

# Miniature Aluminum Electrolytic Capacitors

NRB-XG Series

HIGH RIPPLE CURRENT, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC

## FEATURES

- LONG LIFE AT 105°C (8,000 HOURS)
- HIGH VOLTAGE (UP TO 400V)
- REDUCED SIZE & HIGH RIPPLE CURRENT

**RoHS  
Compliant**  
includes all homogeneous materials

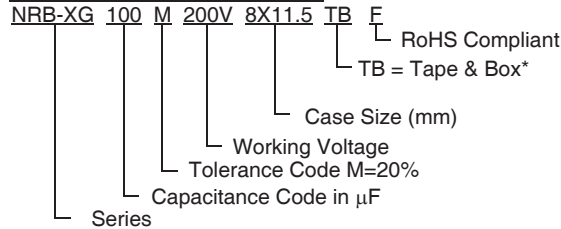
\*See Part Number System for Details



## CHARACTERISTICS

Rated Voltage Range	200 ~ 400Vdc		
Capacitance Range	1.5 ~ 27 $\mu$ F		
Operating Temperature Range	-40°C ~ +105°C		
Capacitance Tolerance	±20% (M)		
Maximum Leakage Current at 20°C	CV ≤ 1,000		CV > 1,000
	0.1CV + 40 $\mu$ A after 1 minutes		0.04CV + 100 $\mu$ A after 1 minutes
	0.03CV + 15 $\mu$ A after 5 minutes		0.02CV + 25 $\mu$ A after 5 minutes
Max. Tan $\delta$ at 120Hz/20°C	W.V. (Vdc)	200	400
	S.V. (Vdc)	250	450
	Tan $\delta$	0.20	0.25
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	200	400
	Z-25°C/Z+20°C	3	6
	Z-40°C/Z+20°C	8	16
Load Life Hours Load Life Test at Rated W.V. & 105°C	Test	8,000 Hours	
	Capacitance Change	Within ±20% of initial measured value	
	Tan $\delta$	Less than 200% of specified value	
	Leakage Current	Less than specified value	

## PART NUMBER SYSTEM



\*see tape specification 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](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 φ x L (mm)

Part Number	Cap. (μF)	W.V. (Vdc)	Dissipation Factor +20°C/120Hz	LC (μA) after 5 min.	Ripple Current Rating (Arms) +105°C/120Hz	Max. ESR (Ω) 120Hz	Load Life Hours @+105°C
NRB-XG4R7M200V6.3X11F	4.7	200	0.2	43.2	56	70.6	8000
NRB-XG5R6M200V6.3X11F	5.6		0.2	47.4	60	59.2	8000
NRB-XG6R8M200V6.3X11F	6.8		0.2	52.2	68	48.8	8000
NRB-XG8R2M200V8X11.5F	8.2		0.2	57.8	96	40.5	8000
NRB-XG100M200V8X11.5F	10		0.2	65	104	33.2	8000
NRB-XG120M200V8X11.5F	12		0.2	73	112	27.6	8000
NRB-XG150M200V8X16F	15		0.2	85	144	22.1	8000
NRB-XG150M200V10X12.5F	15		0.2	85	148	22.1	8000
NRB-XG180M200V10X12.5F	18		0.2	97	164	18.4	8000
NRB-XG220M200V10X16F	22		0.2	113	200	15.1	8000
NRB-XG270M200V10X16F	27		0.2	133	208	12.3	8000
NRB-XG1R5M400V6.3X11F	1.5		400	0.25	33	36	276.5
NRB-XG1R8M400V6.3X11F	1.8	0.25		36.6	38	230.4	8000
NRB-XG2R2M400V6.3X11F	2.2	0.25		41.4	40	188.5	8000
NRB-XG2R7M400V8X11.5F	2.7	0.25		46.6	60	153.6	8000
NRB-XG3R3M400V8X11.5F	3.3	0.25		51.4	64	125.7	8000
NRB-XG3R9M400V8X11.5F	3.9	0.25		56.2	68	106.3	8000
NRB-XG4R7M400V8X16F	4.7	0.25		62.6	88	88.2	8000
NRB-XG4R7M400V10X12.5F	4.7	0.25		62.6	92	88.2	8000
NRB-XG5R6M400V10X12.5F	5.6	0.25		69.8	100	74.0	8000
NRB-XG6R8M400V10X16F	6.8	0.25		79.4	120	61.0	8000
NRB-XG8R2M400V10X16F	8.2	0.25		90.6	128	50.6	8000

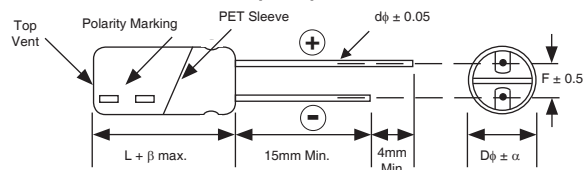
### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	120	1K	10K	100K
1.5μF ~ 27 μF	1.0	1.7	2.2	2.5

