Miniature Aluminum Electrolytic Capacitors

NRE-JL Series

ULTRA LOW IMPEDANCE, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC



FEATURES

- VERY LOW IMPEDANCE & HIGH RIPPLE CURRENT
- LONG LIFE AT 105°C (4000 ~ 10,000 hrs.)
- HIGH STABILITY AT LOW TEMPERATURE
- IDEALLY FOR SWITCHING POWER SUPPLIES & CONVERTORS

CHARACTERISTICS

Rated Voltage Range	6.3 ~ 100Vdc								
Capacitance Range	1.0 ~ 15,000µF								
Operating Temperature Range	-40°C ~ +105°C								
Capacitance Tolerance	±20% (M)								
Maximum Leakage Current After 2 Minutes at 20°C	0.01CV or 3µA whichever is greater								
Max. Tan δ at 120Hz/20°C	W.V. (Vdc)	6.3	10	16	25	35	50	63	100
	S.V. (Vdc)	8	13	20	32	44	63	79	125
	C ≤ 1,000µF	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	C = 2,200µF	0.24	0.21	0.18	0.16	0.14	0.12	-	-
	C = 3,300µF	0.26	0.23	0.20	0.18	0.16	-	-	-
	C = 4,700µF	0.28	0.25	0.22	0.20	-	-	-	-
	C = 6,800µF	0.32	0.29	0.26	-	-	-	-	-
	C = 10,000µF	0.40	0.37	-	-	-	-	-	-
	C = 15,000µF	0.50	-	-	-	-	-	-	-
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	4	3	2	2	2	2	2	2
	Z-40°C/Z+20°C	8	6	4	3	3	3	3	3
Load Life Hours Load Life Test at Rated W.V. & 105°C	Case Diameter	Life Hours							
		6.3V to 10V				16V to 100V			
	ϕ5mm	4,000				5,000			
	ϕ6.3mm & ϕ8mm	6,000				7,000			
	ϕ10mm ~ ϕ16mm	8,000				10,000			
	Capacitance Change	Within ±25% (6.3V ±30%) of initial measured value							
	Tan δ	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 ±25% of initial measured value							
	Tan δ	Less than 200% of specified value							
	Leakage Current	Less than specified value							

PART NUMBER SYSTEM

NRE-JL 102 M 25V 10X20 TB F

- F — RoHS Compliant
- TB = Tape & Box*
- 10X20 — Case Size (mm)
- 25V — Working Voltage
- M — Tolerance Code M=20%
- 102 — Capacitance Code in µF
- NRE-JL — Series

