

Surface Mount Aluminum Electrolytic Capacitors NACM Series

FEATURES

- NEW GENERATION HORIZONTAL MOUNT CHIP
- FLAT TOP RESIN PACKAGE FOR EASY PICK AND PLACEMENT
- EPOXY SEALED FOR EXTENDED LIFE (2000 HOURS AT +105°C)
- LOW IMPEDANCE AND HIGH RIPPLE AT 100KHZ
- FIXED TERMINALS FOR HIGH MECHANICAL STABILITY
- COMPATIBLE WITH REFLOW SOLDERING

**RoHS
Compliant**

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range	4 ~ 50VDC						
Rated Capacitance Range	0.47 ~ 270μF						
Operating Temperature Range	-55 ~ 105°C						
Capacitance Tolerance	+/-20%(M)						
Max. Leakage Current After 2 Minutes	0.01CV or 3μA, whichever is greater						
Working Voltage	WV (VDC)	4	6.3	10	16	25	50
Surge Voltage	SV (VDC)	5	7	13	20	32	63
Max. Tan δ	120Hz, +20°C	0.44	0.24	0.20	0.16	0.14	0.12
Low Temperature Stability (Impedance Ratio @ 120Hz)	WV (VDC)	4	6.3	10	16	25	50
	Z-25°C/+20°C	3	4	3	2	2	2
	Z-55°C/+20°C	8	10	8	6	4	4
High Temperature Load Life 2000 Hours at +105°C Rated WVDC	Capacitance Change	Within + 30% of initial measured value					
	Tan δ	Less than 200% of specified max. value					
	Leakage Current	Less than specified max. value					

STANDARD PRODUCTS AND CASE SIZE WxL (mm)

Capacitance (μF)	Code	Working Voltage (Vdc)					
		4	6.3	10	16	25	50
0.47	R47	-	-	-	-	-	3.8 x 6.5
1.0	1R0	-	-	-	-	-	3.8 x 6.5
1.5	1R5	-	-	-	-	-	3.8 x 6.5
2.2	2R2	-	-	-	-	-	3.8 x 6.5
3.3	3R3	-	-	-	-	3.8 x 6.5	4.8 x 7.3
4.7	4R7	-	-	-	-	3.8 x 6.5	4.8 x 7.3
6.8	6R8	-	-	-	-	3.8 x 6.5	4.8 x 7.3
10	100	-	-	-	-	3.8 x 6.5	4.8 x 7.3
15	150	-	-	-	3.8 x 6.5	4.8 x 7.3	-
22	220	-	-	3.8 x 6.5	-	4.8 x 7.3	-
33	330	-	3.8 x 6.5	-	3.8 x 9.5	4.8 x 7.3	4.8 x 10.3
47	470	3.8 x 6.5	-	3.8 x 9.5	4.8 x 7.3	4.8 x 10.3	-
68	680	-	3.8 x 9.5	4.8 x 7.3	-	4.8 x 10.3	-
100	101	3.8 x 9.5	4.8 x 7.3	-	4.8 x 10.3	-	-
150	151	4.8 x 7.3	-	4.8 x 10.3	-	-	-
220	221	-	4.8 x 10.3	-	-	-	-
270	271	4.8 x 10.3	-	-	-	-	-

PART NUMBER SYSTEM

NACM 100 M 50V 4.8x7.3 TR 15 F

NACM: Series
 100: Capacitance Code in μF, first 2 digits are significant
 M: Tolerance Code M=20%, K=10%
 50V: Working Voltage
 4.8x7.3: Size in mm
 TR: Tape & Reel
 15 F: 330mm (13") Reel, RoHS Compliant



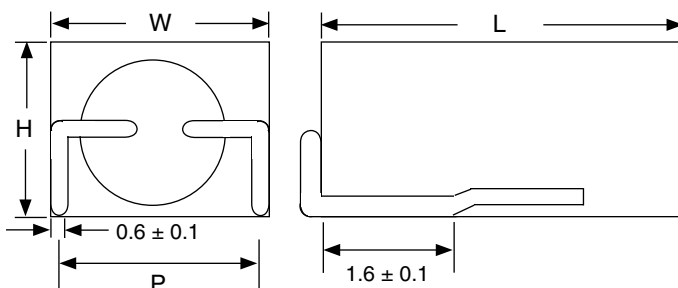
Surface Mount Aluminium Electrolytic Capacitors NACM Series