### DIAMETER AND LEADSPACE (mm)

Case Dia. (Dφ)	6.3	8.0	10
Lead Dia. (dφ)	0.5	0.6	0.6
Lead Spacing (F)	2.5	3.5	5.0
Dim. α	0.5	0.5	0.5
Dim. β	2.0	2.0	2.0

### DIMENSIONS (mm)

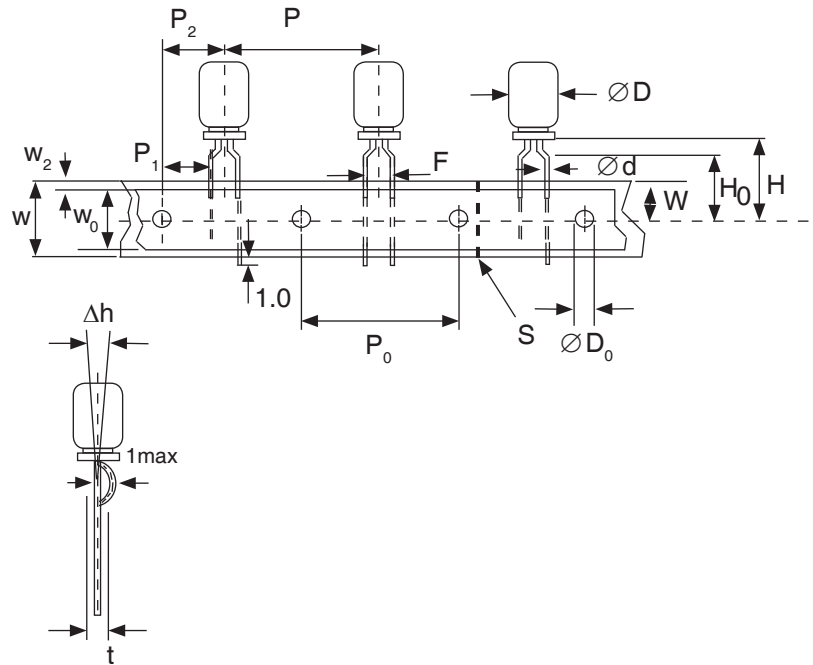


Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specification for details on taped format packaging.

## STANDARD RADIAL TAPING (5mm LEAD SPACING, FORMED LEADS) TB

Taping Dimensions (mm)

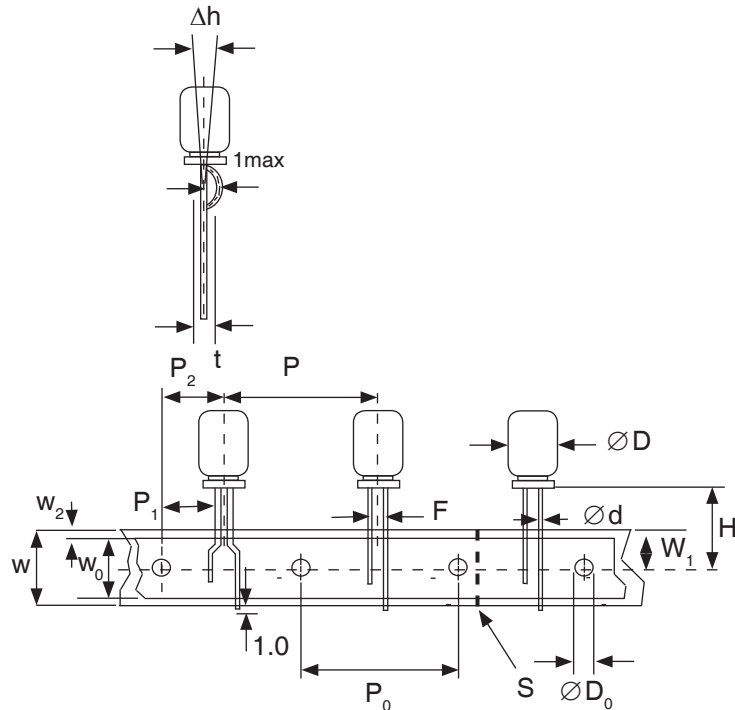
Case Dia. (D $\phi$ )	6.3	8
Case Size Dim.	6.3x11	8x11.5
d $\phi$ $\pm$ 0.05	0.5	0.6
H $\pm$ 0.75	18.5	20.0
F +0.8 ~ -0.2	5.0 -0.2 ~ +0.8	
P	12.7 $\pm$ 1.0	
P <sub>0</sub>	12.7 $\pm$ 0.2	
P <sub>1</sub>	3.85 $\pm$ 0.5 (at end of tape)	
P <sub>2</sub>	6.35 $\pm$ 1.0	
W	18.0 $\pm$ 0.5	
W <sub>0</sub>	11.5 min.	
W <sub>1</sub>	9.0 $\pm$ 0.5	
W <sub>2</sub>	0 ~ 2.5	
H <sub>0</sub>	16.0 $\pm$ 0.5	
l	1.0 max.	
D <sub>0</sub> $\phi$	4.0 $\pm$ 0.2	
$\Delta$ h	0 $\pm$ 1.0 (at top of can)	
t	0.7 $\pm$ 0.2 (not including lead)	



