3x5.5
22	220	4x5.5	5x5.5	5x5.5	6.3x5.5	6.3x5.5	-	-
33	330	5x5.5	5x5.5	6.3x5.5	6.3x5.5	-	-	-
47	470	5x5.5	6.3x5.5	6.3x5.5	6.3x5.5	-	-	-
100	101	6.3x5.5	6.3x5.5	6.3x5.5	-	-	-	-
220	221	6.3x5.5	-	-	-	-	-	-





DIMENSIONS (mm)

Case Size	Dϕ±0.5	L max.	A/B±0.2	I ± 0.2	W	P±0.2
4x5.5	4.0	5.5	4.3	1.8	0.5 ~ 0.8	1.0
5x5.5	5.0	5.5	5.3	2.1	0.5 ~ 0.8	1.4
6.3x5.5	6.3	5.5	6.6	2.5	0.5 ~ 0.8	2.2

PART NUMBER SYSTEM

NACX 100 M 25V 5x5.5 TR 13 Y F

- F — RoHS Compliant 97% Sn (min.), 3% Bi (max.)
- Y — Optional: Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site
- 13 — Reel Size (See Standard Values Table)
- TR — Tape & Reel
- 5x5.5 — Size in mm
- 25V — Working Voltage
- M — Tolerance Code M=20%
- 100 — Capacitance Code in µF, first 2 digits are significant. Third digit is no. of zeros, "R" indicates decimal for values under 10µF
- NACX — Series

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STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number	Cap. (µF)	W.V. (Vdc)	Dissipaton Factor (Tan δ)	Max. Ripple Current (mA) +105°C/100kHz	Max. Z (Ω) +20°C/100kHz	Load Life Hours @ +105°C
NACX220M6.3V4x5.5TR15F	22	6.3	0.24	68	2.3	1,000
NACX330M6.3V5x5.5TR13F	33		0.24	105	1.1	1,000
NACX470M6.3V5x5.5TR13F	47		0.24	105	1.1	1,000
NACX101M6.3V6.3x5.5TR13F	100		0.24	155	0.6	1,000
NACX221M6.3V6.3x5.5TR13F	220		0.24	155	0.6	1,000
NACX220M10V5x5.5TR13F	22	10	0.20	105	1.1	1,000
NACX330M10V5x5.5TR13F	33		0.20	105	1.1	1,000
NACX470M10V6.3x5.5TR13F	47		0.20	155	0.6	1,000
NACX101M10V6.3x5.5TR13F	100		0.20	155	0.6	1,000
NACX100M16V4x5.5TR15F	10	16	0.16	68	2.3	1,000
NACX220M16V5x5.5TR13F	22		0.16	105	1.1	1,000
NACX330M16V6.3x5.5TR13F	33		0.16	155	0.6	1,000
NACX470M16V6.3x5.5TR13F	47		0.16	155	0.6	1,000
NACX101M16V6.3x5.5TR13F	100		0.16	155	0.6	1,000
NACX4R7M25V4x5.5TR15F	4.7	25	0.14	68	2.3	1,000
NACX100M25V5x5.5TR13F	10		0.14	105	1.1	1,000
NACX220M25V6.3x5.5TR13F	22		0.14	155	0.6	1,000
NACX330M25V6.3x5.5TR13F	33		0.14	155	0.6	1,000
NACX470M25V6.3x5.5TR13F	47		0.14	155	0.6	1,000
NACX1R0M35V4x5.5TR15F	1.0	35	0.12	68	3.1	1,000
NACX2R2M35V4x5.5TR15F	2.2		0.12	68	2.9	1,000
NACX3R3M35V4x5.5TR15F	3.3		0.12	68	2.7	1,000
NACX4R7M35V4x5.5TR15F	4.7		0.12	68	2.3	1,000
NACX100M35V5x5.5TR13F	10		0.12	105	1.1	1,000
NACX220M35V6.3x5.5TR13F	22		0.12	155	0.6	1,000
NACX1R0M50V4x5.5TR13F	1.0	50	0.12	37	7.4	1,000
NACX2R2M50V4x5.5TR15F	2.2		0.12	45	6.6	1,000
NACX3R3M50V4x5.5TR15F	3.3		0.12	52	5.4	1,000
NACX4R7M50V5x5.5TR13F	4.7		0.12	75	2.9	1,000
NACX100M50V6.3x5.5TR13F	10		0.12	120	1.3	1,000
NACX1R0M63V4x5.5TR15F	1.0	63	0.12	20	8.0	1,000
NACX2R2M63V4x5.5TR15F	2.2		0.12	24	8.0	1,000
NACX3R3M63V5x5.5TR13F	3.3		0.12	40	3.5	1,000
NACX4R7M63V5x5.5TR13F	4.7		0.12	40	3.5	1,000
NACX100M63V6.3x5.5TR13F	10		0.12	65	1.6	1,000

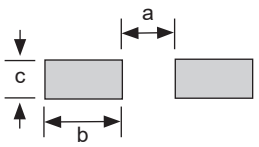
For Automotive Equipment, see part number system

RIPPLE CURRENT FREQUENCY CORRECTION FACTORS

Capacitance (µF)	Frequency			
	100Hz ≤ F < 1KHz	1KHz ≤ F < 10KHz	10KHz ≤ F < 100KHz	100KHz ≤ F
C ≤ 1.0	0.70	0.55	0.85	1.00
1 < C ≤ 4.7	0.25	0.60	0.90	1.00
4.7 < C ≤ 47	0.45	0.75	0.92	1.00
47 < C	0.60	0.85	0.92	1.00

RECOMMENDED LAND PATTERN DIMENSIONS (mm)

