Jameco Part Number 2016305

Surface Mount Aluminum Electrolytic Capacitors NACZ Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- VERY LOW IMPEDANCE & HIGH RIPPLE CURRENT AT 100KHz
- SUITABLE FOR DC-DC CONVERTER, DC-AC INVERTER, ETC.
- NEW EXPANDED CV RANGE, UP TO 6800µF
- NEW HIGH TEMPERATURE REFLOW "M1" VERSION
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

CHARACTERISTICS

Rated Voltage Rating	6.3 ~ 50Vdc
Rated Capacitance Range	4.7 ~ 6800µF
Operating Temp. Range	-55 ~ +105°C
Capacitance Tolerance	±20% (M)
Max. Leakage Current After 2 Miuntes @ 20°C	0.01CV 0r 3µA, whichever is greater

LOW IMPEDANCE AT HIGH FREQUENCY
INDUSTRY STANDARD STYLE FOR SWITCHERS AND CONVERTERS

LOW ESR COMPONENT
LIQUID ELECTROLYTE
For Performance Data see www.LowESR.com

Tan δ @ 120Hz/20°C	W.V. (Vdc)		6.3	10	16	25	35	50
	S.V. (Vdc)		8.0	13	20	32	44	63
	ϕ4 ~ ϕ6.3mm Dia.		0.24	0.20	0.16	0.14	0.12	0.10
	ϕ8 ~ ϕ16mm Dia.	C ≤ 1000µF	0.28	0.24	0.20	0.16	0.14	0.14
		C = 1500µF	0.29	0.25	0.21	-	0.14	-
		C = 2200µF	0.30	0.26	-	0.18	-	-
		C = 3300µF	0.32	-	0.24	-	-	-
		C = 4700µF	0.34	0.30	-	-	-	-
		C = 6800µF	0.38	-	-	-	-	-
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)		6.3	10	16	25	35	50
	Z-40°C/Z+20°C		3	2	2	2	2	2
	Z-55°C/Z+20°C		5	4	4	3	3	3
Load Life Test @ 105°C 4 ~ 6mm Dia. 1,000 hours 8 ~ 12.5mm Dia. 2,000 hours	Capacitance Change		Within ±25% of initial measured value					
	Tan δ		Less than ±200% of the specified maximum value					
	Leakage Current		Less than the specified maximum value					

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STANDARD PRODUCT AND CASE SIZE TABLE Dϕ x L (mm)

Cap (µF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
4.7	4R7	-	-	-	-	4x6.3	4x6.3
10	100	-	-	-	4x6.3*	5x6.3*	6.3x6.3*
15	150	-	-	4x6.3	6x6.3	5x6.3*	-
22	220	-	4x6.3	5x6.3*	5x6.3	5x6.3*	6.3x6.3*
27	270	4x6.3*	-	-	-	-	-
33	330	-	5x6.3	-	6.3x6.3	6.3x6.3*	6.3X8*
47	470	5x6.3	-	6.3x6.3	6.3x6.3	6.3x6.3*	6.3x8*
56	560	5x6.3*	-	-	6.3x6.3	-	-
68	680	-	6.3x6.3	6.3x6.3*	6.3x6.3	6.3x8*	8x10.5*
100	101	6.3x6.3*	-	6.3x6.3*	6.3x8*	8x10.5	8x10.5*
120	121	-	6.3x6.3	-	-	-	-
150	151	6.3x6.3	6.3x6.3	6.3x8*	8x10.5*	8x10.5* 10x8	10x10.5*
220	221	6.3x6.3	6.3x8	6.3x8*	8x10.5* 10x8	8x10.5	10x10.5
330	331	6.3x8*	8x10.5	8x10.5* 10x8	8x10.5	10x10.5	12.5x14
390	391	-	-	-	-	-	12.5x14
470	471	8x10.5	8x10.5 10x8	8x10.5	10x10.5*	12.5x14	16x17
680	681	8x10.5 10x8*	-	10x10.5	-	12.5x14	-
1000	102	8x10.5*	10x10.5	-	12.5x14	-	16x17
1500	152	10x10.5*	-	12.5x14	-	16x17	-
2200	222	-	12.5x14	-	16x17	-	-
3300	332	12.5x14	-	16x17	-	-	-
4700	472	-	16x17	-	-	-	-
6800	682	16x17	-	-	-	-	-