## SPECIAL STRAIGHT LEAD TAPING TBST\*

Taping Dimensions (mm)

Case Dia. (D $\phi$ )	6.3	8
Case Size Dim.	6.3x11	8x11.5
d $\phi$ $\pm$ 0.05	0.5	0.6
H $\pm$ 0.75	18.5	20.0
F +0.8 ~ -0.2	2.5	3.5
P $\pm$ 1.0	12.7 $\pm$ 0.2	
P <sub>0</sub>	12.7 $\pm$ 0.2	
P <sub>1</sub>	5.1	4.6
P <sub>2</sub>	6.35 $\pm$ 1.0	
W	18.0 $\pm$ 0.5	
W <sub>0</sub>	11.5 min.	
W <sub>1</sub>	9.0 $\pm$ 0.5	
W <sub>2</sub>	0 ~ 2.5	
H <sub>0</sub>	16.0 $\pm$ 0.5	
l	1.0 max.	
D <sub>0</sub> $\phi$	4.0 $\pm$ 0.2	
$\Delta$ h	0 $\pm$ 1.0 (at top of can)	
t	0.7 $\pm$ 0.2 (not including lead)	



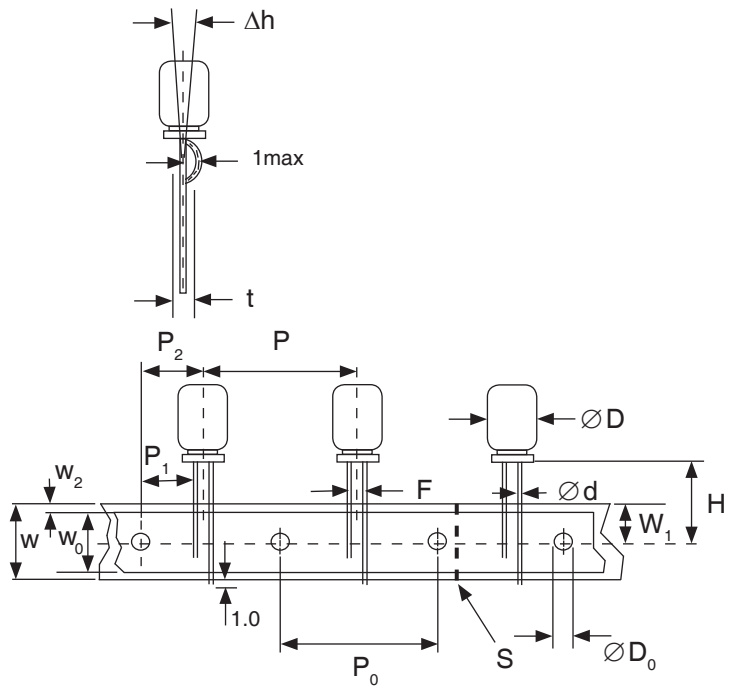
\*Straight leads will extend from the based of the component to the edge of the carrier. The section of lead below the adhesive tape may be straight or formed.



### RADIAL TAPING (5mm LEAD SPACING) TB

Taping Dimensions (mm)

Case Dia. (D $\phi$ )	10
Case Size	All
Dim.	
d $\phi$	0.6 $\pm$ 0.05
H	18.5 +0.75/-0.5
F	5.0 +0.8/-0.2
P	12.7 $\pm$ 1.0
P <sub>0</sub>	12.7 $\pm$ 0.2
P <sub>1</sub>	3.85
P <sub>2</sub>	6.35 $\pm$ 1.0
W	18.0 $\pm$ 0.5
W <sub>0</sub>	11.5 min
W <sub>1</sub>	9.0 $\pm$ 0.5
W <sub>2</sub>	0 ~ 2.5
H <sub>0</sub>	16.0 $\pm$ 0.5
l	1.0 max.
D <sub>0</sub> $\phi$	4.0 $\pm$ 0.2
$\Delta h$	0 $\pm$ 1.0 (at top of can)
t	0.7 $\pm$ 0.2 (not including lead)



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