

# Miniature Aluminum Electrolytic Capacitors

NRZJ Series

ULTRA LOW IMPEDANCE, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC

## FEATURES

- VERY LOW IMPEDANCE & HIGH RIPPLE CURRENT
- LONG LIFE AT 105°C (6000 ~ 10,000 hrs.)
- HIGH STABILITY AT LOW TEMPERATURE
- IDEALLY FOR SWITCHING POWER SUPPLIES & CONVERTERS
- **MEETS THE REQUIREMENTS OF AEC-Q200\***

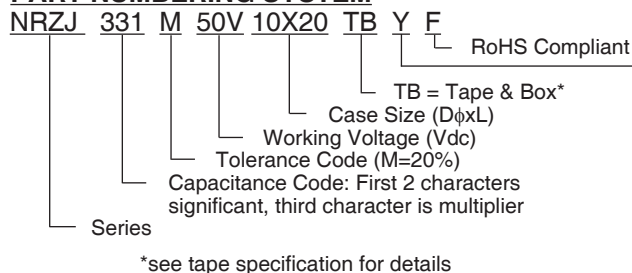
\*Contact NIC for supporting test data



## CHARACTERISTICS

Rated Voltage Range	6.3 ~ 100Vdc									
Capacitance Range	8.2 ~ 8,200 $\mu$ F									
Operating Temperature Range	-40°C ~ +105°C									
Capacitance Tolerance	$\pm$ 20% (M)									
Maximum Leakage Current After 2 Minutes at 20°C	0.01CV or 3 $\mu$ A whichever is greater									
Max. Tan $\delta$ at 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50	63	80	100
	S.V. (Vdc)	8	13	20	32	44	63	79	100	125
	C $\leq$ 1,000 $\mu$ F	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08
	C = 1,200 $\mu$ F	0.22	0.19	-	0.14	0.12	-	-	0.08	-
	C = 1,500 $\mu$ F	0.22	-	0.16	0.14	0.12	-	-	-	-
	C = 1,800 $\mu$ F	0.22	0.19	0.16	0.14	0.12	-	-	-	-
	C = 2,200 $\mu$ F	-	0.21	0.18	0.16	-	-	-	-	-
	C = 2,700 $\mu$ F	0.24	0.21	0.18	0.16	-	-	-	-	-
	C = 3,300 $\mu$ F	0.26	0.23	0.20	0.18	-	-	-	-	-
	C = 3,900 $\mu$ F	0.26	-	0.20	-	-	-	-	-	-
	C = 4,700 $\mu$ F	0.28	0.25	0.22	-	-	-	-	-	-
	C = 5,600 $\mu$ F	0.30	0.27	-	-	-	-	-	-	-
	C = 6,800 $\mu$ F	0.32	-	-	-	-	-	-	-	-
C = 8,200 $\mu$ F	0.36	-	-	-	-	-	-	-	-	
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	2								
	Z-40°C/Z+20°C	3								
Load Life Hours Load Life Test at Rated W.V. & 105°C	Case Size	6.3V			10V ~ 50V			63V ~ 100V		
	5x11, 6.3x11	6,000			7,000			6,000		
	8x11.5	8,000			9,000			8,000		
	10x12.5	9,000			9,000			9,000		
	8x16, 8x20	9,000			10,000			9,000		
	10x16 ~ 10x25 $\phi$ 16 to $\phi$ 18 Diameter	9,000			10,000			9,000		
	Capacitance Change	Within $\pm$ 25% (6.3V, 10V $\pm$ 30%) of initial measured value								
	Tan $\delta$	Less than 200% of specified value								
Leakage Current	Less than specified value									
Shelf Life Test 105°C 1,000 Hours No Load	Capacitance Change	Within $\pm$ 25% of initial measured value								
	Tan $\delta$	Less than 200% of specified value								
	Leakage Current	Less than specified value								

## PART NUMBERING SYSTEM



Optional: For automotive equipment, sourced to special production and inspection at TS-16949 certified production site



