

Surface Mount Aluminum Electrolytic Capacitors NACE Series

FEATURES

- CYLINDRICAL V-CHIP CONSTRUCTION
- LOW COST, GENERAL PURPOSE, 2000 HOURS AT 85°C
- NEW EXPANDED CV RANGE (up to 6800µF)
- ANTI-SOLVENT (2 MINUTES)
- DESIGNED FOR AUTOMATIC MOUNTING AND REFLOW SOLDERING

RoHS Compliant

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range	4.0 ~ 100Vdc										
Rate Capacitance Range	0.1 ~ 6,800μF										
Oerating Temp. Range	-40°C ~ +85°C										
Capacitance Tolerance	±20% (M), ±10%										
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV or 3μA whichever is greater										
Tan δ @120Hz/20°C	W.V. (Vdc)	4.0	6.3	10	16	25	35	50	63	100	
	3mm Dia.	0.40	0.35	0.24	0.19	0.16	0.14	0.14	-	-	
	4 ~ 6.3mm Dia.	0.35	0.26	0.20	0.16	0.14	0.12	0.10	0.10	0.10	
	8x6.5mm Dia.	-	0.25	0.26	0.20	0.16	0.14	0.12	-	0.10	
	8mm Dia. ~ up	C<1000μF	0.40	0.30	0.24	0.20	0.16	0.14	0.12	0.12	0.10
		C<1500μF	-	0.31	0.25	0.21	-	0.15	-	-	-
		C<2200μF	-	0.32	0.32	-	0.18	-	-	-	-
		C<3300μF	-	0.34	-	0.24	-	-	-	-	-
		C<4700μF	-	-	0.36	-	-	-	-	-	-
C<6800μF		-	0.40	-	-	-	-	-	-	-	
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	4.0	6.3	10	16	25	35	50	63	100	
	Z-25°C/Z+20°C	7	3	3	2	2	2	2	2	2	
	Z-40°C/Z+20°C	15	8	6	4	4	3	3	3	3	
Load Life Test 85°C 2,000 Hours	Capacitance Change	Within ± 25% of initial measured value									
	Tan δ	Less than 200% of specified max. value									
	Leakage Current	Less than specified max. value									

*See standard products and case size table for items available in 10% tolerance

PART NUMBER SYSTEM

NACE 101 M 16V 6.3x5.5 TR 13 F

NACE: Series
 101: Capacitance Code in µF, first 2 digits are significant
 M: Tolerance Code M=20%, K=10%
 16V: Working Voltage
 6.3x5.5: Size in mm
 TR: Tape & Reel
 13: 330mm (13") Reel
 F: RoHS Compliant Termination Finish: 97% Sn (min.), 3% Bi (max.)

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



Surface Mount Aluminum Electrolytic Capacitors NACE Series

STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE DφxL (mm)

