

# Miniature Aluminum Electrolytic Capacitors

NRB-XY Series

HIGH RIPPLE CURRENT, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC

## FEATURES

- LONG LIFE AT 105°C (5,000 hrs.)
- HIGH VOLTAGE (UP TO 450V)
- HIGH RIPPLE CURRENT (UP TO 1.2A)

**RoHS  
Compliant**  
includes all homogeneous materials

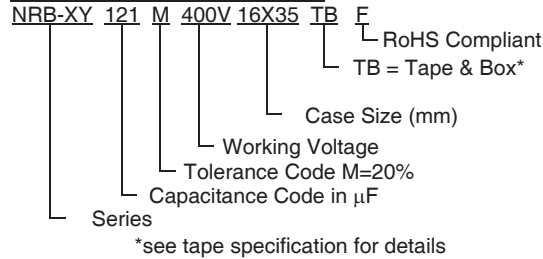
\*See Part Number System for Details



## CHARACTERISTICS

Rated Voltage Range	400 ~ 450Vdc			
Capacitance Range	33 ~ 220µF			
Operating Temperature Range	-40°C ~ +105°C			
Capacitance Tolerance	±20% (M)			
Maximum Leakage Current at 20°C	3 * √CV after 5 minutes			
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)	400	420	450
	S.V. (Vdc)	450	470	500
	Tan δ	0.20	0.20	0.20
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	400	420	450
	Z-25°C/Z+20°C	5	6	6
Load Life Hours Load Life Test at Rated W.V. & 105°C	Test	5,000 Hours		
	Capacitance Change	Within ±20% of initial measured value		
	Tan δ	Less than 200% of specified value		
	Leakage Current	Less than specified value		

## PART NUMBER SYSTEM



## 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](http://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](mailto:tpmg@niccomp.com)



## STANDARD PRODUCT, SPECIFICATIONS AND CASE SIZES D $\phi$ x L (mm)

Part Number	Cap. ( $\mu$ F)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	Ripple Current Rating (Arms) +105°C/120Hz	Max. ESR ( $\Omega$ ) 120Hz	Load Life Hours @+105°C	
NRB-XY390M400V10X40F	39	400	0.2	0.37	8.51	5,000	
NRB-XY470M400V10X45F	47		0.2	0.42	7.06	5,000	
NRB-XY560M400V10X50 F	56		0.2	0.47	5.92	5,000	
NRB-XY680M400V12.5X40F	68		0.2	0.54	4.88	5,000	
NRB-XY820M400V12.5X45F	82		0.2	0.61	4.05	5,000	
NRB-XY820M400V14.5X31.5F	82		0.2	0.57	4.05	5,000	
NRB-XY101M400V12.5X50F	100		0.2	0.68	3.32	5,000	
NRB-XY101M400V14.5X40F	100		0.2	0.69	3.32	5,000	
NRB-XY101M400V16X31.5F	100		0.2	0.71	3.32	5,000	
NRB-XY121M400V14.5X45F	120		0.2	0.79	2.76	5,000	
NRB-XY121M400V16X35F	120		0.2	0.8	2.76	5,000	
NRB-XY151M400V16X40F	150		0.2	0.92	2.21	5,000	
NRB-XY151M400V18X31.5F	150		0.2	0.89	2.21	5,000	
NRB-XY151M400V18X40F	150		0.2	1.05	2.21	5,000	
NRB-XY181M400V16X50F	180		0.2	1.08	1.84	5,000	
NRB-XY181M400V18X40F	180		0.2	1.06	1.84	5,000	
NRB-XY221M400V18X45F	220		0.2	1.2	1.51	5,000	
NRB-XY390M420V10X40F	39		420	0.2	0.36	8.51	5,000
NRB-XY470M420V10X50F	47			0.2	0.43	7.06	5,000
NRB-XY560M420V12.5X40F	56			0.2	0.48	5.92	5,000
NRB-XY680M420V12.5X40F	68	0.2		0.52	4.88	5,000	
NRB-XY680M420V14.5X31.5F	68	0.2		0.52	4.88	5,000	
NRB-XY820M420V12.5X45F	82	0.2		0.59	4.05	5,000	
NRB-XY820M420V14.5X35F	82	0.2		0.59	4.05	5,000	
NRB-XY101M420V14.5X40F	100	0.2		0.67	3.32	5,000	
NRB-XY101M420V16X31.5F	100	0.2		0.69	3.32	5,000	
NRB-XY121M420V14.5X45F	120	0.2		0.75	2.76	5,000	
NRB-XY121M420V16X35F	120	0.2		0.78	2.76	5,000	
NRB-XY121M420V18X31.5F	120	0.2		0.8	2.76	5,000	
NRB-XY151M420V16X45F	150	0.2		0.94	2.21	5,000	
NRB-XY151M420V18X35F	150	0.2		0.92	2.21	5,000	
NRB-XY181M420V16X50F	180	0.2		1.05	1.84	5,000	
NRB-XY181M420V18X40F	180	0.2		1.04	1.84	5,000	
NRB-XY221M420V18X50F	220	0.2		1.22	1.51	5,000	
NRB-XY330M450V10X40F	33	450		0.2	0.34	10.05	5,000
NRB-XY390M450V10X45F	39			0.2	0.38	8.51	5,000
NRB-XY470M450V12.5X40F	47			0.2	0.44	7.06	5,000
NRB-XY560M450V12.5X40F	56		0.2	0.49	5.92	5,000	
NRB-XY680M450V12.5X45F	68		0.2	0.55	4.88	5,000	
NRB-XY680M450V14.5X31.5F	68		0.2	0.52	4.88	5,000	
NRB-XY820M450V12.5X50F	82		0.2	0.62	4.05	5,000	
NRB-XY820M450V14.5X40F	82		0.2	0.63	4.05	5,000	
NRB-XY820M450V16X31.5F	82		0.2	0.64	4.05	5,000	
NRB-XY101M450V14.5X45F	100		0.2	0.71	3.32	5,000	
NRB-XY101M450V16X35F	100		0.2	0.73	3.32	5,000	
NRB-XY121M450V14.5X50F	120		0.2	0.79	2.76	5,000	
NRB-XY121M450V16X40F	120		0.2	0.82	2.76	5,000	
NRB-XY121M450V18X31.5F	120		0.2	0.8	2.76	5,000	
NRB-XY151M450V16X50F	150		0.2	0.98	2.21	5,000	
NRB-XY151M450V18X40F	150		0.2	0.97	2.21	5,000	
NRB-XY181M450V18X45F	180		0.2	1.09	1.84	5,000	
NRB-XY221M450V18X50F	220		0.2	1.22	1.51	5,000	