## 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) +105°C/100KHz	Max. Z (Ω) 100KHz		Load Life Hours @ +105°C
					+20°C	-10°C	
NRZJ221M6.3V5X11F	220	6.3	0.22	345	0.40	1.2	6,000
NRZJ471M6.3V6.3X11F	470		0.22	540	0.17	0.51	6,000
NRZJ821M6.3V8X11.5F	820		0.22	945	0.075	0.23	8,000
NRZJ102M6.3V8X16F	1000		0.22	1,250	0.059	0.18	9,000
NRZJ122M6.3V10X12.5F	1200		0.22	1,330	0.053	0.16	9,000
NRZJ152M6.3V8X20F	1500		0.22	1,500	0.041	0.13	9,000
NRZJ182M6.3V10X16F	1800		0.22	1,760	0.038	0.12	10,000
NRZJ272M6.3V10X20F	2700		0.24	1,960	0.028	0.084	10,000
NRZJ332M6.3V10X25F	3300		0.24	2,250	0.024	0.072	10,000
NRZJ392M6.3V12.5X20F	3900		0.24	2,480	0.025	0.075	10,000
NRZJ472M6.3V12.5X25F	4700		0.26	2,900	0.019	0.057	10,000
NRZJ562M6.3V12.5X30F	5600		0.28	3,450	0.018	0.054	10,000
NRZJ682M6.3V16X20F	6800		0.30	3,250	0.021	0.063	10,000
NRZJ682M6.3V12.5X35F	6800		0.30	3,570	0.016	0.048	10,000
NRZJ822M6.3V16X25F	8200		0.32	3,630	0.017	0.051	10,000
NRZJ151M10V5X11F	150	10	0.19	450	0.40	1.2	7,000
NRZJ331M10V6.3X11F	330		0.19	700	0.17	0.51	7,000
NRZJ561M10V8X11.5F	560		0.19	1,200	0.075	0.23	9,000
NRZJ681M10V8X16F	680		0.19	1,600	0.059	0.18	10,000
NRZJ821M10V10X12.5	820		0.19	1,700	0.053	0.16	9,000
NRZJ102M10V8X20F	1000		0.19	1,960	0.041	0.13	10,000
NRZJ122M10V10X16F	1200		0.19	2,000	0.038	0.12	10,000
NRZJ182M10V10X20F	1800		0.19	2,500	0.028	0.084	10,000
NRZJ222M10V10X25F	2200		0.21	2,900	0.024	0.072	10,000
NRZJ272M10V12.5X20F	2700		0.21	2,600	0.025	0.075	10,000
NRZJ332M10V12.5X25F	3300		0.23	3,200	0.019	0.057	10,000
NRZJ472M10V12.5X30F	4700		0.25	3,660	0.018	0.054	10,000
NRZJ472M10V16X20F	4700		0.25	3,330	0.021	0.063	10,000
NRZJ562M10V12.5X35F	5600		0.27	4,120	0.016	0.048	10,000
NRZJ562M10V16X25F	5600		0.27	3,810	0.017	0.051	10,000
NRZJ121M16V5X11F	120	16	0.16	450	0.4	1.2	7,000
NRZJ271M16V6.3X11F	270		0.16	700	0.17	0.51	7,000
NRZJ471M16V8X11.5F	470		0.16	1200	0.075	0.23	9,000
NRZJ561M16V8X16F	560		0.16	1600	0.059	0.18	10,000
NRZJ681M16V10X12.5F	680		0.16	1700	0.053	0.16	10,000
NRZJ821M16V8X20F	820		0.16	1960	0.041	0.13	10,000
NRZJ102M16V10X16F	1000		0.16	2000	0.038	0.12	10,000
NRZJ152M16V10X20F	1500		0.16	2500	0.028	0.084	10,000
NRZJ182M16V10X25F	1800		0.16	2900	0.024	0.072	10,000
NRZJ222M16V12.5X20F	2200		0.18	2600	0.025	0.075	10,000

### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

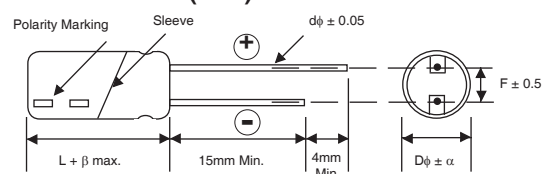
Frequency (Hz)	120	1K	10K	<100K
8.2 ~ 33μF	0.42	0.70	0.90	1.00
47 ~ 270μF	0.50	0.73	0.92	1.00
330 ~ 680μF	0.55	0.77	0.94	1.00
820 ~ 1800μF	0.60	0.80	0.96	1.00
2200 ~ 8200μF	0.70	0.85	0.98	1.00