Denotes New Value

Surface Mount Aluminum Electrolytic Capacitors NACZ Series

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. Impedance (Ω) +20°C, 100KHz	Load Life Hours @ +105°C
NACZ270M6.3V4X6.3TR13F	27	6.3	0.24	80	1.80	1,000
NACZ470M6.3V5X6.3TR13F	47		0.24	150	0.76	1,000
NACZ560M6.3V5X6.3TR13F	56		0.24	150	0.76	1,000
NACZ101M6.3V6.3X6.3TR13F	100		0.24	230	0.44	1,000
NACZ151M6.3V6.3X6.3TR13F	150		0.24	230	0.44	1,000
NACZ221M6.3V6.3X6.3TR13F	220		0.24	230	0.44	1,000
NACZ331M6.3V6.3X8TR13F	330		0.24	280	0.34	1,000
NACZ471M6.3V8X10.5TR13F	470		0.28	450	0.17	2,000
NACZ681M6.3V8X10.5TR13F NACZ681M6.3V10X8TR13F	680		0.28	450	0.17	2,000
NACZ102M6.3V8X10.5TR13F	1000		0.28	450	0.17	2,000
NACZ152M6.3V10X10.5TR13F	1500		0.29	670	0.09	2,000
NACZ332M6.3V12.5X14TR13F	3300		0.32	900	0.066	2,000
NACZ682M6.3V16X17TR13F	6800		0.38	1250	0.052	2,000
NACZ220M10V4X6.3TR13F	22	10	0.20	80	1.80	1,000
NACZ330M10V5X6.3TR13F	33		0.20	150	0.76	1,000
NACZ680M10V6.3X6.3TR13F	68		0.20	230	0.44	1,000
NACZ121M10V6.3X6.3TR13F	120		0.20	230	0.44	1,000
NACZ151M10V6.3X6.3TR13F	150		0.20	230	0.44	1,000
NACZ221M10V6.3X6.3TR13F	220		0.20	280	0.34	1,000
NACZ331M10V8X10.5TR13F	330		0.24	450	0.17	2,000
NACZ471M10V8X10.5TR13F NACZ471M10V10X8TR13F	470		0.24	450	0.17	2,000
NACZ102M10V10X10.5TR13F	1000		0.24	670	0.09	2,000
NACZ222M10V12.5X14TR13F	2200		0.26	900	0.066	2,000
NACZ472M10V16X17TR13F	4700		0.30	1250	0.052	2,000
NACZ150M16V4X6.3TR13F	15	16	0.16	80	1.80	1,000
NACZ220M16V5X6.3TR13F	22		0.16	150	0.76	1,000
NACZ470M16V6.3X6.3TR13F	47		0.16	230	0.44	1,000
NACZ680M16V6.3X6.3TR13F	68		0.16	230	0.44	1,000
NACZ101M16V6.3X6.3TR13F	100		0.16	230	0.44	1,000
NACZ151M16V6.3X8TR13F	150		0.16	280	0.34	1,000
NACZ221M16V6.3X8TR13F	220		0.16	280	0.34	1,000
NACZ331M16V8X10.5TR13F NACZ331M16V10X8TR13F	330		0.20	450	0.17	2,000
NACZ471M16V8X10.5TR13F	470		0.20	450	0.17	2,000
NACZ681M16V10X10.5TR13F	680		0.20	670	0.09	2,000
NACZ152M16V12.5X14TR13F	1500		0.21	900	0.066	2,000
NACZ332M16V16X17TR13F	3300		0.24	1250	0.052	2,000
NACZ100M25V4X6.3TR13F	10	25	0.14	80	1.80	1,000
NACZ150M25V6X6.3TR13F	15		0.14	150	0.76	1,000
NACZ220M25V5X6.3TR13F	22		0.14	150	0.76	1,000
NACZ330M25V6.3X6.3TR13F	33		0.14	230	0.44	1,000
NACZ470M25V6.3X6.3TR13F	47		0.14	230	0.44	1,000
NACZ560M25V6.3X6.3TR13F	56		0.14	230	0.44	1,000
NACZ680M25V6.3X6.3TR13F	68		0.14	230	0.44	1,000
NACZ101M25V6.3X8TR13F	100		0.14	280	0.34	1,000
NACZ151M25V8X10.5TR13F	150		0.16	450	0.17	2,000
NACZ221M25V8X10.5TR13F NACZ221M25V10X8TR13F	220		0.16	450	0.17	2,000
NACZ331M25V8X10.5TR13F	330		0.16	450	0.17	2,000
NACZ471M25V10X10.5TR13F	470		0.16	670	0.09	2,000
NACZ102M25V12.5X14TR13F	1000		0.16	900	0.066	2,000
NACZ222M25V16X17TR13F	2200		0.18	1250	0.052	2,000
NACZ4R7M35V4X6.3TR13F	4.7	35	0.12	80	1.80	1,000
NACZ100M35V5X6.3TR13F	10		0.12	150	0.76	1,000
NACZ150M35V5X6.3TR13F	15		0.12	150	0.76	1,000
NACZ220M35V5X6.3TR13F	22		0.12	150	0.76	1,000
NACZ330M35V6.3X6.3TR13F	33		0.12	230	0.44	1,000
NACZ470M35V6.3X6.3TR13F	47		0.12	230	0.44	1,000

