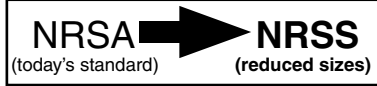


Miniature Aluminum Electrolytic Capacitors

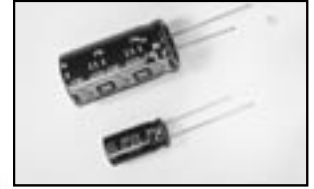
NRSS Series

RADIAL LEADS, POLARIZED, NEW REDUCED CASE SIZING (FURTHER REDUCED FROM NRSA SERIES) EXPANDED TAPING AVAILABILITY



**RoHS
Compliant**

includes all homogeneous materials



CHARACTERISTICS

*See Part Number System for Details

Rated Voltage Range		6.3 ~ 100 VDC							
Capacitance Range		10 ~ 10,000 μ F							
Operating Temperature Range		-40 ~ +85°C							
Capacitance Tolerance		\pm 20%							
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	63	100
	S.V. (Vdc)	8	13	20	32	44	63	79	125
	C \leq 1,000 μ F	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08
	C = 2,200 μ F	0.30	0.26	0.22	0.18	0.16	0.14		
	C = 3,300 μ F	0.32	0.28	0.24	0.20	0.18	0.18		
	C = 4,700 μ F	0.34	0.30	0.26	0.22	0.20			
Low Temperature Stability Impedance 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
	Capacitance Change	Within \pm 20% of initial measured value							
Load Life Test at Rated W.V. 85°C 2,000 Hours	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							
	Capacitance Change	Within \pm 20% of initial measured value							
Shelf Life Test 85°C 1,000 Hours No Load	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							

PERMISSIBLE RIPPLE CURRENT (mA rms AT 120Hz AND 85°C)

Cap (μ F)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
10	-	-	-	-	-	-	-	65
22	-	-	-	-	-	-	100	130
33	-	-	-	-	-	120	-	180
47	-	-	-	-	130	-	170	230
100	-	-	160	-	210	-	270	370
220	-	220	260	-	350	410	470	620
330	-	290	370	390	470	520	710	760
470	320	350	440	520	580	650	900	1000
1,000	540	620	710	830	1000	1100	1300	-
2,200	900	970	1150	1300	1550	1700	-	-
3,300	1050	1250	1400	1650	1950	2200	-	-
4,700	1350	1500	1700	2050	2400	-	-	-
6,800	1600	1850	2150	2550	-	-	-	-
10,000	2000	2350	2700	-	-	-	-	-

MAXIMUM E.S.R. (Ω AT 120HZ AND 20°C)

Cap (μ F)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
10	-	-	-	-	-	-	-	13.3
22	-	-	-	-	-	-	7.54	6.03
33	-	-	-	-	-	6.03	-	4.02
47	-	-	-	-	4.94	-	3.53	2.82
100	-	-	3.32	-	2.32	-	1.66	1.33
220	-	1.81	1.51	-	1.06	0.90	0.75	0.60
330	-	1.21	1.01	0.80	0.70	0.60	0.50	0.40
470	0.99	0.85	0.71	0.56	0.49	0.42	0.35	0.28
1,000	0.46	0.40	0.33	0.27	0.23	0.20	0.17	-
2,200	0.23	0.20	0.16	0.14	0.12	0.11	-	-
3,300	0.16	0.14	0.12	0.10	0.090	0.080	-	-
4,700	0.12	0.11	0.092	0.078	0.071	-	-	-
6,800	0.088	0.078	0.068	0.059	-	-	-	-
10,000	0.063	0.056	0.050	-	-	-	-	-

RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency (Hz)	50	120	300	1K	10K
~ 47 μ F	0.75	1.00	1.35	1.57	2.00
100 ~ 470 μ F	0.80	1.00	1.23	1.34	1.50
1000 μ F ~	0.85	1.00	1.10	1.13	1.15

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 AND CASE SIZE TABLE D ϕ x L (mm)

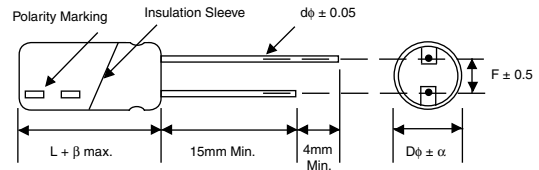
Cap(μ F)	Code	Working Voltage (WVDC)							
		6.3	10	16	25	35	50	63	100
10	100	-	-	-	-	-	-	-	6.3 x 11
22	220	-	-	-	-	-	-	5 x 11	8 x 11.5
33	330	-	-	-	-	SEE NRSA	5 x 11	SEE NRSA	8 x 12.5
47	470	-	-	-	SEE NRSA	5 x 11	SEE NRSA	6.3 x 11	10 x 12.5
100	101	-	-	5 x 11	SEE NRSA	6.3 x 11	SEE NRSA	8 x 11.5	10 x 20
220	221	-	5 x 11	6.3 x 11	SEE NRSA	8 x 11.5	10 x 12.5	10 x 16	12.5 x 25
330	331	-	6.3 x 11	SEE NRSA	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 25
470	471	6.3 x 11	6.3 x 11	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20	16 x 25
1000	102	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20	12.5 x 25	16 x 25	-
2200	222	10 x 16	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 31	-	-
3300	332	10 x 20	12.5 x 20	12.5 x 25	16 x 25	16 x 31	18 x 36	-	-
4700	472	12.5 x 20	12.5 x 25	16 x 25	16 x 31	18 x 36	-	-	-
6800	682	12.5 x 25	16 x 25	16 x 31	18 x 36	-	-	-	-
10,000	103	16 x 25	16 x 31	18 x 36	-	-	-	-	-

LEAD SPACING AND DIAMETER (mm)

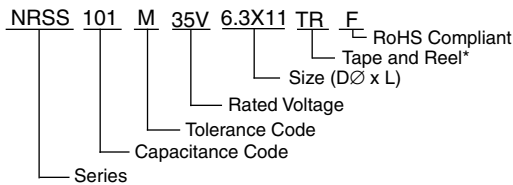
Case Dia. (D ϕ)	5	6.3	8	10	12.5	16	18	22
Leads Dia. (d ϕ)	0.5	0.5	0.6	0.6	0.6	0.8	0.8	0.8
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10
Dim. α	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0

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

DIMENSIONS (mm)



PART NUMBERING SYSTEM



*see tape specification for details