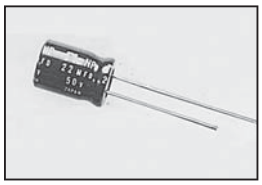
Non-Polar Aluminum Electrolytic Capacitors

NNR Series

RADIAL LEADS NON-POLARIZED ALUMINUM ELECTROLYTIC CAPACITORS



FEATURES

- DESIGNED FOR APPLICATIONS WITH REVERSIBLE POLARITY
- LOW AC VOLTAGE CAN BE SUPERIMPOSED WITHIN THE LIMITED RIPPLE CURRENT

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

CHARACTERISTICS

Rated Voltage Range	10 ~ 100Vdc						
Capacitance Range	1.0 ~ 1,000µF						
Operating Temperature Range	-40 ~ +85°C						
Capacitance Tolerance	±20%(M)						
Max. Leakage Current After 5 minutes At +20°C	0.03CV +8µA						
Surge Voltage & Max. Tan δ @ 120Hz/+20°C	W.V. (Vdc)	10	16	25	35	50	100
	S.V. (Vdc)	13	20	32	44	63	125
	Tan δ	0.20	0.18	0.14	0.13	0.09	0.10
Low Temperature Stability (Impedance Ratio @ 120Hz)	Z-25°C/Z+20°C	322222					
	Z-40°C/Z+20°C	8	6	4	3	3	3
Load Life Test at Rated W.V. & +85°C 2,000 Hours (Polarity Shall Be Reversed Every 250 Hours	Capacitance Change		Within ±25% of initial measured value				
	Tan δ		Less than 200% of specified maximum value				
	Leakage Current		Less than specified maximum value				

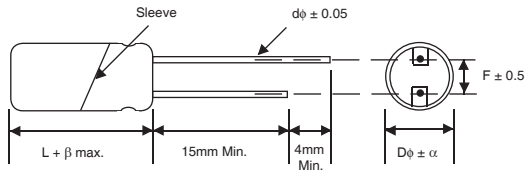
STANDARD PRODUCTS AND CASE SIZE TABLE D ϕ x L (mm)

Cap. (µF)	Working Voltage (Vdc)					
	10	16	25	35	50	100
1.0	-	-	-	-	5x11	5x11
2.2	-	-	-	-	5x11	5x11
3.3	-	-	-	-	5x11	6.3x11
4.7	-	-	5x11	5x11	5x11	6.3x11
10	-	5x11	5x11	5x11	6.3x11	8x12.5
22	5x11	5x11	5x11	6.3x11	8x11.5	10x16
33	5x11	5x11	6.3x11	6.3x11	8x11.5	10x20
47	5x11	6.3x11	6.3x11	8x11.5	10x12.5	12.5x25
100	6.3x11	8x11.5	8x11.5	10x12.5	10x20	-
220	8x12.5	10x12.5	10x16	10x20	12.5x25	-
330	10x12.5	10x16	10x20	12.5x25	-	-
470	10x16	10x20	12.5x20	12.5x25	-	-
1000	12.5x20	12.5x25	-	-	-	-

LEAD SPACING AND DIAMETER (mm)

Case Dia. (Dϕ)	5	6.3	8	10	12.5
Lead Dia. (dϕ)	0.5	0.5	0.6	0.6	0.6
Lead Space (F)	2.0	2.5	3.5	5.0	5.0
Dim. α	0.5	0.5	0.5	0.5	0.5
Dim. β	1.5	1.5	1.5	1.5	1.5

DIMENSIONS (mm)



Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

PART NUMBERING SYSTEM

NNR 101 M 25V 8X11.5 TB F

- F — RoHS Compliant
- TB = Tape & Box*
- 8X11.5 — Case Size (Dϕ x L)
- 25V — Working Voltage (Vdc)
- M — Tolerance Code (M=20%)
- 101 — Cap. Code: First 2 characters significant, Third character is multiplier
- NNR — Series

*see taping specifications for details

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**

STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D ϕ x L (mm)