Case Size	a	b	c
4 ϕ	1.0	2.6	1.8
5 ϕ	1.4	3.0	1.8
6.3 ϕ	2.1	3.5	1.8



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**

Review & Compare Reflow Soldering Heat Limits
V-chip SMT Aluminum Electrolytic Capacitors
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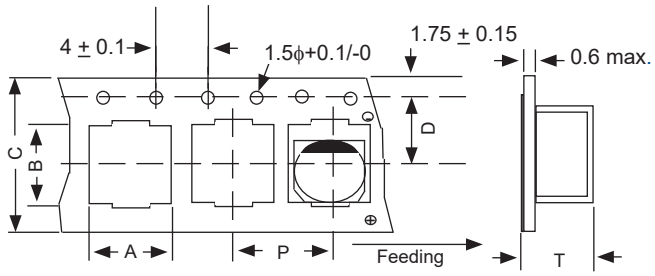
CARRIER TAPE

Case Size	A ±0.2	B ±0.2	C ±0.3	D ±0.1	P ±0.1	T ±0.2
4 x 5.5	4.7	4.7	12.0	5.5	8.0	5.8
5 x 5.5	5.7	5.7	12.0	5.5	12.0	5.8
6.3 x 5.5	7.0	7.0	16.0	7.5	12.0	5.8

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.

CARRIER



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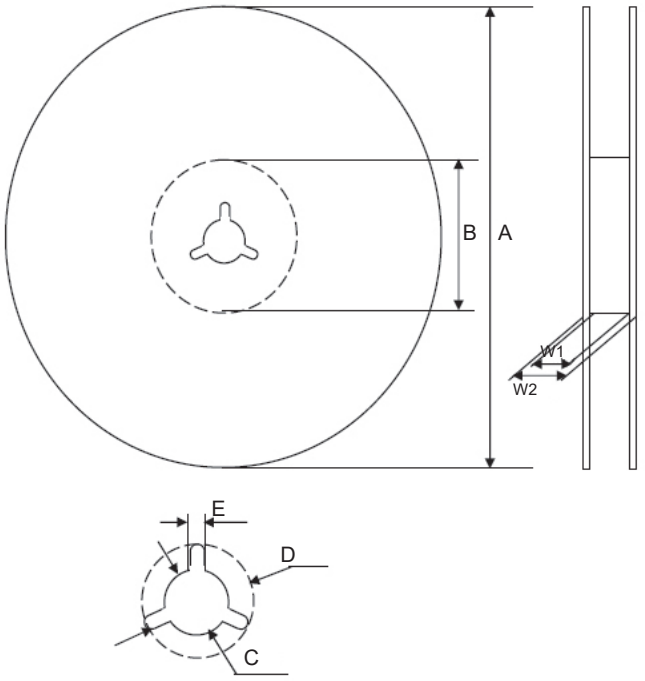
V-Chip 380mm Reels (TR15 suffix)

Dimensions (mm)

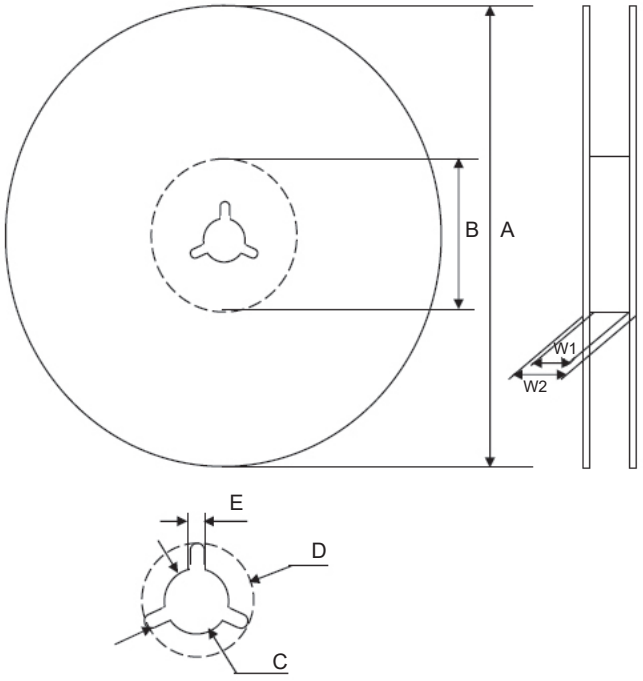


Case Size	Tape Width	W1	W2
4x5.5, 5x5.5	12.0	12.5 ~ 14.0	15.5 ~ 20.0
6.3x5.5	16.0	16.5 ~ 18.0	19.5 ~ 24.0

Case Size	Tape Width	A	B	C	D	E
4x5.5, 5x5.5	12.0	ϕ380 ±2	ϕ80~105	ϕ13 ±0.5	ϕ21 ±1.0	2.0 ±0.5
6.3x5.5	16.0					

V-Chip 13" (330mm) Reels (TR13 suffix)

Dimensions (mm)



Case Size	Tape Width	W1	W2
4x5.5, 5x5.5	12.0	12.4 ~ 14.4	15.5 ~ 20.0
6.3x5.5	16.0	16.4 ~ 18.4	19.5 ~ 24.0

Case Size	Tape Width	A	B	C	D	E
4x5.5, 5x5.5	12.0	ϕ330 ±2.0	ϕ50~105	ϕ13 ±0.5	ϕ21 ±1.0	2.0 ±0.5
6.3x5.5	16.0					

Case Size	Quantity Per Reel	
	13" Reel	15" Reel
4x5.5	N/A	2,000 pcs
5x5.5	1,000 pcs	1,000 pcs
6.3x5.5	1,000 pcs	1,000 pcs

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