### DIAMETER AND LEADSPACE (mm)

Case Dia. (Dφ)	5	6.3	8	10	12.5	16	18
Lead Dia. (dφ)	0.5	0.5	0.6	0.6	0.6	0.8	0.8
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Dim. α	0.5	0.5	0.5	0.5	0.5	0.5	0.5

$$\beta = L \leq 16\text{mm} = 1.5\text{mm}, L \geq 20\text{mm} = 2.0\text{mm}$$

### 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 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 (mA) +105°C/100KHz	Max. Z ( $\Omega$ ) 100KHz		Load Life Hours @+105°C	
					+20°C	-10°C		
NRZJ272M16V12.5X25F	2700	16	0.18	3200	0.019	0.057	10,000	
NRZJ332M16V12.5X30F	3300		0.2	3660	0.018	0.054	10,000	
NRZJ332M16V16X20F	3300		0.2	3330	0.021	0.063	10,000	
NRZJ392M16V12.5X35F	3900		0.2	4120	0.016	0.048	10,000	
NRZJ472M16V16X25F	4700		0.22	3810	0.017	0.051	10,000	
NRZJ680M25V5X11F	68	25	0.14	450	0.4	1.2	7,000	
NRZJ151M25V6.3X11F	150		0.14	700	0.17	0.51	7,000	
NRZJ331M25V8X11.5F	330		0.14	1200	0.075	0.23	9,000	
NRZJ391M25V8X16F	390		0.14	1600	0.059	0.18	10,000	
NRZJ471M25V10X12.5F	470		0.14	1700	0.053	0.16	10,000	
NRZJ561M25V8X20F	560		0.14	1960	0.041	0.13	10,000	
NRZJ681M25V10X16F	680		0.14	2000	0.038	0.12	10,000	
NRZJ102M25V10X20F	1000		0.14	2500	0.028	0.084	10,000	
NRZJ122M25V10X25F	1200		0.14	2900	0.024	0.072	10,000	
NRZJ152M25V12.5X20F	1500		0.14	2600	0.025	0.075	10,000	
NRZJ182M25V12.5X25F	1800		0.14	3200	0.019	0.057	10,000	
NRZJ222M25V12.5X30F	2200		0.16	3660	0.018	0.054	10,000	
NRZJ222M25V16X20F	2200		0.16	3330	0.021	0.063	10,000	
NRZJ272M25V12.5X35F	2700		0.16	4120	0.016	0.048	10,000	
NRZJ332M25V16X25F	3300		0.18	3810	0.017	0.051	10,000	
NRZJ470M35V5X11F	47		35	0.12	450	0.4	1.2	7,000
NRZJ101M35V6.3X11F	100			0.12	700	0.17	0.51	7,000
NRZJ181M35V8x11.5F	180			0.12	1200	0.075	0.23	9,000
NRZJ221M35V8X16F	220			0.12	1600	0.059	0.18	10,000
NRZJ271M35V10X12.5F	270	0.12		1700	0.053	0.16	10,000	
NRZJ331M35V8X20F	330	0.12		1960	0.041	0.13	10,000	
NRZJ391M35V10X16F	390	0.12		2000	0.038	0.12	10,000	
NRZJ561M35V10X20F	560	0.12		2500	0.028	0.084	10,000	
NRZJ681M35V10X25F	680	0.12		2900	0.024	0.072	10,000	
NRZJ821M35V12.5X20F	820	0.12		2600	0.025	0.075	10,000	
NRZJ122M35V12.5X25F	1200	0.12		3200	0.019	0.057	10,000	
NRZJ152M35V12.5X30F	1500	0.12		3660	0.018	0.054	10,000	
NRZJ152M35V16X20F	1500	0.12		3330	0.021	0.063	10,000	
NRZJ182M35V12.5X35F	1800	0.12		4120	0.016	0.048	10,000	
NRZJ182M35V16X25F	1800	0.12		3810	0.017	0.051	10,000	
NRZJ270M50V5X11F	27	50		0.10	310	0.48	1.5	7,000
NRZJ560M50V6.3X11F	56			0.10	500	0.22	0.66	7,000
NRZJ101M50V8X11.5F	100			0.10	950	0.12	0.36	9,000
NRZJ121M50V8X16F	120			0.10	1230	0.082	0.25	10,000
NRZJ151M50V10X12.5F	150		0.10	1280	0.073	0.22	10,000	
NRZJ181M50V8X20F	180		0.10	1580	0.058	0.18	10,000	
NRZJ221M50V10X16F	220		0.10	1650	0.053	0.16	10,000	
NRZJ331M50V10X20F	330		0.10	2060	0.038	0.12	10,000	
NRZJ391M50V10X25F	390		0.10	2420	0.032	0.10	10,000	
NRZJ471M50V12.5X20F	470		0.10	2300	0.032	0.10	10,000	
NRZJ681M50V12.5X25F	680		0.10	2800	0.025	0.080	10,000	
NRZJ821M50V12.5X30F	820		0.10	3370	0.023	0.074	10,000	
NRZJ821M50V16X20F	820		0.10	3070	0.026	0.084	10,000	
NRZJ102M50V12.5X35F	1000		0.10	3810	0.021	0.067	10,000	
NRZJ102M50V16X25F	1000		0.10	3510	0.022	0.07	10,000	
NRZJ180M63V5X11F	18		63	0.09	240	0.71	3.2	6,000
NRZJ470M63V6.3X11F	47			0.09	420	0.28	1.3	6,000
NRZJ820M63V8X11.5F	82			0.09	720	0.18	0.79	8,000
NRZJ101M63V8X16F	100			0.09	990	0.13	0.58	9,000
NRZJ121M63V10X12.5F	120	0.09		990	0.11	0.44	9,000	
NRZJ151M63V8X20F	150	0.09		1200	0.096	0.43	9,000	
NRZJ181M63V10X16F	180	0.09		1200	0.076	0.31	10,000	
NRZJ271M63V10X20F	270	0.09		1570	0.056	0.23	10,000	
NRZJ271M63V12.5X16F	270	0.09		1570	0.072	0.27	10,000	



