

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors

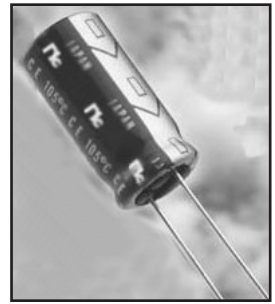


MINIATURE, EXTENDED LOAD LIFE, RADIAL LEADS, POLARIZED

### FEATURES

- HIGH RIPPLE CURRENT
- LONG LIFE AT HIGH TEMPERATURE (UP TO 12,000 Hours @ +105°C)
- MEETS THE REQUIREMENTS OF AEC-Q200\*

\* Contact NIC for supporting test data



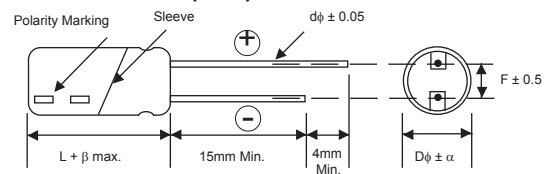
### CHARACTERISTICS

Rated Voltage Range		160 ~ 450VDC							
Capacitance Range		10 ~ 820 $\mu$ F							
Operating Temperature Range		-40°C ~ +105°C							
Capacitance Tolerance		$\pm$ 20% (M)							
Maximum Leakage Current @ +20°C		3x $\sqrt{CV}$ after 5 minute at rated voltage							
Max. Tan $\delta$ at 120Hz/20°C	W.V. (Vdc)	160	200	220	250	350	400	420	450
	S.V. (Vdc)	200	250	270	300	400	450	470	500
	Tan $\delta$	0.2	0.2	0.2	0.2	0.2	0.2	0.25	0.25
Low Temperature Stability Impedance Ratio @ 120Hz	W.V. (Vdc)	160	200	220	250	350	400	420	450
	Z-25°C/Z+20°C	3	3	3	3	5	5	6	6
	Z-40°C/Z+20°C	6	6	6	6	6	6	10	10
Load Life at W.V. & 105°C L $\leq$ 20mm: 10,000 Hours L $\geq$ 25mm: 12,000 Hours	$\Delta$ Capacitance	Within $\pm$ 20% of initial measured value							
	$\Delta$ Tan $\delta$	Less than 200% of specified maximum value							
	$\Delta$ LC	Less than specified maximum value							

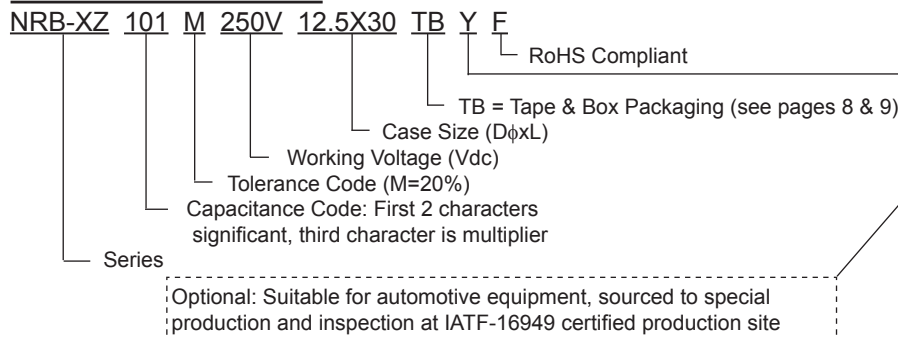
### LEAD SPACING AND DIAMETER (mm)

Case Dia. (D $\phi$ )	10	12.5	14.5	16	18
Lead Dia. (d $\phi$ )	0.6		0.8		
Lead Spacing (F)	5.0		7.5		
Dim. $\alpha$	0.5				
Dim. $\beta$	2.0				

