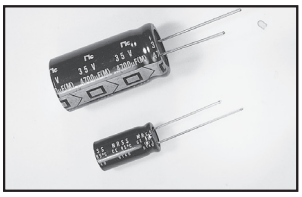
NRSS Series

Radial Aluminum Electrolytic Capacitors

ROHS/REACH COMPLIANT HALOGEN FREE

NIC COMPONENTS Performance Passives By Design

RADIAL LEADS, POLARIZED
NEW REDUCED CASE SIZING
EXPANDED TAPING AVAILABILITY



CHARACTERISTICS

Rated Voltage Range		6.3 ~ 100Vdc							
Capacitance Range		2.2 ~ 15,000µF							
Operating Temperature Range		-40 ~ +85°C							
Capacitance Tolerance		±20%(M)							
Max. Leakage Current @ +20°C	After 1 min.	0.03CV or 4µA, whichever is greater							
	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	100
	S.V. (Vdc)	8	13	20	32	44	63	79	125
	C ≤ 1,000µF	0.28	0.24	0.20	0.18	0.14	0.12	0.10	0.08
	C = 2,200µF	0.30	0.26	0.22	0.20	0.16	0.14	-	-
	C = 3,300µF	0.32	0.28	0.24	0.22	0.18	0.18	-	-
	C = 4,700µF	0.34	0.30	0.26	0.24	0.20	-	-	-
	C = 6,800µF	0.38	0.34	0.30	0.28	-	-	-	-
	C = 10,000µF	0.46	0.42	0.38	-	-	-	-	-
	C = 15,000µF	0.56	0.52	-	-	-	-	-	-
Low Temperature Stability Inpedance Ratio @ 120Hz	Z-25°C/Z+20°C	5	4	3	2	2	2	2	2
	Z-40°C/Z+20°C	12	10	8	5	4	4	4	4
Load Life Test at Rated W.V. +85°C 2,000 Hours	Capacitance Change	Within ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
Shelf Life Test 85°C 1,000 Hours No Load	Capacitance Change	Within ±10% of initial measured value							
	Tan δ	Less than specified maximum value							
	Leakage Current	Less than specified maximum value							

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

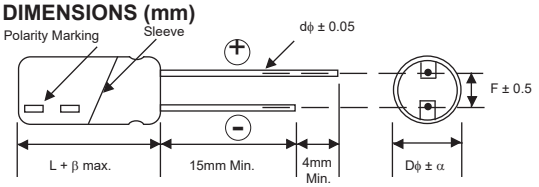
Cap. (µF)	Code	Working Voltage (Vdc)							
		6.3	10	16	25	35	50	63	100
2.2	2R2	-	-	-	-	-	5x11	5x11	5x11
3.3	3R3	-	-	-	-	-	5x11	5x11	5x11
4.7	4R7	-	-	-	5x11	-	5x11	5x11	5x11
10	100	-	-	5x11	5x11	5x11	5x11	5x11	6.3x11
22	220	-	5x11	5x11	5x11	5x11	5x11	5x11	8x11.5
33	330	5x11	5x11	5x11	5x11	5x11	5x11	6.3x11	8x11.5
47	470	5x11	5x11	5x11	5x11	5x11	6.3x11	6.3x11	10x12.5
100	101	5x11	5x11	5x11	6.3x11	6.3x11	8x11.5	8x11.5	10x20
150	151	-	-	-	6.3x11	-	-	-	-
220	221	5x11	5x11	6.3x11	8x11.5	8x11.5	10x12.5	10x16	12.5x25
330	331	6.3x11	6.3x11	8x11.5	8x11.5	10x12.5	10x16	10x20	12.5x25
470	471	6.3x11	6.3x11	8x11.5	10x12.5	10x16	10x20	12.5x20	16x25
1,000	102	8x11.5	10x12.5	10x16	10x20	12.5x20	12.5x25	16x25	-
2,200	222	10x16	10x20	12.5x20	12.5x25	16x25	16x31.5	-	-
3,300	332	10x20	12.5x20	12.5x25	16x25	16x31.5	18x35.5	-	-
4,700	472	12.5x20	12.5x25	16x25	16x31.5	18x35.5	-	-	-
6,800	682	12.5x25	16x25	16x31.5	18x35.5	-	-	-	-
10,000	103	16x25	16x31.5	18x35.5	-	-	-	-	-
15,000	153	16x35.5	18x35.5	-	-	-	-	-	-

LEAD SPACING AND DIAMETER (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

β = L < 20mm = 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.