STANDARD PRODUCTS AND SPECIFICATIONS

NIC Part Number	WV (VDC)	Cap. (μF)	Case Size WxHxL (mm)	Max. L.C. (μA)	Tan δ	Max. Ripple Current At +105°C & 100KHZ (mA)	Max. Impedance At +20°C & 100KHZ (Ω)
NACM470M4V3.8X6.5TR	4	47	3.8x3.8x6.5	3.0	0.44	28	6.5
NACM101M4V3.8X9.5TR	4	100	3.8x3.8x9.5	4.0	0.44	60	3.0
NACM151M4V4.8X7.3TR	4	150	4.8x4.8x7.3	6.0	0.44	80	2.5
NACM271M4V4.8X10.3TR	4	270	4.8x4.8x10.3	13.2	0.44	150	2.0
NACM330M6.3V3.8X6.5TR	6.3	33	3.8x3.8x6.5	3.0	0.24	30	6.5
NACM680M6.3V3.8X9.5TR	6.3	68	3.8x3.8x9.5	4.2	0.28	60	3.0
NACM101M6.3V4.8X7.3TR	6.3	100	4.8x4.8x7.3	6.3	0.28	75	2.5
NACM221M6.3V4.8X10.3TR	6.3	220	4.8x4.8x10.3	13.8	0.28	150	2.0
NACM220M10V3.8X6.5TR	10	22	3.8x3.8x6.5	3.0	0.24	30	6.5
NACM470M10V3.8X9.5TR	10	47	3.8x3.8x9.5	4.7	0.24	60	3.0
NACM680M10V4.8X7.3TR	10	68	4.8x4.8x7.3	6.8	0.24	75	2.5
NACM151M10V4.8X10.3TR	10	150	4.8x4.8x10.3	15.0	0.24	150	2.0
NACM150M16V3.8X6.5TR	16	15	3.8x3.8x6.5	3.0	0.20	30	6.5
NACM330M16V3.8X9.5TR	16	33	3.8x3.8x9.5	4.2	0.20	60	3.0
NACM470M16V4.8X7.3TR	16	47	4.8x4.8x7.3	7.5	0.20	75	2.5
NACM101M16V4.8X10.3TR	16	100	4.8x4.8x10.3	15.0	0.20	150	2.0
NACM3R3M25V3.8X6.5TR	25	3.3	3.8x3.8x6.5	3.0	0.16	15	6.5
NACM4R7M25V3.8X6.5TR	25	4.7	3.8x3.8x6.5	3.0	0.16	18	6.5
NACM6R8M25V3.8X6.5TR	25	6.8	3.8x3.8x6.5	3.0	0.16	22	6.5
NACM100M25V3.8X6.5TR	25	10	3.8x3.8x6.5	3.0	0.16	30	6.5
NACM150M25V4.8X7.3TR	25	15	4.8x4.8x7.3	3.7	0.16	65	2.5
NACM220M25V4.8X7.3TR	25	22	4.8x4.8x7.3	5.5	0.16	70	2.5
NACM330M25V4.8X7.3TR	25	33	4.8x4.8x7.3	8.2	0.16	75	2.5
NACM470M25V4.8X10.3TR	25	47	4.8x4.8x10.3	11.7	0.16	150	2.0
NACM680M25V4.8X10.3TR	25	68	4.8x4.8x10.3	17.0	0.16	150	2.0
NACMR47M50V3.8X6.5TR	50	0.47	3.8x3.8x6.5	3.0	0.14	5	7.0
NACM1R0M50V3.8X6.5TR	50	1.0	3.8x3.8x6.5	3.0	0.14	6	7.0
NACM1R5M50V3.8X6.5TR	50	1.5	3.8x3.8x6.5	3.0	0.14	8	7.0
NACM2R2M50V3.8X6.5TR	50	2.2	3.8x3.8x6.5	3.0	0.14	11	7.0
NACM3R3M50V3.8X6.5TR	50	3.3	3.8x3.8x6.5	3.0	0.14	25	7.0
NACM4R7M50V4.8X7.3TR	50	4.7	4.8x4.8x7.3	3.0	0.14	60	3.0
NACM6R8M50V4.8X7.3TR	50	6.8	4.8x4.8x7.3	3.4	0.14	65	3.0
NACM100M50V4.8X7.3TR	50	10	4.8x4.8x7.3	5.0	0.14	70	3.0
NACM150M50V4.8X10.3TR	50	15	4.8x4.8x10.3	7.5	0.14	120	2.5
NACM220M50V4.8X10.3TR	50	22	4.8x4.8x10.3	11.0	0.14	150	2.5
NACM330M50V4.8X10.3TR	50	33	4.8x4.8x10.3	16.5	0.14	150	2.5

