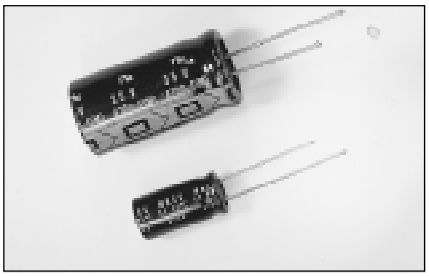
Miniature Aluminum Electrolytic Capacitors

NRSS Series

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



NRSA ➡ **NRSS**
(today's standard) **(reduced sizes)**

CHARACTERISTICS

Rated Voltage Range		6.3 ~ 100 VDC							
Capacitance Range		10 ~ 10,000µF							
Operating Temperature Range		-40 ~ +85°C							
Capacitance Tolerance		± 20%							
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	0.16	0.14	0.12	0.10	0.08
	C = 2,200µF	0.30	0.26	0.22	0.18	0.16	0.14		
	C = 3,300µF	0.32	0.28	0.24	0.20	0.18	0.18		
	C = 4,700µF	0.34	0.30	0.26	0.22	0.20			
	C = 6,800µF	0.36	0.32	0.28	0.24				
	C = 10,000µF	0.38	0.34	0.30					
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
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 ±20% of initial measured value							
	Tan δ	Less than 200% of specified maximum value							
	Leakage Current	Less than specified maximum value							

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

Cap (µF)	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 20°C AND 120Hz

Cap (µF)	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 CORRECTION FACTOR

1. Temperature Factor

Ambient Temperature (°C)	≤+60	+85
Correction Rate	1.27	1.00

2. Frequency Factor

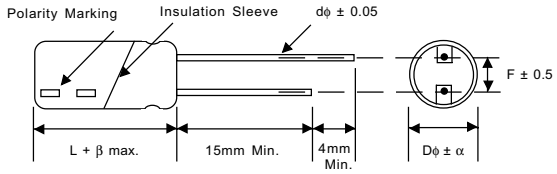
Frequency (Hz)	50	120	300	1K	10K
~ 47µF	0.75	1.00	1.35	1.57	2.00
100 ~ 470µF	0.80	1.00	1.23	1.34	1.50
1000µF ~	0.85	1.00	1.10	1.13	1.15

LEAD SPACING AND DIAMETER (mm)

Case Dia. (DØ)	5	6.3	8	10	12.5	16	18	22
Leads Dia. (dØ)	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

β = L < 20mm = 1.5mm, L ≥ 20mm = 2.0mm

DIMENSIONS (mm)



SLEEVE COLOR: BLACK

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

Cap(µF)	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	8 x 11.5	10 x 12.5	10 x 16	10 x 20	12.5 x 20	16 x 31
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 36	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