NRSS Series

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COMPONENTS
Performance Passives By Design

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
NRSS330M6.3V5X11F	33	6.3	0.28	50	14.1	2,000
NRSS470M6.3V5X11F	47		0.28	60	9.88	2,000
NRSS101M6.3V5X11F	100		0.28	120	4.64	2,000
NRSS221M6.3V5X11F	220		0.28	210	2.11	2,000
NRSS331M6.3V6.3X11F	330		0.28	260	1.41	2,000
NRSS471M6.3V6.3x11F	470		0.28	320	0.99	2,000
NRSS102M6.3V8x11.5F	1,000		0.28	540	0.46	2,000
NRSS222M6.3V10x16F	2,200		0.30	900	0.23	2,000
NRSS332M6.3V10x20F	3,300		0.32	1050	0.16	2,000
NRSS472M6.3V12.5x20F	4,700		0.34	1350	0.12	2,000
NRSS682M6.3V12.5x25F	6,800		0.38	1600	0.093	2,000
NRSS103M6.3V16x25F	10,000		0.46	2000	0.076	2,000
NRSS153M6.3V16X35.5F	15,000		0.56	1900	0.062	2,000
NRSS220M10V5X11F	22	10	0.24	38	18.1	2,000
NRSS330M10V5X11F	33		0.24	58	12.1	2,000
NRSS470M10V5X11F	47		0.24	70	8.47	2,000
NRSS101M10V5X11F	100		0.24	125	3.98	2,000
NRSS221M10V5x11F	220		0.24	220	1.81	2,000
NRSS331M10V6.3x11F	330		0.24	290	1.21	2,000
NRSS471M10V6.3x11F	470		0.24	350	0.85	2,000
NRSS102M10V10x12.5F	1,000		0.24	620	0.40	2,000
NRSS222M10V10x20F	2,200		0.26	970	0.20	2,000
NRSS332M10V12.5x20F	3,300		0.28	1250	0.14	2,000
NRSS472M10V12.5x25F	4,700		0.30	1500	0.11	2,000
NRSS682M10V16x25F	6,800		0.34	1850	0.083	2,000
NRSS103M10V16x31.5F	10,000		0.42	2350	0.07	2,000
NRSS153M10V18X35.5F	15,000		0.52	2000	0.058	2,000
NRSS100M16V5X11F	10	16	0.20	28	33.2	2,000
NRSS220M16V5X11F	22		0.20	50	15.1	2,000
NRSS330M16V5X11F	33		0.20	60	10.1	2,000
NRSS470M16V5X11F	47		0.20	85	7.06	2,000
NRSS101M16V5x11F	100		0.20	160	3.32	2,000
NRSS221M16V6.3x11F	220		0.20	260	1.51	2,000
NRSS331M16V8X11.5F	330		0.20	360	1.01	2,000
NRSS471M16V8x11.5F	470		0.20	440	0.71	2,000
NRSS102M16V10x16F	1,000		0.20	710	0.33	2,000
NRSS222M16V12.5x20F	2,200		0.22	1150	0.16	2,000
NRSS332M16V12.5x25F	3,300		0.24	1400	0.12	2,000
NRSS472M16V16x25F	4,700		0.26	1700	0.092	2,000
NRSS682M16V16x31.5F	6,800		0.30	2150	0.073	2,000
NRSS103M16V18x35.5F	10,000		0.38	2700	0.063	2,000

PART NUMBERING SYSTEM

NRSS 101 M 35V 6.3X11 TB F

- F — RoHS Compliant
- TB — Tape and Box*
- 6.3X11 — Size (DØ x L)
- 35V — Rated Voltage
- M — Tolerance Code
- 101 — Capacitance Code
- NRSS — Series

*see taping specifications for details

PRECAUTIONS

Please review the notes on correct use, safety and precautions found at
https://www.niccomp.com/wp-content/uploads/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**

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COMPONENTS
Performance Passives By Design