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple current (mA) @ +85°C/120Hz	Max. ESR (Ω) @ +20°C/120Hz	Load Life Hours @ +85°C
NACE220M4V3X5.5TR13F	22	4	0.40	19	30.1	
NACE330M4V4X5.5TR13F	33*		0.35	26	17.6	
NACE470M4V4X5.5TR13F	47*		0.35	34	12.4	
NACE680M4V5X5.5TR13F	68*		0.35	52	8.54	
NACE101M4V5X5.5TR13F	100*		0.35	61	5.80	
NACE151M4V6.3X5.5TR13F	150*		0.35	74	3.87	
NACE221M4V6.3X5.5TR13F	220*		0.35	82	2.64	
NACE331M4V6.3X6.3TR13F	330		0.35	102	1.76	
NACE471M4V6.3X8TR13F	470*		0.35	150	1.42	
NACE102M4V10X8TR13F	1000		0.40	330	0.67	
NACE150M6.3V3X5.5TR13F	15	6.3	0.35	16	33.1	
NACE220M6.3V3X5.5TR13F	22		0.35	21	26.5	
NACE220M6.3V4X5.5TR13F	22*		0.26	31	18.1	
NACE330M6.3V5X5.5TR13F	33*		0.26	39	12.6	
NACE470M6.3V5X5.5TR13F	47*		0.26	47	8.47	
NACE680M6.3V6.3X5.5TR13F	68*		0.26	63	5.86	
NACE101M6.3V6.3X5.5TR13F	100*		0.26	71	3.98	
NACE151M6.3V6.3X5.5TR13F	150*		0.26	78	2.66	
NACE221M6.3V6.3X6.3TR13F	220*		0.26	95	1.96	
NACE331M6.3V6.3X8TR13F	330*		0.26	150	1.31	
NACE331M6.3V8X6.5TR13F	330		0.25	300	1.76	
NACE471M6.3V8X10.5TR13F	470		0.30	300	1.06	
NACE681M6.3V10X8TR13F	680*		0.30	300	0.59	
NACE102M6.3V8X10.5TR13F	1000*		0.30	330	0.50	
NACE152M6.3V10X10.5TR13F	1500*		0.31	450	0.35	
NACE332M6.3V12.5X14TR13F	3300		0.34	750	0.17	
NACE682M6.3V16X17TR13F	6800		0.40	1330	0.10	
NACE220M10V4X5.5TR13F	22*	10	0.20	35	15.1	2,000
NACE330M10V5X5.5TR13F	33*		0.20	43	10.1	
NACE470M10V6.3X5.5TR13F	47		0.20	59	7.06	
NACE680M10V6.3X5.5TR13F	68*		0.20	66	4.88	
NACE101M10V6.3X5.5TR13F	100*		0.20	76	3.32	
NACE151M10V6.3X6.3TR13F	150*		0.20	88	2.21	
NACE221M10V6.3X8TR13F	220*		0.20	150	1.51	
NACE221M10V8X6.5TR13F	220		0.26	250	1.99	
NACE331M10V8X10.5TR13F	330*		0.24	280	1.21	
NACE471M10V8X10.5TR13F	470		0.24	300	0.85	
NACE471M10V10X8TR13F	470		0.24	300	0.85	
NACE102M10V10X10.5TR13F	1000*		0.24	450	0.40	
NACE222M10V12.5X14TR13F	2200		0.32	730	0.24	
NACE472M10V16X17TR13F	4700		0.36	1200	0.13	
NACE100M16V3X5.5TR13F	10	16	0.19	20	26.5	
NACE100M16V4X5.5TR13F	10		0.16	25	26.5	
NACE220M16V5X5.5TR13F	22*		0.16	39	12.1	
NACE330M16V6.3X5.5TR13F	33*		0.16	57	8.04	
NACE470M16V6.3X5.5TR13F	47*		0.16	68	5.65	
NACE680M16V6.3X5.5TR13F	68*		0.16	75	3.91	
NACE101M16V6.3X5.5TR13F	100*		0.16	86	2.66	
NACE101M16V8X6.5TR13F	100		0.20	200	3.32	
NACE151M16V6.3X8TR13F	150*		0.16	135	1.77	
NACE221M16V6.3X8TR13F	220*		0.16	150	1.21	
NACE331M16V8X10.5TR13F	330		0.20	280	1.01	
NACE331M16V10X8TR13F	330		0.20	280	1.01	
NACE471M16V8X10.5TR13F	470		0.20	330	0.71	
NACE681M16V10X10.5TR13F	680*		0.20	450	0.49	
NACE152M16V12.5X14TR13F	1500		0.21	710	0.24	
NACE332M16V16X17TR13F	3300		0.24	1200	0.12	

*Items available in optional 10% tolerance

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency Hz	100<f≤1K	1K<f≤10K	10K< f≤100K	f ≥100K
C≤4.7μF	1.0	1.3	1.5	2.0
4.7μF<C≤33μF	1.0	1.2	1.3	1.45
C>33μF	1.0	1.1	1.2	1.3



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STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE DφxL (mm)