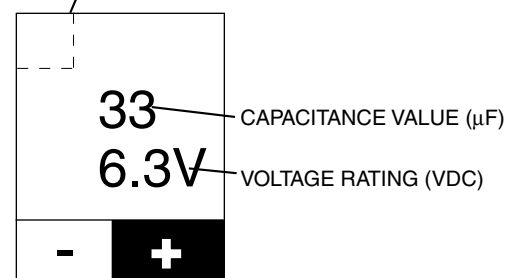
DIMENSIONS (mm)

Case Size	W Max.	H Max.	L Max.	P+/-0.3
3.8 x 3.8 x 6.5	3.8	3.8	6.5	3.0
3.8 x 3.8 x 9.5	3.8	3.8	9.5	3.0
4.8 x 4.8 x 7.3	4.8	4.8	7.3	4.0
4.8 x 4.8 x 10.3	4.8	4.8	10.3	4.0



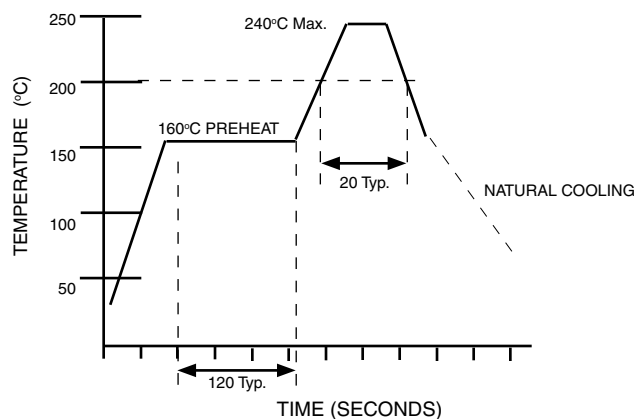
COMPONENT MARKING:

NOTCH IN BODY IDENTIFIES CATHODE



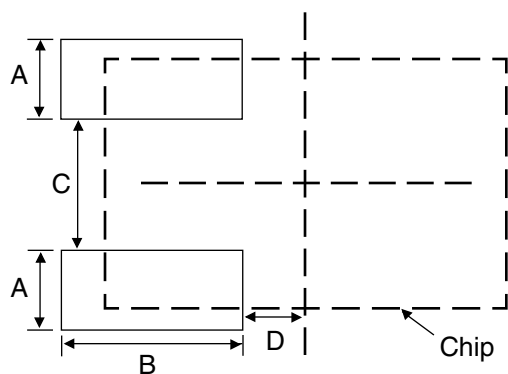
CATHODE ANODE

RECOMMENDED REFLOW SOLDERING PROFILE



RECOMMENDED LAND PATTERNS (mm)

Case Size	A	B	C	D
3.8 x 3.8 x 6.5	1.2	3.0	2.2	0.6
3.8 x 3.8 x 9.5	1.2	3.0	2.2	0.6
4.8 x 4.8 x 7.3	1.2	3.3	3.2	2.1
4.8 x 4.8 x 10.3	1.2	3.3	3.2	2.1



TAPING SPECIFICATIONS (mm)

Case Size	W $\pm$ 0.2	A $\pm$ 0.1	B $\pm$ 0.2	C $\pm$ 0.1	P $\pm$ 0.1	F $\pm$ 0.05	W1 $\pm$ 0.5	Reel Qty.
3.8x3.8x6.5	12.0	7.0	4.1	4.1	8.0	5.5	13.5	3000
3.8x3.8x9.5	16.0	10.0	4.1	4.1	8.0	7.5	17.5	3000
4.8x4.8x7.3	16.0	7.7	5.0	5.2	8.0	7.5	17.5	2500
4.8x4.8x10.3	16.0	10.7	5.0	5.2	8.0	7.5	17.5	2500