### DIMENSIONS (mm)



### PART NUMBER SYSTEM



### PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>  
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)

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	Vdc	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)
					120Hz	100KHz	
NRB-XZ470M160V10X16F	47	160	0.2	7.06	0.260	0.650	10000
NRB-XZ680M160V10X20F	68		0.2	4.88	0.320	0.800	10000
NRB-XZ820M160V16X16F	82		0.2	4.05	0.540	1.350	10000
NRB-XZ101M160V10X25F	100		0.2	3.32	0.530	1.193	12000
NRB-XZ101M160V12.5X20F	100		0.2	3.32	0.600	1.350	10000
NRB-XZ101M160V18X16F	100		0.2	3.32	0.690	1.553	10000
NRB-XZ121M160V10X30F	120		0.2	2.76	0.620	1.395	12000
NRB-XZ151M160V10X35F	150		0.2	2.21	0.700	1.575	12000
NRB-XZ151M160V12.5X25F	150		0.2	2.21	0.730	1.643	12000
NRB-XZ151M160V14.5X20F	150		0.2	2.21	0.800	1.800	10000
NRB-XZ181M160V10X40F	180		0.2	1.84	0.800	1.800	12000
NRB-XZ181M160V12.5X30F	180		0.2	1.84	0.870	1.958	12000
NRB-XZ181M160V16X20F	180		0.2	1.84	0.800	1.800	10000
NRB-XZ221M160V10X50F	220		0.2	1.51	1.000	2.250	12000
NRB-XZ221M160V12.5X35F	220		0.2	1.51	1.000	2.250	12000
NRB-XZ221M160V14.5X25F	220		0.2	1.51	0.890	2.003	12000
NRB-XZ221M160V18X20F	220		0.2	1.51	0.990	2.228	10000
NRB-XZ271M160V12.5X40F	270		0.2	1.23	1.120	2.240	12000
NRB-XZ271M160V14.5X30F	270		0.2	1.23	1.100	2.200	12000
NRB-XZ271M160V16X25F	270		0.2	1.23	1.000	2.000	12000
NRB-XZ331M160V12.5X45F	330		0.2	1.01	1.240	2.480	12000
NRB-XZ331M160V14.5X35F	330		0.2	1.01	1.220	2.440	12000
NRB-XZ331M160V16X30F	330		0.2	1.01	1.200	2.400	12000
NRB-XZ331M160V18X25F	330		0.2	1.01	1.180	2.360	12000
NRB-XZ391M160V14.5X40F	390		0.2	0.85	1.380	2.760	12000
NRB-XZ391M160V16X35F	390		0.2	0.85	1.380	2.760	12000
NRB-XZ471M160V14.5X45F	470		0.2	0.71	1.520	3.040	12000
NRB-XZ471M160V16X40F	470		0.2	0.71	1.550	3.100	12000
NRB-XZ471M160V18X30F	470		0.2	0.71	1.550	3.100	12000
NRB-XZ561M160V16X45F	560		0.2	0.59	1.760	3.520	12000
NRB-XZ561M160V18X35F	560		0.2	0.59	1.740	3.480	12000
NRB-XZ681M160V18X40F	680		0.2	0.49	2.000	4.000	12000
NRB-XZ821M160V18X50F	820		0.2	0.40	2.230	4.460	12000
NRB-XZ330M200V10X16F	33	200	0.2	10.05	0.260	0.650	10000
NRB-XZ470M200V10X20F	47		0.2	7.06	0.320	0.800	10000
NRB-XZ560M200V16X16F	56		0.2	5.92	0.540	1.350	10000
NRB-XZ680M200V10X25F	68		0.2	4.88	0.430	1.075	12000
NRB-XZ680M200V12.5X20F	68		0.2	4.88	0.540	1.350	10000
NRB-XZ820M200V10X30F	82		0.2	4.05	0.500	1.250	12000
NRB-XZ820M200V18X16F	82		0.2	4.05	0.620	1.550	10000
NRB-XZ101M200V10X35F	100		0.2	3.32	0.640	1.440	12000
NRB-XZ101M200V14.5X20F	100		0.2	3.32	0.580	1.305	10000
NRB-XZ121M200V10X40F	120		0.2	2.76	0.740	1.665	12000
NRB-XZ121M200V12.5X25F	120		0.2	2.76	0.650	1.463	12000
NRB-XZ121M200V16X20F	120		0.2	2.76	0.800	1.800	10000
NRB-XZ151M200V10X45F	150		0.2	2.21	0.780	1.755	12000
NRB-XZ151M200V12.5X30F	150		0.2	2.21	0.800	1.800	12000
NRB-XZ151M200V14.5X25F	150		0.2	2.21	0.790	1.778	12000
NRB-XZ181M200V12.5X35F	180		0.2	1.84	0.920	2.070	12000
NRB-XZ181M200V14.5X30F	180		0.2	1.84	0.950	2.138	12000
NRB-XZ181M200V16X25F	180		0.2	1.84	0.900	2.025	12000
NRB-XZ181M200V18X20F	180		0.2	1.84	1.000	2.250	10000
NRB-XZ221M200V12.5X40F	220		0.2	1.51	1.050	2.363	12000
NRB-XZ221M200V14.5X35F	220		0.2	1.51	1.090	2.453	12000
NRB-XZ221M200V16X30F	220		0.2	1.51	1.080	2.430	12000

