

Miniature Aluminum Electrolytic Capacitors

NRE-LS Series

REDUCED SIZE, EXTENDED RANGE
LOW PROFILE, RADIAL LEAD, POLARIZED

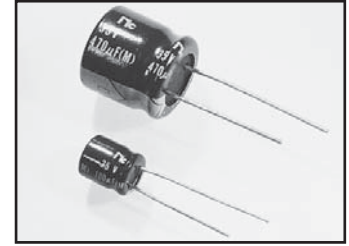
FEATURES

- LOW PROFILE APPLICATIONS
- HIGH STABILITY AND PERFORMANCE

**RoHS
Compliant**

includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Rated Voltage Range	6.3 ~ 50Vdc						
Capacitance Range	22 ~ 10,000 μ F						
Operating Temperature Range	-40 ~ +85°C						
Capacitance Tolerance	$\pm 20\%$ (M)						
Max. Leakage Current @ 20°C	After 1 min.	0.03CV or 4 μ A, whichever is greater					
	After 2 min.	0.01CV or 3 μ A, whichever is greater					
Max. Tan δ @ 120Hz/+20°C	W.V. (Vdc)	6.3	10	16	25	35	50
	S.V. (Vdc)	8	13	20	32	44	63
	C $\leq$ 1,000 μ F	0.28	0.24	0.20	0.16	0.14	0.12
	C = 2,200 μ F	-	-	0.22	0.18	0.16	0.14
	C = 3,300 μ F	0.32	0.28	-	0.20	-	-
	C = 4,700 μ F	0.34	-	0.26	-	-	-
	C = 6,800 μ F	0.36	0.32	-	-	-	-
Low Temperature Stability Impedance Ratio @ 120Hz	C = 10,000 μ F	0.38	-	-	-	-	-
	Z-25°C/Z+20°C	5	4	3	2	2	2
	Z-40°C/Z+20°C	12	10	8	5	4	4
Load Life Test at Rated W.V. +85°C 2,000 Hours	Capacitance Change	Within $\pm 25\%$ of initial measured value					
	Tan δ	Less than 200% of specified maximum value					
	Leakage Current	Less than specified maximum value					

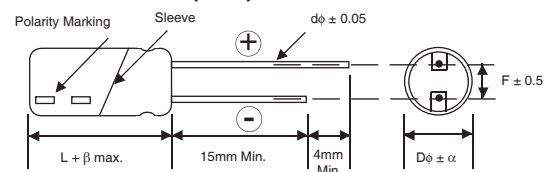
STANDARD PRODUCT AND CASE SIZE TABLE D ϕ x L (mm)

Cap. (μ F)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
220	221	-	-	-	-	10x9	-
330	331	-	-	-	10x9	-	-
470	471	-	-	10x9	-	-	16x16
1,000	102	10x9	-	-	-	16x16	16x21
2,200	222	-	-	16x16	16x16	18x21	18x25
3,300	332	16x16	16x16	-	18x21	-	-
4,700	472	16x16	-	18x21	-	-	-
6,800	682	-	18x21	-	-	-	-
10,000	103	18x21	-	-	-	-	-

LEAD SPACING AND DIAMETER (mm)

Case Dia. (D ϕ)	5	6.3	8	10	12.5	16	18
Lead Dia. (d ϕ)	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
dim. β	1.5	1.5	1.5	1.5	1.5	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.

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



NIC COMPONENTS CORP. www.niccomp.com | www.lowESR.com | www.RFpassives.com | www.SMTmagnetics.com

SPECIFICATIONS ARE SUBJECT TO CHANGE

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) +85°C/120Hz	Max. ESR (Ω) +20°C/120Hz	Load Life Hours @ +85°C
NRE-LS102M6.3V10x9F	1,000	6.3	0.28	500	0.46	2,000
NRE-LS332M6.3V16x16F	3,300		0.32	1200	0.16	2,000
NRE-LS472M6.3V16x16F	4,700		0.34	1400	0.12	2,000
NRE-LS103M6.3V18x21F	10,000		0.38	2000	0.06	2,000
NRE-LS332M10V16x16F	3,300	10	0.28	1250	0.14	2,000
NRE-LS682M10V18x21F	6,800		0.32	1850	0.08	2,000
NRE-LS471M16V10x9F	470	16	0.20	400	0.70	2,000
NRE-LS222M16V16x16F	2,200		0.22	1100	0.17	2,000
NRE-LS472M16V18x21F	4,700		0.26	1700	0.09	2,000
NRE-LS331M25V10x9F	330	25	0.16	350	0.80	2,000
NRE-LS222M25V16x16F	2,200		0.18	1250	0.13	2,000
NRE-LS332M25V18x21F	3,300		0.20	1700	0.10	2,000
NRE-LS221M35V10x9F	220	35	0.14	300	1.06	2,000
NRE-LS102M35V16x16F	1,000		0.14	1000	0.23	2,000
NRE-LS222M35V18x21F	2,200		0.16	1500	0.12	2,000
NRE-LS471M50V16x16F	470	50	0.12	700	0.42	2,000
NRE-LS102M50V16x21F	1,000		0.12	1000	0.20	2,000
NRE-LS222M50V18x25F	2,200		0.14	1600	0.11	2,000

PART NUMBER SYSTEM

NRE-LS 221 M 35V 10X9 TB F

- RoHS Compliant
- Tape and Box*
- Case Size (Dφ x L)
- Working Voltage (Vdc)
- Tolerance Code (M=20%)
- Capacitance Code: First 2 characters significant, third character is multiplier
- Series

*see taping specifications for details