*See part numbering system regarding how to order the "M1" high temperature reflow version

Surface Mount Aluminum Electrolytic Capacitors NACZ Series

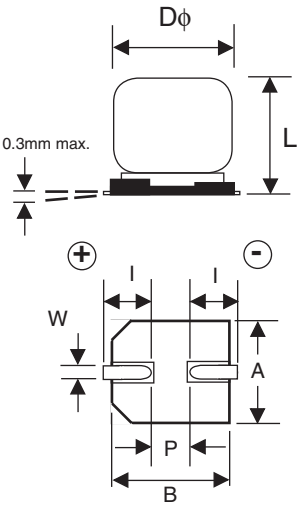
STANDARD VALUES, CASE SIZES AND SPECIFICATIONS

NIC Part Number*	Cap. (μF)	W.V. (Vdc)	Dissipaton Factor (Tan δ)	Max. Ripple Current (mA) +105°C, 100KHz	Max. Impedance (Ω) +20°C, 100KHz	Load Life Hours @ +105°C
NACZ680M35V6.3X8TR13F	68	35	0.12	280	0.34	1,000
NACZ101M35V8X10.5TR13F	100		0.14	450	0.17	2,000
NACZ151M35V8X10.5TR13F	150		0.14	450	0.17	2,000
NACZ151M35V10X8TR13F						
NACZ221M35V8X10.5TR13F	220		0.14	450	0.17	2,000
NACZ331M35V10X10.5TR13F	330		0.14	670	0.09	2,000
NACZ471M35V12.5X14TR13F	470		0.14	900	0.066	2,000
NACZ681M35V12.5X14TR13F	680		0.14	900	0.066	2,000
NACZ152M35V16X17TR13F	1500		0.14	1250	0.052	2,000
NACZ4R7M50V4X6.3TR13F	4.7	50	0.10	60	2.90	1,000
NACZ100M50V6.3X6.3TR13F	10		0.10	165	0.88	1,000
NACZ220M50V6.3X6.3TR13F	22		0.10	165	0.88	1,000
NACZ330M50V6.3X8TR13F	33		0.10	195	0.75	1,000
NACZ470M50V6.3X8TR13F	47		0.10	195	0.75	1,000
NACZ680M50V8X10.5TR13F	68		0.14	300	0.40	2,000
NACZ101M50V8X10.5TR13F	100		0.14	300	0.40	2,000
NACZ151M50V10X10.5TR13F	150		0.14	450	0.22	2,000
NACZ221M50V10X10.5TR13F	220		0.14	450	0.22	2,000
NACZ331M50V12.5X14TR13F	330		0.14	620	0.14	2,000
NACZ391M50V12.5X14TR13F	390		0.14	620	0.14	2,000
NACZ471M50V16X17TR13F	470		0.14	790	0.078	2,000
NACZ102M50V16X17TR13F	1000		0.14	790	0.078	2,000

*See part numbering system regarding how to order the "M1" high temperature reflow version

DIMENSIONS (mm)

Case Size	ϕD±0.5	L max.	A±0.2	B±0.2	I±0.3	W	P±0.3
4x6.3	4.0	6.3	4.3	4.3	1.8	0.5~0.8	1.0
5x6.3	5.0	6.3	5.3	5.3	2.2	0.5~0.8	1.4
6.3x6.3	6.3	6.3	6.6	6.6	2.5	0.5~0.8	2.2
6.3X8	6.3	8.0	6.6	6.6	2.5	0.5~0.8	2.2
8X10.5	8.0	10.5	8.3	8.3	2.9	0.7~1.0	3.2
10X8	10.0	8.0	10.3	10.3	3.2	1.1~1.4	4.6
10X10.5	10.0	10.5	10.3	10.3	3.2	1.1~1.4	4.6
12.5x14	12.5	14.0	12.8	12.8	4.5	1.1~1.4	4.6
16x17	16.0	17.0	16.3	16.3	5.0	1.8~2.1	7.0