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple current (mA) @ +85°C/120Hz	Max. ESR (Ω) @ +20°C/120Hz	Load Life Hours @ +85°C
NACE4R7M25V3X5.5TR13F	4.7	25	0.16	12	49.4	2,000
NACE4R7M25V4X5.5TR13F	4.7		0.14	19	23.2	
NACE100M25V5X5.5TR13F	10		0.14	28	10.6	
NACE220M25V6.3X5.5TR13F	22		0.14	52	7.04	
NACE330M25V6.3X5.5TR13F	33		0.14	63	4.95	
NACE470M25V6.3X6.3TR13F	47		0.14	68	3.42	
NACE680M25V6.3X6.3TR13F	68		0.14	80	2.32	
NACE101M25V6.3X8TR13F	100		0.14	91	2.66	
NACE101M25V8X6.5TR13F	100		0.16	130	1.55	
NACE151M25V8X10.5TR13F	150*		0.16	200	1.33	
NACE221M25V8X10.5TR13F	220		0.16	250	1.21	
NACE221M25V10X8TR13F	220		0.16	250	1.21	
NACE331M25V8X10.5TR13F	330		0.16	310	0.81	
NACE471M25V10X10.5TR13F	470		0.16	430	0.57	
NACE102M25V12.5X14TR13F	1000		0.16	660	0.27	
NACE222M25V16X17TR13F	3300		0.18	1150	0.14	
NACE2R2M35V3X5.5TR13F	2.2	35	0.14	8.0	90.4	
NACE3R3M35V3X5.5TR13F	3.3		0.14	10	60.3	
NACE4R7M35V4X5.5TR13F	4.7*		0.12	20	42.3	
NACE100M35V5X5.5TR13F	10*		0.12	30	19.9	
NACE220M35V6.3X5.5TR13F	22*		0.12	54	9.05	
NACE330M35V6.3X6.3TR13F	33*		0.12	60	6.04	
NACE330M35V8X6.5TR13F	33		0.14	130	7.04	
NACE470M35V6.3X6.3TR13F	47*		0.12	70	4.24	
NACE470M35V8X6.5TR13F	47		0.14	165	4.95	
NACE680M35V6.3X8TR13F	68		0.12	110	2.93	
NACE101M35V6.3X8TR13F	100		0.12	130	1.99	
NACE151M35V8X10.5TR13F	150*		0.14	220	1.33	
NACE151M35V10X8TR13F	150*		0.14	220	1.33	
NACE221M35V8X10.5TR13F	220		0.14	270	1.06	
NACE331M35V10X10.5TR13F	330		0.14	340	0.71	
NACE471M35V12.5X14TR13F	470	50	0.14	590	0.49	
NACE681M35V12.5X14TR13F	680		0.14	610	0.34	
NACE152M35V16X17TR13F	1500		0.15	1060	0.17	
NACER10M50V3X5.5TR13F	0.1		0.14	1.0	1660	
NACER10M50V4X5.5TR13F	0.1*		0.10	1.0	1660	
NACER22M50V3X5.5TR13F	0.22		0.14	2.3	1660	
NACER22M50V4X5.5TR13F	0.22*		0.10	2.3	754	
NACER33M50V3X5.5TR13F	0.33		0.14	3.5	503	
NACER33M50V4X5.5TR13F	0.33*		0.10	3.5	503	
NACER47M50V3X5.5TR13F	0.47		0.14	4.0	353	
NACER47M50V4X5.5TR13F	0.47*		0.10	5.5	353	
NACE1R0M50V3X5.5TR13F	1.0		0.14	8.0	166	
NACE1R0M50V4X5.5TR13F	1.0*		0.10	10	166	
NACE2R2M50V4X5.5TR13F	2.2*		0.10	15	75.4	
NACE3R3M50V4X5.5TR13F	3.3*		0.10	15	50.3	
NACE4R7M50V5X5.5TR13F	4.7*		0.10	23	35.3	
NACE100M50V6.3X5.5TR13F	10*		0.10	34	16.6	
NACE220M50V6.3X6.3TR13F	22*		0.10	58	7.54	
NACE220M50V8X6.5TR13F	22		0.12	120	9.05	
NACE330M50V6.3X8TR13F	33*		0.10	65	5.03	
NACE330M50V8X6.5TR13F	33		0.12	85	6.04	
NACE470M50V6.3X8TR13F	47*		0.10	90	3.53	
NACE680M50V8X10.5TR13F	68*		0.12	120	2.44	
NACE820M50V10X8TR13F	82		0.12	200	2.44	
NACE101M50V8X10.5TR13F	100*		0.12	200	1.99	
NACE221M50V10X10.5TR13F	220		0.12	320	0.91	
NACE331M50V12.5X14TR13F	330		0.12	520	0.60	
NACE471M50V16X17TR13F	470		0.12	925	0.43	
NACE102M50V16X17TR13F	1000		0.12	940	0.20	

