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)
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	0.30	-	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	-	0.30	-	0.20	-	0.14	-	-	-
		C<2200µF	-	-	0.26	-	0.18	-	-	-	-
		C<3300µF	-	0.34	-	0.24	-	-	-	-	-
		C<4700µF	-	-	0.30	-	-	-	-	-	-
		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	4	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								

PART NUMBER SYSTEM

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

- F — RoHS Compliant; Termination Finish: 97% Sn (min.), 3% Bi (max.)
- 13 — 330mm (13") Reel
- TR — Tape & Reel
- 6.3x5.5 — 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
- NACE — 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

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

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

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	56.5	2,000
NACE4R7M25V4X5.5TR13F	4.7		0.14	19	49.4	2,000
NACE100M25V5X5.5TR13F	10		0.14	28	23.2	2,000
NACE220M25V6.3X5.5TR13F	22		0.14	52	10.6	2,000
NACE330M25V6.3X5.5TR13F	33		0.14	63	7.04	2,000
NACE470M25V6.3X6.3TR13F	47		0.14	68	4.94	2,000
NACE680M25V6.3X6.3TR13F	68		0.14	80	3.41	2,000
NACE101M25V6.3X8TR13F	100		0.14	91	2.32	2,000
NACE101M25V8X6.5TR13F	100		0.16	130	2.65	2,000
NACE151M25V8X10.5TR13F	150		0.16	200	1.77	2,000
NACE221M25V8X10.5TR13F	220		0.16	250	1.21	2,000
NACE221M25V10X8TR13F	220		0.16	250	1.21	2,000
NACE331M25V8X10.5TR13F	330		0.16	310	0.80	2,000
NACE471M25V10X10.5TR13F	470		0.16	430	0.56	2,000
NACE102M25V12.5X14TR13F	1000		0.16	660	0.27	2,000
NACE222M25V16X17TR13F	2200		0.18	1150	0.14	2,000
NACE2R2M35V3X5.5TR13F	2.2	35	0.14	8.0	90.4	2,000
NACE3R3M35V3X5.5TR13F	3.3		0.14	10	60.3	2,000
NACE4R7M35V4X5.5TR13F	4.7		0.12	20	42.3	2,000
NACE100M35V5X5.5TR13F	10		0.12	30	19.9	2,000
NACE220M35V6.3X5.5TR13F	22		0.12	54	9.05	2,000
NACE330M35V6.3X6.3TR13F	33		0.12	60	6.04	2,000
NACE330M35V8X6.5TR13F	33		0.14	130	7.04	2,000
NACE470M35V6.3X6.3TR13F	47		0.12	70	4.24	2,000
NACE470M35V8X6.5TR13F	47		0.14	165	4.95	2,000
NACE680M35V6.3X8TR13F	68		0.12	110	2.93	2,000
NACE101M35V6.3X8TR13F	100		0.12	130	1.99	2,000
NACE151M35V8X10.5TR13F	150		0.14	220	1.33	2,000
NACE151M35V10X8TR13F	150		0.14	220	1.33	2,000
NACE221M35V8X10.5TR13F	220		0.14	270	1.06	2,000
NACE331M35V10X10.5TR13F	330		0.14	340	0.71	2,000
NACE471M35V12.5X14TR13F	470		0.14	590	0.49	2,000
NACE681M35V12.5X14TR13F	680		0.14	610	0.34	2,000
NACE152M35V16X17TR13F	1500		0.14	1060	0.17	2,000
NACER10M50V3X5.5TR13F	0.1	50	0.14	1.0	1660	2,000
NACER10M50V4X5.5TR13F	0.1		0.10	1.0	1660	2,000
NACER22M50V3X5.5TR13F	0.22		0.14	2.3	1660	2,000
NACER22M50V4X5.5TR13F	0.22		0.10	2.3	754	2,000
NACER33M50V3X5.5TR13F	0.33		0.14	3.5	503	2,000
NACER33M50V4X5.5TR13F	0.33		0.10	3.5	503	2,000
NACER47M50V3X5.5TR13F	0.47		0.14	4.0	353	2,000
NACER47M50V4X5.5TR13F	0.47		0.10	5.5	353	2,000
NACE1R0M50V3X5.5TR13F	1.0		0.14	8.0	166	2,000
NACE1R0M50V4X5.5TR13F	1.0		0.10	10	166	2,000
NACE2R2M50V4X5.5TR13F	2.2		0.10	15	75.4	2,000
NACE3R3M50V4X5.5TR13F	3.3		0.10	15	50.3	2,000
NACE4R7M50V5X5.5TR13F	4.7		0.10	23	35.3	2,000
NACE100M50V6.3X5.5TR13F	10		0.10	34	16.6	2,000
NACE220M50V6.3X6.3TR13F	22		0.10	58	7.54	2,000
NACE220M50V8X6.5TR13F	22		0.12	120	9.05	2,000
NACE330M50V6.3X8TR13F	33		0.10	65	5.03	2,000
NACE330M50V8X6.5TR13F	33		0.12	85	6.04	2,000
NACE470M50V6.3X8TR13F	47		0.10	90	3.53	2,000
NACE680M50V8X10.5TR13F	68		0.12	120	2.44	2,000
NACE820M50V10X8TR13F	82		0.12	200	2.44	2,000
NACE101M50V8X10.5TR13F	100		0.12	200	1.99	2,000
NACE221M50V10X10.5TR13F	220		0.12	320	0.91	2,000
NACE331M50V12.5X14TR13F	330		0.12	520	0.60	2,000
NACE471M50V16X17TR13F	470		0.12	925	0.43	2,000
NACE102M50V16X17TR13F	1000		0.12	940	0.20	2,000