## 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 (mA) +105°C/100KHz	Max. Z ( $\Omega$ ) 100KHz		Load Life Hours @ +105°C	
					+20°C	-10°C		
NRZJ331M63V10X25F	330	63	0.09	1990	0.046	0.19	10,000	
NRZJ391M63V12.5X20F	390		0.09	1990	0.041	0.13	10,000	
NRZJ471M63V12.5X25F	470		0.09	2460	0.031	0.093	10,000	
NRZJ561M63V12.5X30F	560		0.09	2760	0.028	0.084	10,000	
NRZJ561M63V16X20F	560		0.09	2380	0.032	0.096	10,000	
NRZJ681M63V12.5X35F	680		0.09	3040	0.024	0.072	10,000	
NRZJ821M63V16X25F	820		0.09	2890	0.025	0.075	10,000	
NRZJ120M80V5X11F	12		80	0.08	220	1.2	5.4	6,000
NRZJ270M80V6.3X11F	27	0.08		370	0.46	2.1	6,000	
NRZJ470M80V8X11.5F	47	0.08		620	0.29	1.3	8,000	
NRZJ560M80V8X16F	56	0.08		780	0.20	0.90	9,000	
NRZJ680M80V10X12.5F	68	0.08		780	0.17	0.66	9,000	
NRZJ820M80V8X20F	82	0.08		1040	0.16	0.66	9,000	
NRZJ101M80V10X16F	100	0.08		1040	0.11	0.47	10,000	
NRZJ151M80V10X20F	150	0.08		1430	0.084	0.34	10,000	
NRZJ151M80V12.5X16F	150	0.08		1430	0.11	0.34	10,000	
NRZJ181M80V10X25F	180	0.08		1620	0.069	0.28	10,000	
NRZJ221M80V12.5X20F	220	0.08		1750	0.062	0.18	10,000	
NRZJ271M80V12.5X25F	270	0.08		2210	0.047	0.14	10,000	
NRZJ331M80V12.5X30F	330	0.08		2400	0.042	0.13	10,000	
NRZJ331M80V16X20F	330	0.08		1950	0.048	0.15	10,000	
NRZJ391M80V12.5X35F	390	0.08		2600	0.036	0.11	10,000	
NRZJ471M80V12.5X40F	470	0.08		2860	0.032	0.095	10,000	
NRZJ471M80V16X25F	470	0.08		2430	0.038	0.120	10,000	
NRZJ471M80V18X20F	470	0.08		2270	0.045	0.140	10,000	
NRZJ561M80V16X31.5F	560	0.08		2640	0.032	0.095	10,000	
NRZJ681M80V16X35.5F	680	0.08		2860	0.029	0.086	10,000	
NRZJ681M80V18X25F	680	0.08		2500	0.036	0.110	10,000	
NRZJ821M80V16X40F	820	0.08		3510	0.027	0.081	10,000	
NRZJ821M80V18X31.5F	820	0.08		2860	0.03	0.090	10,000	
NRZJ102M80V18X35.5F	1000	0.08		3510	0.027	0.081	10,000	
NRZJ122M80V18X40F	1200	0.08		3860	0.026	0.076	10,000	
NRZJ8R2M100V5X11F	8.2	100		0.08	220	1.2	5.4	6,000
NRZJ180M100V6.3X11F	18			0.08	370	0.46	2.1	6,000
NRZJ330M100V8X11.5F	33			0.08	620	0.29	1.3	8,000
NRZJ470M100V8X16F	47			0.08	780	0.20	0.90	9,000
NRZJ560M100V10X12.5F	56			0.08	780	0.17	0.66	9,000
NRZJ680M100V8X20F	68			0.08	1040	0.16	0.66	9,000
NRZJ820M100V10X16F	82			0.08	1040	0.11	0.47	10,000
NRZJ101M100V10X20F	100		0.08	1430	0.084	0.34	10,000	
NRZJ101M100V12.5X16F	100		0.08	1430	0.11	0.34	10,000	
NRZJ121M100V10X25F	120		0.08	1620	0.069	0.28	10,000	
NRZJ151M100V12.5X20F	150		0.08	1750	0.062	0.18	10,000	
NRZJ221M100V12.5X25F	220		0.08	2210	0.047	0.14	10,000	
NRZJ271M100V12.5X30F	270		0.08	2400	0.042	0.13	10,000	
NRZJ271M100V16X20F	270		0.08	1950	0.048	0.15	10,000	
NRZJ331M100V12.5X35F	330		0.08	2600	0.036	0.11	10,000	
NRZJ391M100V12.5X40F	390		0.08	2860	0.032	0.095	10,000	
NRZJ391M100V16X25F	390		0.08	2430	0.038	0.120	10,000	
NRZJ391M100V18X20F	390		0.08	2270	0.045	0.140	10,000	
NRZJ471M100V16X31.5F	470		0.08	2640	0.032	0.095	10,000	
NRZJ471M100V18X25F	470		0.08	2500	0.036	0.110	10,000	
NRZJ561M100V16X35.5F	560		0.08	2860	0.029	0.086	10,000	
NRZJ561M100V18X31.5F	560		0.08	2860	0.030	0.090	10,000	
NRZJ681M100V16X40F	680		0.08	3510	0.027	0.081	10,000	
NRZJ681M100V18X35.5F	680		0.08	3510	0.027	0.081	10,000	
NRZJ821M100V18X40F	820		0.08	3860	0.026	0.076	10,000	