*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**
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 (mArms) +105°C/100KHz	Max. Z (Ω) 100KHz		Load Life Hours @+105°C
					+20°C	-10°C	
NRE-JL101M6.3V5X11F	100	6.3	0.22	150	0.90	3.6	4,000
NRE-JL221M6.3V5X11F	220		0.22	250	0.40	1.2	4,000
NRE-JL331M6.3V6.3X11F	330		0.22	340	0.22	0.87	6,000
NRE-JL471M6.3V6.3X11F	470		0.22	400	0.22	0.87	6,000
NRE-JL102M6.3V8X11.5F	1000		0.22	640	0.13	0.52	6,000
NRE-JL222M6.3V10X16F	2200		0.24	1300	0.062	0.25	8,000
NRE-JL332M6.3V10X20F	3300		0.26	1400	0.046	0.18	8,000
NRE-JL472M6.3V12.5X25F	4700		0.28	2230	0.032	0.11	8,000
NRE-JL682M6.3V12.5X25F	6800		0.32	2230	0.032	0.11	8,000
NRE-JL103M6.3V16X25F	10000		0.40	2930	0.021	0.060	8,000
NRE-JL153M6.3V16X35.5F	15000		0.50	3610	0.015	0.044	8,000
NRE-JL101M10V5X11F	100	10	0.19	150	0.9	3.6	4,000
NRE-JL221M10V5X11F	220		0.19	250	0.4	1.2	4,000
NRE-JL331M10V6.3X11F	330		0.19	400	0.22	0.87	6,000
NRE-JL471M10V6.3X11F	470		0.19	400	0.22	0.87	6,000
NRE-JL102M10V10X12.5F	1000		0.19	865	0.080	0.32	8,000
NRE-JL222M10V10X20F	2200		0.21	1400	0.046	0.18	8,000
NRE-JL332M10V12.5X20F	3300		0.23	1900	0.041	0.14	8,000
NRE-JL472M10V12.5X25F	4700		0.25	2230	0.032	0.11	8,000
NRE-JL682M10V16X25F	6800		0.29	2930	0.021	0.060	8,000
NRE-JL103M10V16X31.5F	10000		0.37	3450	0.019	0.056	8,000
NRE-JL470M16V5X11F	47	16	0.16	250	0.40	1.2	5,000
NRE-JL101M16V5X11F	100		0.16	250	0.40	1.2	5,000
NRE-JL221M16V6.3X11F	220		0.16	400	0.22	0.87	7,000
NRE-JL331M16V6.3X11F	330		0.16	400	0.22	0.87	7,000
NRE-JL471M16V8X11.5F	470		0.16	640	0.13	0.52	7,000
NRE-JL102M16V10X16F	1000		0.16	1210	0.062	0.25	10,000
NRE-JL222M16V12.5X20F	2200		0.18	1900	0.041	0.14	10,000
NRE-JL332M16V12.5X25F	3300		0.20	2230	0.032	0.11	10,000
NRE-JL472M16V16X25F	4700		0.22	2930	0.021	0.060	10,000
NRE-JL682M16V16X31.5F	6800		0.26	3450	0.019	0.056	10,000
NRE-JL330M25V5X11F	33	25	0.14	250	0.40	1.2	5,000
NRE-JL470M25V5X11F	47		0.14	250	0.40	1.2	5,000
NRE-JL101M25V5X11F	100		0.14	250	0.40	1.2	5,000
NRE-JL221M25V6.3X11F	220		0.14	400	0.22	0.87	7,000
NRE-JL331M25V8X11.5F	330		0.14	640	0.13	0.52	7,000
NRE-JL471M25V10X12.5F	470		0.14	865	0.080	0.32	10,000
NRE-JL102M25V10X20F	1000		0.14	1400	0.046	0.18	10,000
NRE-JL222M25V12.5X25F	2200		0.16	2230	0.032	0.11	10,000
NRE-JL332M25V16X25F	3300		0.18	2930	0.021	0.060	10,000
NRE-JL472M25V16X31.5F	4700		0.20	3450	0.019	0.056	10,000
NRE-JL330M35V5X11F	33	35	0.12	250	0.40	1.2	5,000
NRE-JL470M35V5X11F	47		0.12	250	0.40	1.2	5,000
NRE-JL101M35V6.3X11F	100		0.12	400	0.22	0.87	7,000
NRE-JL221M35V8X11.5F	220		0.12	640	0.13	0.52	7,000
NRE-JL331M35V10X12.5F	330		0.12	865	0.080	0.32	10,000
NRE-JL471M35V10X16F	470		0.12	1210	0.062	0.25	10,000
NRE-JL102M35V12.5X20F	1000		0.12	1900	0.041	0.14	10,000
NRE-JL222M35V16X25F	2200		0.14	2930	0.021	0.060	10,000
NRE-JL332M35V16X31.5F	3300		0.16	3450	0.019	0.056	10,000
NRE-JL1R0M50V5X11F	1.0	50	0.10	30	4.0	8.0	5,000
NRE-JL2R2M50V5X11F	2.2		0.10	43	2.5	6.0	5,000
NRE-JL3R3M50V5X11F	3.3		0.10	53	2.2	5.6	5,000
NRE-JL4R7M50V5X11F	4.7		0.10	88	1.9	5.0	5,000
NRE-JL100M50V5X11F	10		0.10	100	1.5	4.0	5,000
NRE-JL220M50V5X11F	22		0.10	180	0.70	2.8	5,000
NRE-JL330M50V5X11F	33		0.10	250	0.70	2.8	5,000
NRE-JL470M50V6.3X11F	47		0.10	295	0.30	1.2	7,000
NRE-JL101M50V8X11.5F	100		0.10	555	0.17	0.68	7,000