### Performance Passives By Design

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	Vdc	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)	
					120Hz	100KHz		
NRB-XZ271M200V12.5X50F	270	200	0.2	1.23	1.260	2.520	12000	
NRB-XZ271M200V14.5X40F	270		0.2	1.23	1.260	2.520	12000	
NRB-XZ271M200V16X30F	270		0.2	1.23	1.180	2.360	12000	
NRB-XZ271M200V18X25F	270		0.2	1.23	1.100	2.200	12000	
NRB-XZ331M200V14.5X45F	330		0.2	1.01	1.370	2.740	12000	
NRB-XZ331M200V16X40F	330		0.2	1.01	1.430	2.860	12000	
NRB-XZ331M200V18X30F	330		0.2	1.01	1.300	2.600	12000	
NRB-XZ391M200V14.5X50F	390		0.2	0.85	1.480	2.960	12000	
NRB-XZ391M200V16X45F	390		0.2	0.85	1.550	3.100	12000	
NRB-XZ391M200V18X35F	390		0.2	0.85	1.430	2.860	12000	
NRB-XZ471M200V16X50F	470		0.2	0.71	1.680	3.360	12000	
NRB-XZ471M200V18X40F	470		0.2	0.71	1.620	3.240	12000	
NRB-XZ561M200V18X45F	560		0.2	0.59	1.770	3.540	12000	
NRB-XZ330M220V10X16F	33		220	0.2	10.05	0.240	0.600	10000
NRB-XZ470M220V10X20F	47	0.2		7.06	0.300	0.750	10000	
NRB-XZ560M220V10X25F	56	0.2		5.92	0.400	1.000	12000	
NRB-XZ680M220V12.5X20F	68	0.2		4.88	0.480	1.200	10000	
NRB-XZ821M220V10X30F	82	0.2		4.05	0.500	1.250	12000	
NRB-XZ101M220V10X35F	100	0.2		3.32	0.640	1.440	12000	
NRB-XZ101M220V12.5X25F	100	0.2		3.32	0.620	1.395	12000	
NRB-XZ101M220V14.5X20F	100	0.2		3.32	0.600	1.350	10000	
NRB-XZ121M220V10X45F	120	0.2		2.76	0.750	1.688	12000	
NRB-XZ121M220V12.5X30F	120	0.2		2.76	0.740	1.665	12000	
NRB-XZ121M220V14.5X25F	120	0.2		2.76	0.750	1.688	12000	
NRB-XZ121M220V16X20F	120	0.2		2.76	0.680	1.530	10000	
NRB-XZ151M220V12.5X35F	150	0.2		2.21	0.880	1.980	12000	
NRB-XZ151M220V18X20F	150	0.2		2.21	0.830	1.868	10000	
NRB-XZ181M220V12.5X40F	180	0.2		1.84	1.020	2.295	12000	
NRB-XZ181M220V14.5X30F	180	0.2		1.84	0.910	2.048	12000	
NRB-XZ181M220V16X25F	180	0.2		1.84	0.900	2.025	12000	
NRB-XZ221M220V12.5X45F	220	0.2		1.51	1.050	2.363	12000	
NRB-XZ221M220V14.5X35F	220	0.2		1.51	1.040	2.340	12000	
NRB-XZ221M220V16X30F	220	0.2		1.51	1.030	2.318	12000	
NRB-XZ221M220V18X25F	220	0.2		1.51	0.990	2.228	12000	
NRB-XZ271M220V14.5X45F	270	0.2		1.23	1.300	2.600	12000	
NRB-XZ271M220V16X35F	270	0.2		1.23	1.190	2.380	12000	
NRB-XZ271M220V18X30F	270	0.2		1.23	1.170	2.340	12000	
NRB-XZ331M220V14.5X50F	330	0.2		1.01	1.410	2.820	12000	
NRB-XZ331M220V16X40F	330	0.2		1.01	1.360	2.720	12000	
NRB-XZ331M220V18X35F	330	0.2		1.01	1.350	2.700	12000	
NRB-XZ391M220V16X45F	390	0.2		0.85	1.480	2.960	12000	
NRB-XZ391M220V18X40F	390	0.2		0.85	1.550	3.100	12000	
NRB-XZ471M220V18X45F	470	0.2		0.71	1.690	3.380	12000	
NRB-XZ561M220V18X50F	560	0.2		0.59	1.800	3.600	12000	
NRB-XZ270M250V10X16F	27	250		0.2	12.29	0.260	0.650	10000
NRB-XZ390M250V10X20F	39			0.2	8.51	0.320	0.800	10000
NRB-XZ470M250V10X25F	47			0.2	7.06	0.390	0.975	12000
NRB-XZ470M250V16X16F	47		0.2	7.06	0.540	1.350	10000	
NRB-XZ560M250V12.5X20F	56		0.2	5.92	0.540	1.350	10000	
NRB-XZ560M250V18X16F	56		0.2	5.92	0.620	1.550	10000	
NRB-XZ680M250V10X30F	68		0.2	4.88	0.500	1.250	12000	
NRB-XZ820M250V10X35F	82		0.2	4.05	0.570	1.425	12000	
NRB-XZ820M250V12.5X25F	82		0.2	4.05	0.570	1.425	12000	
NRB-XZ820M250V14.5X20F	82		0.2	4.05	0.500	1.250	10000	
NRB-XZ101M250V10X45F	100		0.2	3.32	0.720	1.620	12000	
NRB-XZ101M250V12.5X30F	100		0.2	3.32	0.690	1.553	12000	
NRB-XZ101M250V16X20F	100		0.2	3.32	0.800	1.800	10000	
NRB-XZ121M250V10X50F	120		0.2	2.76	0.780	1.755	12000	