PART NUMBER SYSTEM

NACZ 101 M 16V 6.3x6.3 TR 13 M1 F

- F — RoHS Compliant 97% Sn (min.), 3% Bi (max.)
- M1 — M1 denotes high temp. reflow version
- 13 — 330mm (13") Reel
- TR — Tape & Reel
- 6.3x6.3 — Size in mm
- 16V — Working Voltage
- M — Tolerance Code M=20%
- 101 — Capacitance Code in μF, first 2 digits are significant Third digit is no. of zeros, "R" indicates decimal for values under 10μF
- NACZ — Series

PRECAUTIONS

Please review the notes on correct use, safety and precautions found on **pages T10** & **T11** of NIC's **Electrolytic Capacitor catalog**.
Also found at **www.niccomp.com/precautions**
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: **tpmg@niccomp.com**

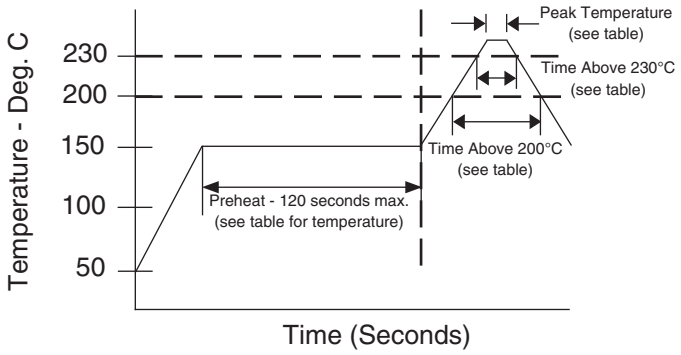
PEAK REFLOW SOLDERING TEMPERATURES AND DURATIONS (STANDARD VERSION)

Case Size	Preheat: 150°C ~ 180°C	Max. Soldering Temperature	Max. Exposure Time at Max. Solcering Temperature	Max. Exposure Time Above +200°C	Multiple Reflow Exposure
4x6.3	120 seconds max.	+250°C	5 seconds	70 seconds	2 times max.
5x6.3	120 seconds max.	+250°C	5 seconds	70 seconds	2 times max.
6.3x6.3	120 seconds max.	+250°C	5 seconds	70 seconds	2 times max.
6.3x8	120 seconds max.	+250°C	5 seconds	70 seconds	2 times max.
8x10.5	120 seconds max.	+245°C	5 seoonds	60 seconds	2 times max.
10x8	120 seconds max.	+240°C	5 seoonds	50 seconds	2 times max.
10x10.5	120 seconds max.	+240°C	5 seoonds	50 seconds	2 times max.
12.5x14	120 seconds max.	+240°C	5 seoonds	50 seconds	2 times max.
16x17	120 seconds max.	+230°C	5 seoonds	30 seconds	2 times max.

PEAK REFLOW SOLDERING TEMPERATURES AND DURATIONS (M1 VERSION)

Case Size	Preheat: 150°C ~ 180°C	Max. Soldering Temperature	Max. Exposure Time at Max. Solcering Temperature	Max. Exposure Time Above +200°C	Max. Exposure Time Above +230°C	Multiple Reflow Exposure
4x6.3	120 seconds max.	+255°C	5 seconds	60 seconds	30 seconds	2 times max.
5x6.3	120 seconds max.	+255°C	5 seconds	60 seconds	30 seconds	2 times max.
6.3x6.3	120 seconds max.	+255°C	5 seconds	60 seconds	30 seconds	2 times max.
6.3x8	120 seconds max.	+255°C	5 seconds	60 seconds	30 seconds	2 times max.
8x10.5	120 seconds max.	+250°C	5 seoonds	60 seconds	30 seconds	2 times max.
10x8	120 seconds max.	+250°C	5 seoonds	60 seconds	30 seconds	2 times max.
10x10.5	120 seconds max.	+250°C	5 seoonds	60 seconds	30 seconds	2 times max.

RECOMMENDED REFLOW SOLDERING PROFILE



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