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 (mArms) +105°C/100KHz	Max. Z (Ω) 100KHz		Load Life Hours @+105°C
					+20°C	-10°C	
NRE-JL221M50V10X16F	220	50	0.10	1050	0.084	0.34	10,000
NRE-JL331M50V10X20F	330		0.10	1220	0.06	0.24	10,000
NRE-JL471M50V12.5X20F	470		0.10	1660	0.045	0.15	10,000
NRE-JL102M50V16X25F	1000		0.10	2730	0.032	0.096	10,000
NRE-JL222M50V16X35.5F	2200		0.12	3150	0.019	0.057	10,000
NRE-JL100M63V5X11F	10	63	0.09	173	0.88	3.5	5,000
NRE-JL220M63V5X11F	22		0.09	173	0.88	3.5	5,000
NRE-JL330M63V6.3X11F	33		0.09	278	0.35	1.4	7,000
NRE-JL470M63V6.3X11F	47		0.09	278	0.35	1.4	7,000
NRE-JL101M63V10X12.5F	100		0.09	725	0.15	0.60	10,000
NRE-JL221M63V10X20F	220		0.09	1200	0.078	0.31	10,000
NRE-JL331M63V12.5X20F	330		0.09	1570	0.060	0.19	10,000
NRE-JL471M63V12.5X25F	470		0.09	1990	0.043	0.14	10,000
NRE-JL102M63V16X25F	1000		0.09	2730	0.032	0.096	10,000
NRE-JL1R0M100V5X11F	1.0	100	0.08	20	4.5	15.0	5,000
NRE-JL2R2M100V5X11F	2.2		0.08	30	3.0	13.0	5,000
NRE-JL3R3M100V5X11F	3.3		0.08	40	2.7	11.0	5,000
NRE-JL4R7M100V5X11F	4.7		0.08	65	2.5	10.0	5,000
NRE-JL100M100V6.3X11F	10		0.08	267	0.57	2.3	7,000
NRE-JL220M100V6.3X11F	22		0.08	267	0.57	2.3	7,000
NRE-JL330M100V8X11.5F	33		0.08	462	0.36	1.4	7,000
NRE-JL470M100V8X16F	47		0.08	585	0.25	1.0	7,000
NRE-JL101M100V10X20F	100		0.08	1040	0.12	0.52	10,000
NRE-JL221M100V12.5X25F	220		0.08	1620	0.060	0.23	10,000
NRE-JL331M100V16X25F	330		0.08	2210	0.044	0.16	10,000

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

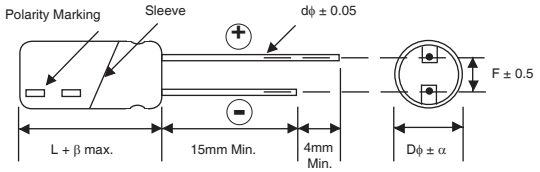
Frequency (Hz) 6.3V ~ 50V	120	1K	10K	≤100K
1.0 ~ 10	0.42	0.60	0.80	1.00
22 ~ 33	0.55	0.75	0.90	1.00
47 ~ 330	0.70	0.85	0.95	1.00
470 ~ 1,000	0.75	0.90	0.98	1.00
2,200 ~ 1,5000	0.80	0.95	1.00	1.00
Frequency (Hz) 63V ~ 100V	120	1K	10K	≤100K
All Cap Values	0.42	0.60	0.80	1.00

DIAMETER AND LEADSPACE (mm)

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

β = L ≤ 16mm = 1.5mm, L ≥ 20mm = 2.0mm

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.