*Items available in optional 10% tolerance

STANDARD PRODUCTS, SPECIFICATIONS AND CASE SIZE TABLE DφxL (mm)

NIC Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor (Tan δ)	Max. Ripple current (mA) @ +85°C/120Hz	Max. ESR (Ω) @ +20°C/120Hz	Load Life Hours @ +85°C
NACER10M63V4X5.5TR13F	0.1*	63	0.10	1.0	1660	2,000
NACER22M63V4X5.5TR13F	0.22*		0.10	2.3	754	
NACER33M63V4X5.5TR13F	0.33*		0.10	3.5	503	
NACER47M63V4X5.5TR13F	0.47*		0.10	5.0	353	
NACE1R0M63V4X5.5TR13F	1.0*		0.10	10	166	
NACE2R2M63V4X5.5TR13F	2.2*		0.10	15	75.4	
NACE3R3M63V5X5.5TR13F	3.3*		0.10	15	50.3	
NACE4R7M63V5X5.5TR13F	4.7*		0.10	23	35.3	
NACE100M63V6.3X5.5TR13F	10*		0.10	34	16.6	
NACE220M63V6.3X8TR13F	22*		0.10	70	7.54	
NACE330M63V8X10.5TR13F	33*		0.12	160	6.04	
NACE470M63V8X10.5TR13F	47*		0.10	170	4.24	
NACE680M63V8X10.5TR13F	68		0.10	180	2.44	
NACE101M63V10X10.5TR13F	100*		0.12	280	1.99	
NACE221M63V12.5X14TR13F	220		0.12	410	0.91	
NACE471M63V16X17TR13F	470		0.12	700	0.43	
NACE1R0M100V4X6.3TR13F	1.0*	100	0.10	10	166	
NACE2R2M100V6.3X6.3TR13F	2.2*		0.10	20	75.4	
NACE3R3M100V6.3X6.3TR13F	3.3*		0.10	28	50.3	
NACE3R3M100V8X6.5TR13F	3.3		0.10	50	90.4	
NACE4R7M100V6.3X6.3TR13F	4.7*		0.10	35	35.3	
NACE100M100V6.3X8TR13F	10*		0.10	50	16.6	
NACE220M100V8X10.5TR13F	22*		0.10	120	7.54	
NACE330M100V10X10.5TR13F	33*		0.10	190	5.03	
NACE470M100V12.5X14TR13F	47		0.10	330	3.53	
NACE101M100V16X17TR13F	100		0.10	550	1.66	
NACE151M100V16X17TR13F	150		0.10	560	1.11	

*Items available in optional 10% tolerance

DIMENSIONS (mm)

Case Size	Dφ ±0.5	L max.	A ±0.2	B ±0.2	I ±0.2	W	P ±0.2
3 x 5.5	3.0	5.5	3.3	3.3	1.5	0.45 ~ 0.8	0.6
4 x 5.5	4.0	5.5	4.3	4.3	1.8	0.5 ~ 0.8	1.0
5 x 5.5	5.0	5.5	5.3	5.3	2.1	0.5 ~ 0.8	1.4
6.3 x 5.5	6.3	5.5	6.6	6.6	2.5	0.5 ~ 0.8	2.2
6.3 x 6.3	6.3	6.3	6.6	6.6	2.5	0.5 ~ 0.8	2.2
6.3 x 8	6.3	8.0	6.6	6.6	2.5	0.5 ~ 0.8	2.2
8 x 6.5	8.0	6.5	8.3	8.3	3.4	0.5 ~ 0.8	2.2
8 x 10.5	8.0	10.5	8.3	8.3	2.9	0.7 ~ 1.0	3.2
10 x 8	10.0	8.0	10.3	10.3	3.2	0.7 ~ 1.4	4.6
10 x 10.5	10.0	10.5	10.3	10.3	3.2	0.7 ~ 1.4	4.6
12.5 x 14	12.5	14.0	12.8	12.8	4.5	0.6 ~ 1.4	4.6
16 x 17	16.0	17.5	17.0	17.0	5.5	0.9 ~ 1.5	6.7

