

# Miniature Aluminum Electrolytic Capacitors

NRE-S Series

SUBMINIATURE, RADIAL LEADS, POLARIZED

## FEATURES

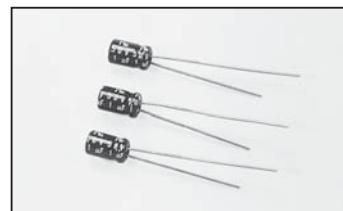
- LOW PROFILE, 7mm HEIGHT
- STABLE & HIGH PERFORMANCE

## CHARACTERISTICS

Rated Voltage Range	6.3 ~ 63Vdc
Capacitance Range	1.0 ~ 220μF
Operating Temperature Range	-40 ~ +85°C
Capacitance Tolerance	±20%(M)

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



Max. Leakage Current @ 20°C   After 2 min.	0.01CV or 3μA, whichever is greater							
Max. Tan δ @ 120Hz/+20°C	W.V. (Vdc)	6.3	10	16	25	35	50	63
	S.V. (Vdc)	8	13	20	32	44	63	79
	Tan δ	0.24	0.20	0.16	0.14	0.12	0.10	0.08
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	4	3	2	2	2	2	2
	Z-40°C/Z+20°C	10	8	6	4	4	4	4
Load Life Test at Rated W.V. +85°C 1,000 Hours	Capacitance Change	Within ±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. (μF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
1.0	1R0	-	-	-	-	4x7	4x7
2.2	2R2	-	-	-	-	4x7	4x7
3.3	3R3	-	-	-	-	4x7	4x7
4.7	4R7	-	-	-	4x7	4x7	5x7
10	100	-	-	4x7	4x7	4x7	5x7
22	220	4x7	4x7	4x7	5x7	5x7	6.3x7
33	330	4x7	4x7	5x7	5x7	6.3x7	6.3x7
47	470	4x7	5x7	5x7	6.3x7	6.3x7	6.3x7
100	101	5x7	6.3x7	6.3x7	6.3x7	6.3x7	-
220	221	6.3x7	6.3x7	6.3x7	-	-	-
330	331	6.3x7	-	-	-	-	-

## PART NUMBERING SYSTEM

NRE-S 100 M 35V 4X7 TB F

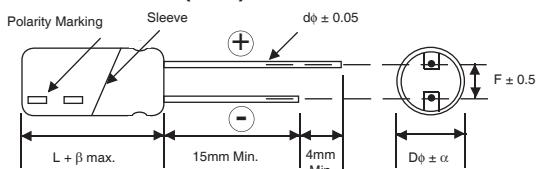
- Series
- RoHS Compliant
- TB = Tape & Box\*
- Case Size (Dφ x L)
- Working Voltage (Vdc)
- Tolerance Code (M=20%)
- Capacitance Code: First 2 characters significant, third character is multiplier

\*see taping specifications for details

## LEAD SPACING AND DIAMETER (mm)

Case Dia. (Dφ)	4	5	6.3
Lead Dia. (dφ)	0.45	0.5	0.5
Lead Spacing (F)	1.5	2.0	2.5
Dim. α	0.5	0.5	0.5
dim. β	1.0	1.0	1.0

## 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](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)



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SPECIFICATIONS ARE SUBJECT TO CHANGE

# Miniature Aluminum Electrolytic Capacitors

NRE-S Series

## 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-S220M6.3V4x7F	22	6.3	0.24	29	18.1	1,000
NRE-S330M6.3V4x7F	33		0.24	38	12.1	1,000
NRE-S470M6.3V4x7F	47		0.24	46	8.47	1,000
NRE-S101M6.3V5x7F	100		0.24	70	3.98	1,000
NRE-S221M6.3V6.3x7F	220		0.24	95	2.49	1,000
NRE-S331M6.3V6.3x7F	330		0.24	110	2.21	1,000
NRE-S220M10V4x7F	22	10	0.20	35	15.1	1,000
NRE-S330M10V4x7F	33		0.20	43	10.1	1,000
NRE-S470M10V5x7F	47		0.20	53	7.06	1,000
NRE-S101M10V6.3x7F	100		0.20	80	3.32	1,000
NRE-S221M10V6.3x7F	220		0.20	110	1.51	1,000
NRE-S100M16V4x7F	10	16	0.16	25	26.6	1,000
NRE-S220M16V4x7F	22		0.16	39	12.1	1,000
NRE-S330M16V5x7F	33		0.16	49	8.05	1,000
NRE-S470M16V5x7F	47		0.16	59	5.65	1,000
NRE-S101M16V6.3x7F	100		0.16	120	2.88	1,000
NRE-S221M16V6.3x7F	220		0.16	110	1.21	1,000
NRE-S100M25V4x7F	10	25	0.14	27	23.3	1,000
NRE-S220M25V5x7F	22		0.14	43	10.6	1,000
NRE-S330M25V5x7F	33		0.14	63	7.04	1,000
NRE-S470M25V6.3x7F	47		0.14	70	4.85	1,000
NRE-S101M25V6.3x7F	100		0.14	100	2.33	1,000
NRE-S4R7M35V4x7F	4.7	35	0.12	20	42.4	1,000
NRE-S100M35V4x7F	10		0.12	29	19.9	1,000
NRE-S220M35V5x7F	22		0.12	47	9.05	1,000
NRE-S330M35V6.3x7F	33		0.12	60	6.03	1,000
NRE-S470M35V6.3x7F	47		0.12	75	4.24	1,000
NRE-S101M35V6.3x7F	100		0.12	105	1.90	1,000
NRE-S1R0M50V4x7F	1.0	50	0.10	9.0	188	1,000
NRE-S2R2M50V4x7F	2.2		0.10	15	75.4	1,000
NRE-S3R3M50V4x7F	3.3		0.10	18	50.3	1,000
NRE-S4R7M50V4x7F	4.7		0.10	23	35.3	1,000
NRE-S100M50V5x7F	10		0.10	34	16.6	1,000
NRE-S220M50V6.3x7F	22		0.10	55	7.54	1,000
NRE-S330M50V6.3x7F	33		0.10	70	4.80	1,000
NRE-S470M50V6.3x7F	47		0.10	80	3.53	1,000
NRE-S1R0M63V4x7F	1.0	63	0.08	10	133	1,000
NRE-S2R2M63V4x7F	2.2		0.08	17	60.4	1,000
NRE-S3R3M63V4x7F	3.3		0.08	21	40.4	1,000
NRE-S4R7M63V5x7F	4.7		0.08	26	26.3	1,000
NRE-S100M63V6.3x7F	10		0.08	43	6.04	1,000
NRE-S220M63V6.3x7F	22		0.08	65	4.04	1,000



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