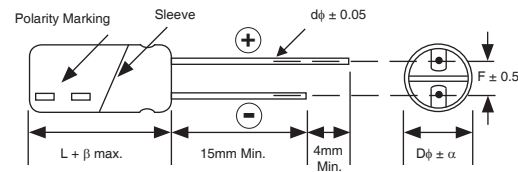
## RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	60	120	500	1K	≥10K
400 ~ 450V	0.8	1.0	1.25	1.40	1.50

## DIAMETER AND LEADSPACE (mm)

Case Dia. (Dφ)	10	12.5	14.5	16	18
Lead Dia. (dφ)	0.6	0.6	0.8	0.8	0.8
Lead Spacing (F)	5.0	5.0	7.5	7.5	7.5
Dim. α	0.5	0.5	0.5	0.5	0.5
Dim. β	2.0	2.0	2.0	2.0	2.0

## DIMENSIONS (mm)

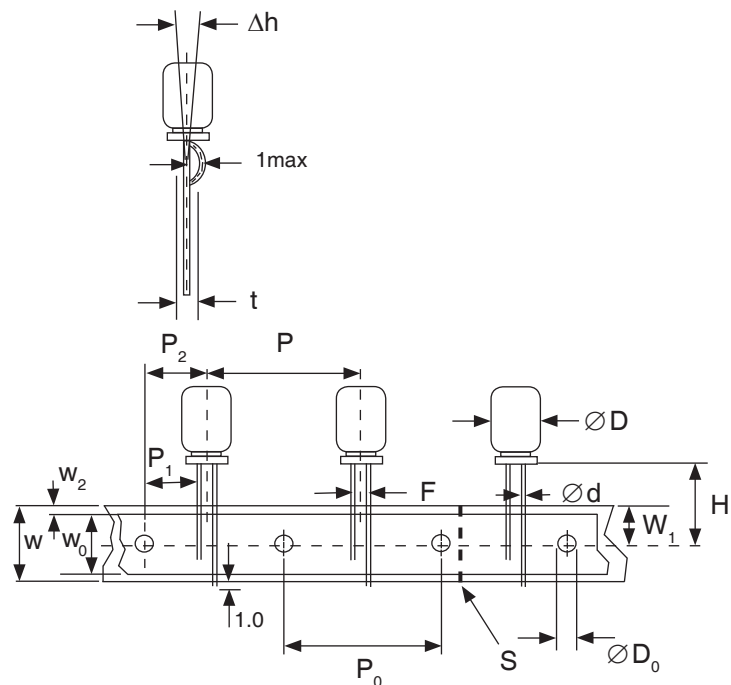


Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

## RADIAL TAPING (5mm LEAD SPACING) TB

Taping Dimensions (mm)

Case Dia. (Dφ)	10	12.5
Case Size	All	
Dim.	All	
dφ	0.6 ± 0.05	
H	18.5 +0.75/-0.5	
F	5.0 +0.8/-0.2	
P	12.7 ± 1.0	25.4* ± 1.0
P <sub>0</sub>	12.7 ± 0.2	
P <sub>1</sub>	3.85	
P <sub>2</sub>	6.35 ± 1.0	
W	18.0 ± 0.5	
W <sub>0</sub>	11.5 min	
W <sub>1</sub>	9.0 ± 0.5	
W <sub>2</sub>	0 ~ 2.5	
H <sub>0</sub>	16.0 ± 0.5	
l	1.0 max.	
D <sub>0</sub> φ	4.0 ± 0.2	
Δh	0 ± 1.0 (at top of can)	
t	0.7 ± 0.2 (not including lead)	
<b>*Optional Taping Specifications</b>		
12.5mm diameter available with P dim. = 15mm, P <sub>1</sub> = 5.0mm, P <sub>0</sub> = 15.0mm & P <sub>2</sub> = 7.5mm (P/N Suffix: TB15MMP)		



**NOTE:** ANODE (+) LEAD FEEDS OFF FIRST. FOR OPTION OF NEGATIVE (-) LEAD FIRST, SPECIFY "TBN".