### Performance Passives By Design

NIC Components Corp.  
100 Baylis Road. Melville, NY 11747

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (µF)	Vdc	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)
					120Hz	100KHz	
NRB-XZ121M250V12.5X35F	120	250	0.2	2.76	0.790	1.778	12000
NRB-XZ121M250V14.5X25F	120		0.2	2.76	0.750	1.688	12000
NRB-XZ121M250V18X20F	120		0.2	2.76	1.000	2.250	10000
NRB-XZ151M250V12.5X40F	150		0.2	2.21	0.920	2.070	12000
NRB-XZ151M250V14.5X30F	150		0.2	2.21	0.830	1.868	12000
NRB-XZ151M250V16X25F	150		0.2	2.21	0.840	1.890	12000
NRB-XZ181M250V12.5X45F	180		0.2	1.84	0.970	2.183	12000
NRB-XZ181M250V14.5X35F	180		0.2	1.84	0.960	2.160	12000
NRB-XZ181M250V16X30F	180		0.2	1.84	0.950	2.138	12000
NRB-XZ181M250V18X25F	180		0.2	1.84	0.920	2.070	12000
NRB-XZ221M250V14.5X40F	220		0.2	1.51	1.110	2.498	12000
NRB-XZ221M250V16X35F	220		0.2	1.51	1.100	2.475	12000
NRB-XZ221M250V18X30F	220		0.2	1.51	1.100	2.475	12000
NRB-XZ271M250V14.5X50F	270		0.2	1.23	1.300	2.600	12000
NRB-XZ271M250V16X40F	270		0.2	1.23	1.270	2.540	12000
NRB-XZ271M250V18X35F	270		0.2	1.23	1.260	2.520	12000
NRB-XZ331M250V16X50F	330		0.2	1.01	1.480	2.960	12000
NRB-XZ331M250V18X40F	330		0.2	1.01	1.450	2.900	12000
NRB-XZ391M250V18X45F	390		0.2	0.85	1.590	3.180	12000
NRB-XZ471M250V18X50F	470		0.2	0.71	1.830	3.660	12000
NRB-XZ180M350V10X16F	18	350	0.2	18.43	0.160	0.400	10000
NRB-XZ220M350V10X20F	22		0.2	15.08	0.200	0.500	10000
NRB-XZ270M350V16X16F	27		0.2	12.29	0.310	0.775	10000
NRB-XZ330M350V10X25F	33		0.2	10.05	0.330	0.825	12000
NRB-XZ330M350V12.5X20F	33		0.2	10.05	0.340	0.850	10000
NRB-XZ330M350V18X16F	33		0.2	10.05	0.380	0.950	10000
NRB-XZ390M350V10X30F	39		0.2	8.51	0.390	0.975	12000
NRB-XZ470M350V10X35F	47		0.2	7.06	0.450	1.125	12000
NRB-XZ470M350V12.5X25F	47		0.2	7.06	0.450	1.125	12000
NRB-XZ470M350V14.5X20F	47		0.2	7.06	0.420	1.050	10000
NRB-XZ560M350V10X40F	56		0.2	5.92	0.520	1.300	12000
NRB-XZ560M350V12.5X30F	56		0.2	5.92	0.550	1.375	12000
NRB-XZ560M350V16X20F	56		0.2	5.92	0.480	1.200	10000
NRB-XZ680M350V10X50F	68		0.2	4.88	0.600	1.500	12000
NRB-XZ680M350V12.5X35F	68		0.2	4.88	0.610	1.525	12000
NRB-XZ680M350V14.5X25F	68		0.2	4.88	0.560	1.400	12000
NRB-XZ820M350V12.5X40F	82		0.2	4.05	0.710	1.775	12000
NRB-XZ820M350V14.5X30F	82		0.2	4.05	0.670	1.675	12000
NRB-XZ820M350V16X25F	82		0.2	4.05	0.650	1.625	12000
NRB-XZ820M350V18X20F	82		0.2	4.05	0.520	1.300	10000
NRB-XZ101M350V12.5X45F	100		0.2	3.32	0.790	1.778	12000
NRB-XZ101M350V14.5X35F	100		0.2	3.32	0.780	1.755	12000
NRB-XZ101M350V16X30F	100		0.2	3.32	0.770	1.733	12000
NRB-XZ101M350V18X25F	100		0.2	3.32	0.760	1.710	12000
NRB-XZ121M350V12.5X50F	120		0.2	2.76	0.850	1.913	12000
NRB-XZ121M350V14.5X40F	120		0.2	2.76	0.900	2.025	12000
NRB-XZ121M350V16X35F	120		0.2	2.76	0.890	2.003	12000
NRB-XZ151M350V14.5X45F	150		0.2	2.21	0.970	2.183	12000
NRB-XZ151M350V16X40F	150		0.2	2.21	1.000	2.250	12000
NRB-XZ151M350V18X30F	150		0.2	2.21	0.900	2.025	12000
NRB-XZ181M350V16X45F	180	0.2	1.84	1.120	2.520	12000	
NRB-XZ181M350V18X35F	180	0.2	1.84	1.040	2.340	12000	
NRB-XZ221M350V18X40F	220	0.2	1.51	1.200	2.700	12000	
NRB-XZ271M350V18X50F	270	0.2	1.23	1.400	2.800	12000	
NRB-XZ120M400V10X16F	12	400	0.2	27.65	0.160	0.400	10000
NRB-XZ180M400V10X20F	18		0.2	18.43	0.220	0.550	10000
NRB-XZ180M400V16X16F	18		0.2	18.43	0.230	0.575	10000