### 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.nicomp.com/precautions](http://www.nicomp.com/precautions)  
 If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@nicomp.com](mailto:tpmg@nicomp.com)



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[NRELS102M35V16X16C.140LLF](#) [ESRG160ETC100MD07D](#) [227RZS050M](#) [335CKR250M](#) [476CKH100MSA](#) [477CKR100M](#)  
[107CKR010M](#) [107CKH063MSA](#) [RJH-25V222MI9#](#) [RJH-35V221MG5#](#) [B43827A1106M8](#) [RJH-50V221MH6#](#) [EKYA500ELL470MF11D](#)  
[B41022A5686M6](#) [ESRG250ELL101MH09D](#) [EKMA160EC3101MF07D](#) [RJB-10V471MG3#](#) [ESMG160ETD221MF11D](#)  
[EKZH160ETD152MJ20S](#) [RJH-35V122MJ6#](#) [EGXF630ELL621ML20S](#) [RBD-25V100KE3#N](#) [EKMA350ELL100ME07D](#)  
[ESMG160ETD101ME11D](#) [ELXY100ETD102MJ20S](#) [EGXF500ELL561ML15S](#) [EKMG350ETD471MJ16S](#) [35YXA330MEFC10X12.5](#)  
[RXW471M1ESA-0815](#) [ELXZ630ELL221MJ25S](#) [ERR1HM1R0D11OT](#) [LPE681M30060FVA](#) [LPL471M22030FVA](#) [HFE221M25030FVA](#)  
[LKMD1401H221MF](#) [B41888G6108M000](#) [EKMA160ETD470MF07D](#) [UHW1J102MHD6](#) [EKMG500ETD221MJC5S](#) [LKMK2502W101MF](#)  
[LKMD1401H181MF](#) [LKMI2502G820MF](#) [LKMJ2001J122MF](#) [LKML2501C472MF](#) [LKMJ4002C681MF](#) [450MXH330MEFCSN25X45](#)  
[450MXK330MA2RFC22X50](#) [63ZLH560MEFCG412.5X30](#) [ELH2DM331O25KT](#) [ELH2DM471P30KT](#)