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	2,000
NACER33M63V4X5.5TR13F	0.33		0.10	3.5	503	2,000
NACER47M63V4X5.5TR13F	0.47		0.10	5.0	353	2,000
NACE1R0M63V4X5.5TR13F	1.0		0.10	10	166	2,000
NACE2R2M63V4X5.5TR13F	2.2		0.10	15	75.4	2,000
NACE3R3M63V5X5.5TR13F	3.3		0.10	15	50.3	2,000
NACE4R7M63V5X5.5TR13F	4.7		0.10	23	35.3	2,000
NACE100M63V6.3X5.5TR13F	10		0.10	34	16.6	2,000
NACE220M63V6.3X8TR13F	22		0.10	70	7.54	2,000
NACE330M63V8X10.5TR13F	33		0.12	160	6.04	2,000
NACE470M63V8X10.5TR13F	47		0.12	170	4.24	2,000
NACE680M63V8X10.5TR13F	68		0.12	180	2.44	2,000
NACE101M63V10X10.5TR13F	100		0.12	280	1.99	2,000
NACE221M63V12.5X14TR13F	220		0.12	410	0.91	2,000
NACE471M63V16X17TR13F	470		0.12	700	0.43	2,000
NACE1R0M100V4X6.3TR13F	1.0	100	0.10	10	166	2,000
NACE2R2M100V6.3X6.3TR13F	2.2		0.10	20	75.4	2,000
NACE3R3M100V6.3X6.3TR13F	3.3		0.10	28	50.3	2,000
NACE3R3M100V8X6.5TR13F	3.3		0.10	50	90.4	2,000
NACE4R7M100V6.3X6.3TR13F	4.7		0.10	35	35.3	2,000
NACE100M100V6.3X8TR13F	10		0.10	50	16.6	2,000
NACE220M100V8X10.5TR13F	22		0.10	120	7.54	2,000
NACE330M100V10X10.5TR13F	33		0.10	190	5.03	2,000
NACE470M100V12.5X14TR13F	47		0.10	330	3.53	2,000
NACE680M100V12.5X14TR13F	68		0.10	350	2.44	2,000
NACE101M100V16X17TR13F	100		0.10	550	1.66	2,000
NACE151M100V16X17TR13F	150		0.10	560	1.11	2,000

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