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	Vdc	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)
					120Hz	100KHz	
NRB-XZ220M400V10X25F	22	400V	0.2	15.08	0.240	0.600	12000
NRB-XZ270M400V10X25F	27		0.2	12.29	0.290	0.725	12000
NRB-XZ270M400V12.5X20F	27		0.2	12.29	0.340	0.850	10000
NRB-XZ270M400V18X16F	27		0.2	12.29	0.380	0.950	10000
NRB-XZ330M400V10X30F	33		0.2	10.05	0.340	0.850	12000
NRB-XZ390M400V10X35F	39		0.2	8.51	0.390	0.975	12000
NRB-XZ390M400V12.5X25F	39		0.2	8.51	0.390	0.975	12000
NRB-XZ390M400V14.5X20F	39		0.2	8.51	0.360	0.900	10000
NRB-XZ470M400V10X40F	47		0.2	7.06	0.440	1.100	12000
NRB-XZ470M400V12.5X30F	47		0.2	7.06	0.455	1.138	12000
NRB-XZ470M400V16X20F	47		0.2	7.06	0.470	1.175	10000
NRB-XZ560M400V10X45F	56		0.2	5.92	0.500	1.250	12000
NRB-XZ560M400V12.5X30F	56		0.2	5.92	0.495	1.238	12000
NRB-XZ560M400V12.5X35F	56		0.2	5.92	0.525	1.313	12000
NRB-XZ560M400V14.5X25F	56		0.2	5.92	0.495	1.238	12000
NRB-XZ560M400V16X20F	56		0.2	5.92	0.480	1.200	10000
NRB-XZ560M400V18X20F	56		0.2	5.92	0.520	1.300	10000
NRB-XZ680M400V12.5X35F	68		0.2	4.88	0.570	1.425	12000
NRB-XZ680M400V12.5X40F	68		0.2	4.88	0.600	1.500	12000
NRB-XZ680M400V14.5X30F	68		0.2	4.88	0.585	1.463	12000
NRB-XZ680M400V16X25F	68		0.2	4.88	0.570	1.425	12000
NRB-XZ680M400V18X20F	68		0.2	4.88	0.530	1.325	10000
NRB-XZ820M400V12.5X40F	82		0.2	4.05	0.650	1.625	12000
NRB-XZ820M400V12.5X45F	82		0.2	4.05	0.680	1.700	12000
NRB-XZ820M400V14.5X35F	82		0.2	4.05	0.670	1.675	12000
NRB-XZ820M400V16X30F	82		0.2	4.05	0.670	1.675	12000
NRB-XZ820M400V18X25F	82		0.2	4.05	0.640	1.600	12000
NRB-XZ101M400V12.5X50F	100		0.2	3.32	0.760	1.710	12000
NRB-XZ101M400V14.5X40F	100		0.2	3.32	0.760	1.710	12000
NRB-XZ101M400V14.5X45F	100		0.2	3.32	0.785	1.766	12000
NRB-XZ101M400V16X30F	100		0.2	3.32	0.710	1.598	12000
NRB-XZ101M400V16X35F	100		0.2	3.32	0.760	1.710	12000
NRB-XZ101M400V18X25F	100		0.2	3.32	0.710	1.598	12000
NRB-XZ121M400V14.5X45F	120		0.2	2.76	0.840	1.890	12000
NRB-XZ121M400V14.5X50F	120		0.2	2.76	0.875	1.969	12000
NRB-XZ121M400V16X35F	120		0.2	2.76	0.810	1.823	12000
NRB-XZ121M400V16X40F	120		0.2	2.76	0.860	1.935	12000
NRB-XZ121M400V18X30F	120		0.2	2.76	0.840	1.890	12000
NRB-XZ121M400V18X35F	120		0.2	2.76	0.870	1.958	12000
NRB-XZ151M400V16X45F	150		0.2	2.21	0.950	2.138	12000
NRB-XZ151M400V16X50F	150	0.2	2.21	0.995	2.239	12000	
NRB-XZ151M400V18X35F	150	0.2	2.21	0.920	2.070	12000	
NRB-XZ151M400V18X40F	150	0.2	2.21	0.985	2.216	12000	
NRB-XZ181M400V16X50F	180	0.2	1.84	1.070	2.408	12000	
NRB-XZ181M400V18X40F	180	0.2	1.84	1.040	2.340	12000	
NRB-XZ181M400V18X45F	180	0.2	1.84	1.095	2.464	12000	
NRB-XZ221M400V18X50F	220	0.2	1.51	1.220	2.745	12000	
NRB-XZ150M420V10X20F	15	420	0.25	27.65	0.190	0.475	10000
NRB-XZ180M420V10X25F	18		0.25	23.04	0.230	0.575	12000
NRB-XZ220M420V10X25F	22		0.25	18.85	0.250	0.625	12000
NRB-XZ270M420V10X30F	27		0.25	15.36	0.290	0.725	12000
NRB-XZ270M420V12.5X20F	27		0.25	15.36	0.300	0.750	10000
NRB-XZ270M420V12.5X25F	27		0.25	15.36	0.340	0.850	12000
NRB-XZ330M420V10X35F	33		0.25	12.57	0.340	0.850	12000
NRB-XZ330M420V12.5X25F	33		0.25	12.57	0.350	0.875	12000
NRB-XZ330M420V12.5X30F	33		0.25	12.57	0.400	1.000	12000
NRB-XZ330M420V14.5X20F	33		0.25	12.57	0.350	0.875	10000
NRB-XZ390M420V10X40F	39		0.25	10.63	0.390	0.975	12000
NRB-XZ390M420V14.5X25F	39		0.25	10.63	0.435	1.088	12000
NRB-XZ390M420V16X20F	39		0.25	10.63	0.400	1.000	10000