Part Number	Cap. (µF)	W.V. (Vdc))	Dissipation Factor +20°C/120Hz	Ripple Current Rating (mA) +85°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Load Life Hours @ +85°C
NNR220M10V5x11F	22	10	0.20	38	15.08	2,000
NNR330M10V5x11F	33		0.20	58	10.05	2,000
NNR470M10V5x11F	47		0.20	70	7.06	2,000
NNR101M10V6.3x11F	100		0.20	125	3.32	2,000
NNR221M10V8x12.5F	220		0.20	225	1.51	2,000
NNR331M10V10x12.5F	330		0.20	295	1.01	2,000
NNR471M10V10x16F	470		0.20	390	0.71	2,000
NNR102M10V12.5x20F	1000		0.20	620	0.33	2,000
NNR100M16V5x11F	10	16	0.18	28	29.86	2,000
NNR220M16V5x11F	22		0.18	50	13.57	2,000
NNR330M16V5x11F	33		0.18	60	9.05	2,000
NNR470M16V6.3x11F	47		0.18	85	6.35	2,000
NNR101M16V8x11.5F	100		0.18	165	2.99	2,000
NNR221M16V10x12.5F	220		0.18	260	1.36	2,000
NNR331M16V10x16F	330		0.18	360	0.90	2,000
NNR471M16V10x20F	470		0.18	420	0.64	2,000
NNR102M16V12.5x25F	1000		0.18	740	0.30	2,000
NNR4R7M25V5x11F	4.7	25	0.14	25	56.47	2,000
NNR100M25V5x11F	10		0.14	40	26.54	2,000
NNR220M25V5x11F	22		0.14	60	12.06	2,000
NNR330M25V6.3x11F	33		0.14	80	8.04	2,000
NNR470M25V6.3x11F	47		0.14	90	5.65	2,000
NNR101M25V8x11.5F	100		0.14	180	2.65	2,000
NNR221M25V10x16F	220		0.14	320	1.21	2,000
NNR331M25V10x20F	330		0.14	425	0.80	2,000
NNR471M25V12.5x20F	470		0.14	540	0.56	2,000
NNR4R7M35V5x11F	4.7	35	0.13	30	49.41	2,000
NNR100M35V5x11F	10		0.13	45	23.22	2,000
NNR220M35V6.3x11F	22		0.13	75	10.56	2,000
NNR330M35V6.3x11F	33		0.13	90	7.04	2,000
NNR470M35V8x11.5F	47		0.13	125	4.94	2,000
NNR101M35V10x12.5F	100		0.13	200	2.32	2,000
NNR221M35V10x20F	220		0.13	350	1.06	2,000
NNR331M35V12.5x25F	330		0.13	440	0.70	2,000
NNR471M35V12.5x25F	470		0.13	585	0.49	2,000
NNR1R0M50V5x11F	1.0	50	0.09	10	215.63	2,000
NNR2R2M50V5x11F	2.2		0.09	20	98.01	2,000
NNR3R3M50V5x11F	3.3		0.09	28	65.34	2,000
NNR4R7M50V5x11F	4.7		0.09	38	45.88	2,000
NNR100M50V6.3x11F	10		0.09	50	21.56	2,000
NNR220M50V8x11.5F	22		0.09	90	9.80	2,000
NNR330M50V8x11.5F	33		0.09	110	6.53	2,000
NNR470M50V10x12.5F	47		0.09	135	4.59	2,000
NNR101M50V10x20F	100		0.09	250	2.16	2,000
NNR221M50V12.5x25F	220		0.09	410	0.98	2,000
NNR1R0M100V5x11F	1.0	100	0.10	15	149.28	2,000
NNR2R2M100V5x11F	2.2		0.10	25	67.86	2,000
NNR3R3M100V6.3x11F	3.3		0.10	30	45.24	2,000
NNR4R7M100V6.3x11F	4.7		0.10	46	31.76	2,000
NNR100M100V8x12.5F	10		0.10	70	14.93	2,000
NNR220M100V10x16F	22		0.10	120	6.79	2,000
NNR330M100V10x20F	33		0.10	170	4.52	2,000
NNR470M100V12.5x25F	47		0.10	200	3.18	2,000