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
NRSS4R7M25V5X11F	4.7	25	0.18	25	63.5	2,000
NRSS100M25V5X11F	10		0.18	40	29.9	2,000
NRSS220M25V5X11F	22		0.18	60	13.6	2,000
NRSS330M25V5X11F	33		0.18	80	9.05	2,000
NRSS470M25V5X11F	47		0.18	90	6.35	2,000
NRSS101M25V6.3X11F	100		0.18	180	2.99	2,000
NRSS151M25V6.3X11F	150		0.16	220	1.76	2,000
NRSS221M25V8X11.5F	220		0.18	320	1.36	2,000
NRSS331M25V8x11.5F	330		0.18	390	0.90	2,000
NRSS471M25V10x12.5F	470		0.18	520	0.64	2,000
NRSS102M25V10x20F	1,000		0.18	830	0.30	2,000
NRSS222M25V12.5x25F	2,200		0.18	1300	0.15	2,000
NRSS332M25V16x25F	3,300		0.20	1650	0.11	2,000
NRSS472M25V16x31.5F	4,700		0.22	2050	0.085	2,000
NRSS682M25V18x35.5F	6,800		0.28	2550	0.068	2,000
NRSS100M35V5X11F	10	35	0.14	45	23.2	2,000
NRSS220M35V5X11F	22		0.14	75	10.6	2,000
NRSS330M35V5X11F	33		0.14	90	7.04	2,000
NRSS470M35V5x11F	47		0.14	130	4.94	2,000
NRSS101M35V6.3x11F	100		0.14	210	2.32	2,000
NRSS221M35V8x11.5F	220		0.14	350	1.06	2,000
NRSS331M35V10x12.5F	330		0.14	470	0.70	2,000
NRSS471M35V10x16F	470		0.14	580	0.49	2,000
NRSS102M35V12.5x20F	1,000		0.14	1000	0.23	2,000
NRSS222M35V16x25F	2,200		0.18	1550	0.12	2,000
NRSS332M35V16x31.5F	3,300		0.18	1950	0.090	2,000
NRSS472M35V18x35.5F	4,700		0.20	2400	0.071	2,000
NRSS2R2M50V5X11F	2.2	50	0.12	20	90.5	2,000
NRSS3R3M50V5X11F	3.3		0.12	28	60.3	2,000
NRSS4R7M50V5X11F	4.7		0.12	38	42.3	2,000
NRSS100M50V5X11F	10		0.12	50	19.9	2,000
NRSS220M50V5X11F	22		0.12	90	9.05	2,000
NRSS330M50V5x11F	33		0.12	120	6.03	2,000
NRSS470M50V6.3X11F	47		0.12	135	4.23	2,000
NRSS101M50V8X11.5F	100		0.12	250	1.99	2,000
NRSS221M50V10x12.5F	220		0.12	410	0.90	2,000
NRSS331M50V10x16F	330		0.12	520	0.60	2,000
NRSS471M50V10x20F	470		0.12	650	0.42	2,000
NRSS102M50V12.5x25F	1,000		0.12	1100	0.20	2,000
NRSS222M50V16x31.5F	2,200		0.14	1700	0.11	2,000
NRSS332M50V18x35.5F	3,300		0.16	2200	0.08	2,000
NRSS2R2M63V5X11F	2.2	63	0.10	20	75.4	2,000
NRSS3R3M63V5X11F	3.3		0.10	28	50.3	2,000
NRSS4R7M63V5X11F	4.7		0.10	40	35.3	2,000
NRSS100M63V5X11F	10		0.10	60	16.6	2,000
NRSS220M63V5x11F	22		0.10	100	7.54	2,000
NRSS330M63V6.3X11F	33		0.10	130	5.03	2,000
NRSS470M63V6.3x11F	47		0.10	170	3.53	2,000
NRSS101M63V8x11.5F	100		0.10	290	1.66	2,000
NRSS221M63V10x16F	220		0.10	470	0.75	2,000
NRSS331M63V10x20F	330		0.10	710	0.50	2,000
NRSS471M63V12.5x20F	470		0.10	900	0.35	2,000
NRSS102M63V16x25F	1,000		0.10	1300	0.17	2,000

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NIC COMPONENTS Performance Passives By Design

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
NRSS2R2M100V5X11F	2.2	100	0.08	30	60.3	2,000
NRSS3R3M100V5X11F	3.3		0.08	40	40.2	2,000
NRSS4R7M100V5X11F	4.7		0.08	50	28.2	2,000
NRSS100M100V6.3x11F	10		0.08	85	13.3	2,000
NRSS220M100V8x11.5F	22		0.08	135	6.03	2,000
NRSS330M100V8x11.5F	33		0.08	180	4.02	2,000
NRSS470M100V10x12.5F	47		0.08	230	2.82	2,000
NRSS101M100V10x20F	100		0.08	370	1.33	2,000
NRSS221M100V12.5x25F	220		0.08	620	0.60	2,000
NRSS331M100V12.5x25F	330		0.08	760	0.40	2,000
NRSS471M100V16x25F	470		0.08	1000	0.28	2,000

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	50 ≤ F < 100	100 ≤ F < 1K	1K ≤ F < 10K	10K ≤
2.2 ~ 47µF	0.80	1.00	1.30	1.50
100 ~ 470µF	0.80	1.00	1.20	1.30
1,000 ~ 15,000µF	0.80	1.00	1.13	1.15