### Performance Passives By Design

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	Vdc	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)
					120Hz	100KHz	
NRB-XZ470M420V10X45F	47	420	0.25	8.82	0.440	1.100	12000
NRB-XZ470M420V12.5X30F	47		0.25	8.82	0.440	1.100	12000
NRB-XZ470M420V12.5X35F	47		0.25	8.82	0.505	1.263	12000
NRB-XZ470M420V14.5X25F	47		0.25	8.82	0.450	1.125	12000
NRB-XZ470M420V16X25F	47		0.25	8.82	0.440	1.100	12000
NRB-XZ560M420V12.5X35F	56		0.25	7.40	0.510	1.275	12000
NRB-XZ560M420V12.5X40F	56		0.25	7.40	0.570	1.425	12000
NRB-XZ560M420V14.5X30F	56		0.25	7.40	0.560	1.400	12000
NRB-XZ560M420V16X25F	56		0.25	7.40	0.510	1.275	12000
NRB-XZ560M420V18X20F	56		0.25	7.40	0.480	1.200	10000
NRB-XZ680M420V12.5X45F	68		0.25	6.10	0.600	1.500	12000
NRB-XZ680M420V12.5X50F	68		0.25	6.10	0.670	1.675	12000
NRB-XZ680M420V14.5X35F	68		0.25	6.10	0.640	1.600	12000
NRB-XZ680M420V16X30F	68		0.25	6.10	0.560	1.400	12000
NRB-XZ680M420V18X25F	68		0.25	6.10	0.615	1.538	12000
NRB-XZ820M420V12.5X50F	82		0.25	5.06	0.690	1.725	12000
NRB-XZ820M420V14.5X40F	82		0.25	5.06	0.680	1.700	12000
NRB-XZ820M420V14.5X45F	82		0.25	5.06	0.750	1.875	12000
NRB-XZ820M420V16X30F	82		0.25	5.06	0.640	1.600	12000
NRB-XZ820M420V16X35F	82		0.25	5.06	0.690	1.725	12000
NRB-XZ820M420V18X25F	82		0.25	5.06	0.640	1.600	12000
NRB-XZ820M420V18X30F	82		0.25	5.06	0.730	1.825	12000
NRB-XZ101M420V14.5X45F	100		0.25	4.15	0.790	1.778	12000
NRB-XZ101M420V14.5X50F	100		0.25	4.15	0.845	1.901	12000
NRB-XZ101M420V16X35F	100		0.25	4.15	0.730	1.643	12000
NRB-XZ101M420V16X40F	100		0.25	4.15	0.800	1.800	12000
NRB-XZ101M420V18X30F	100		0.25	4.15	0.780	1.755	12000
NRB-XZ101M420V18X35F	100		0.25	4.15	0.835	1.879	12000
NRB-XZ121M420V16X40F	120		0.25	3.46	0.840	1.890	12000
NRB-XZ121M420V16X45F	120		0.25	3.46	0.920	2.070	12000
NRB-XZ121M420V18X35F	120	0.25	3.46	0.850	1.913	12000	
NRB-XZ121M420V18X40F	120	0.25	3.46	0.930	2.093	12000	
NRB-XZ151M420V16X50F	150	0.25	2.76	0.940	2.115	12000	
NRB-XZ151M420V18X40F	150	0.25	2.76	1.000	2.250	12000	
NRB-XZ151M420V18X45F	150	0.25	2.76	1.060	2.385	12000	
NRB-XZ181M420V18X45F	180	0.25	2.30	1.100	2.475	12000	
NRB-XZ100M450V10X16F	10	450	0.25	41.47	0.130	0.325	10000
NRB-XZ150M450V10X20F	15		0.25	27.65	0.190	0.475	10000
NRB-XZ150M450V16X16F	15		0.25	27.65	0.210	0.525	10000
NRB-XZ180M450V10X25F	18		0.25	23.04	0.230	0.575	12000
NRB-XZ220M450V10X30F	22		0.25	18.85	0.270	0.675	12000
NRB-XZ220M450V12.5X20F	22		0.25	18.85	0.280	0.700	10000
NRB-XZ220M450V18X16F	22		0.25	18.85	0.340	0.850	10000
NRB-XZ270M450V10X35F	27		0.25	15.36	0.320	0.800	12000
NRB-XZ270M450V12.5X25F	27		0.25	15.36	0.340	0.850	12000
NRB-XZ270M450V14.5X20F	27		0.25	15.36	0.335	0.838	10000
NRB-XZ330M450V10X40F	33		0.25	12.57	0.360	0.900	12000
NRB-XZ330M450V12.5X25F	33		0.25	12.57	0.360	0.900	12000
NRB-XZ330M450V12.5X30F	33		0.25	12.57	0.400	1.000	12000
NRB-XZ330M450V14.5X25F	33		0.25	12.57	0.400	1.000	12000
NRB-XZ390M450V10X45F	39		0.25	10.63	0.410	1.025	12000
NRB-XZ390M450V12.5X30F	39		0.25	10.63	0.430	1.075	12000
NRB-XZ390M450V12.5X35F	39		0.25	10.63	0.460	1.150	12000
NRB-XZ390M450V14.5X25F	39		0.25	10.63	0.430	1.075	12000
NRB-XZ390M450V16X20F	39		0.25	10.63	0.400	1.000	10000

# NRB-XZ Series

## Radial Aluminum Electrolytic Capacitors



### STANDARD VALUES, SPECIFICATIONS AND CASE SIZES (mm)

Part Number	Cap. (μF)	Volt.	Dissipation Factor +20°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Ripple Current Rating (Arms) +105°C		Load Life (Hours @ +105°C)
					120Hz	100KHz	
NRB-XZ470M450V12.5X35F	47	450	0.25	8.82	0.480	1.200	12000
NRB-XZ470M450V12.5X40F	47		0.25	8.82	0.525	1.313	12000
NRB-XZ470M450V14.5X30F	47		0.25	8.82	0.515	1.288	12000
NRB-XZ470M450V16X25F	47		0.25	8.82	0.500	1.250	12000
NRB-XZ470M450V18X20F	47		0.25	8.82	0.460	1.150	10000
NRB-XZ560M450V12.5X40F	56		0.25	7.40	0.540	1.350	12000
NRB-XZ560M450V12.5X45F	56		0.25	7.40	0.590	1.475	12000
NRB-XZ560M450V14.5X30F	56		0.25	7.40	0.540	1.350	12000
NRB-XZ560M450V14.5X35F	56		0.25	7.40	0.580	1.450	12000
NRB-XZ560M450V16X25F	56		0.25	7.40	0.530	1.325	12000
NRB-XZ560M450V16X30F	56		0.25	7.40	0.585	1.463	12000
NRB-XZ560M450V18X25F	56		0.25	7.40	0.560	1.400	12000
NRB-XZ680M450V12.5X45F	68		0.25	6.10	0.610	1.525	12000
NRB-XZ680M450V12.5X50F	68		0.25	6.10	0.670	1.675	12000
NRB-XZ680M450V14.5X35F	68		0.25	6.10	0.620	1.550	12000
NRB-XZ680M450V14.5X40F	68		0.25	6.10	0.660	1.650	12000
NRB-XZ680M450V16X30F	68		0.25	6.10	0.610	1.525	12000
NRB-XZ680M450V16X35F	68		0.25	6.10	0.660	1.650	12000
NRB-XZ680M450V18X25F	68		0.25	6.10	0.610	1.525	12000
NRB-XZ820M450V14.5X40F	82		0.25	5.06	0.670	1.675	12000
NRB-XZ820M450V14.5X45F	82		0.25	5.06	0.740	1.850	12000
NRB-XZ820M450V16X35F	82		0.25	5.06	0.690	1.725	12000
NRB-XZ820M450V16X40F	82		0.25	5.06	0.750	1.875	12000
NRB-XZ820M450V18X30F	82		0.25	5.06	0.730	1.825	12000
NRB-XZ101M450V14.5X50F	100		0.25	4.15	0.810	1.823	12000
NRB-XZ101M450V16X40F	100		0.25	4.15	0.770	1.733	12000
NRB-XZ101M450V16X45F	100		0.25	4.15	0.840	1.890	12000
NRB-XZ101M450V18X30F	100		0.25	4.15	0.750	1.688	12000
NRB-XZ101M450V18X35F	100		0.25	4.15	0.835	1.879	12000
NRB-XZ121M450V16X45F	120		0.25	3.46	0.880	1.980	12000
NRB-XZ121M450V18X35F	120	0.25	3.46	0.860	1.935	12000	
NRB-XZ121M450V18X40F	120	0.25	3.46	0.930	2.093	12000	
NRB-XZ151M450V18X45F	150	0.25	2.76	1.000	2.250	12000	
NRB-XZ151M450V18X50F	150	0.25	2.76	1.060	2.385	12000	
NRB-XZ181M450V18X50F	180	0.25	2.30	1.100	2.475	12000	

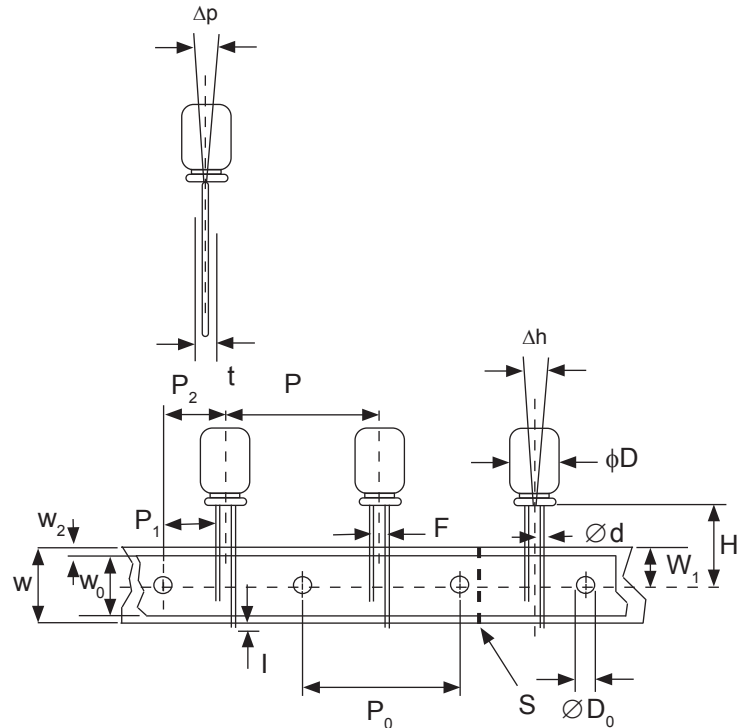
### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR (160V ~ 450V)

Cap. (μF)	60 (50)Hz	120Hz	500Hz	1KHz	10KHz	100KHz
10 ~ 82	0.80	1.00	1.30	1.50	2.10	2.50
100 ~ 220	0.80	1.00	1.30	1.50	2.00	2.25
270 ~ 820	0.80	1.00	1.30	1.50	1.90	2.00

### RADIAL TAPING SPECIFICATIONS FOR 10mm & 12.5mm DIAMETER NRB-XZ PARTS PART NUMBER SUFFIX "TB"

#### TAPING DIMENSIONS (mm)

Case Dia. (D $\phi$ )	10.0	12.5
L max.	18.0 ~ 27.0	22.0 ~ 42.0
d $\phi$ $\pm$ 0.05	0.6	
H $\pm$ 0.75/-0.5	18.5	
F $\pm$ 0.8	5.0	
P $\pm$ 1.0	12.7	15.0
P <sub>0</sub> $\pm$ 0.2	12.7	15.0
P <sub>1</sub> $\pm$ 0.5	3.85	5.0
P <sub>2</sub> $\pm$ 1.0	6.35	7.5
W $\pm$ 0.3	18.0	
W <sub>0</sub> min.	5.0	
W <sub>1</sub> $\pm$ 0.5	9.0	
W <sub>2</sub> max.	1.5	
I max.	0.5	
D <sub>0</sub> $\phi$ $\pm$ 0.2	4.0	
$\Delta$ h max.	1.0 (off alignment of body)	
$\Delta$ p max.	1.0 (off alignment of body)	
t $\pm$ 0.3	0.6 (not including lead)	



**NOTE:** Anode (+) lead feeds off first.

#### Ammo Box (Tape & Box) TB

Size of box and component quantity

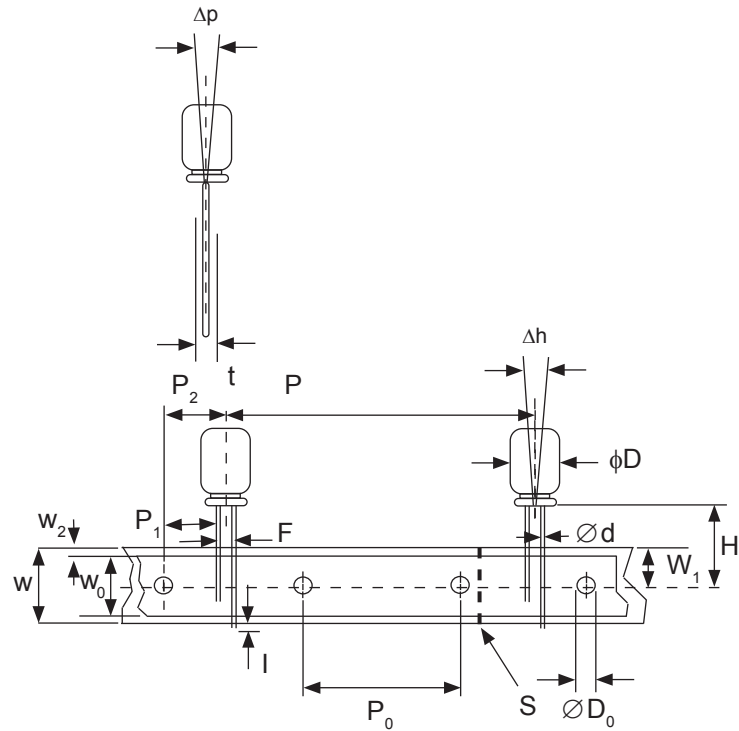
Case Size	Q'ty per Box (pcs)	Dim. L	Dim. H	Dim. W
$\phi$ 10X16	500	340	330	65
$\phi$ 10X20	500	340	330	70
$\phi$ 10X25	500	340	330	70
$\phi$ 12.5X20	500	340	330	70
$\phi$ 12.5X25	500	340	330	70
$\phi$ 12.5X30	500	340	330	80
$\phi$ 12.5X35	500	340	330	80
$\phi$ 12.5X40	500	340	330	85



### RADIAL TAPING SPECIFICATIONS FOR 16mm & 18mm DIAMETER NRB-XZ PARTS PART NUMBER SUFFIX "TBST"

#### TAPING DIMENSIONS (mm)

Case Dia. (D $\phi$ )	16.0	18.0
L max.	18.0 ~ 42.0	
d $\phi$ $\pm$ 0.05	0.8	
H $\pm$ 0.75/-0.5	18.5	
F $\pm$ 0.8	7.5	
P $\pm$ 1.0	30.0	
P <sub>0</sub> $\pm$ 0.3	15.0	
P <sub>1</sub> $\pm$ 0.5	3.75	
P <sub>2</sub> $\pm$ 1.0	7.5	
W $\pm$ 0.3	18.0	
W <sub>0</sub> min.	5.0	
W <sub>1</sub> $\pm$ 0.5	9.0	
W <sub>2</sub> max.	1.5	
l max.	0.5	
D <sub>0</sub> $\phi$ $\pm$ 0.2	4.0	
$\Delta$ h max.	1.0 (off alignment of body)	
$\Delta$ p max.	1.0 (off alignment of body)	
t $\pm$ 0.3	0.6 (not including lead)	



**NOTE:** Anode (+) lead feeds off first.

#### Ammo Box (Tape & Box) TBST

Size of box and component quantity

Case Size	Q'ty per Box (pcs)	Dim. L	Dim. H	Dim. W
φ16X16	250	340	330	65
φ16X20	250	340	330	65
φ16X25	250	340	330	75
φ16X30	250	340	330	85
φ16X35	250	340	330	85
φ16X40	250	340	330	85
φ18X16	250	340	330	70
φ18X20	250	340	330	70
φ18X25	250	340	330	75
φ18X30	250	340	330	85
φ18X35	250	340	330	85
φ18X40	250	340	330	85

#### Ammo Box Dimensions (mm)

