Miniature Aluminum Electrolytic Capacitors

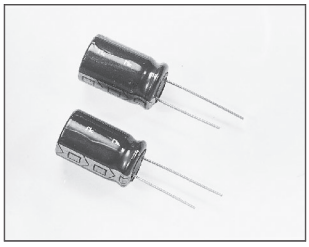
NRSG Series

ULTRA LOW IMPEDANCE, RADIAL LEADS, POLARIZED, ALUMINUM ELECTROLYTIC

RoHS Compliant

includes all homogeneous materials

*See Part Number System for Details



FEATURES

- VERY LOW IMPEDANCE
- LONG LIFE AT 105°C (2000 ~ 4000 hrs.)
- HIGH STABILITY AT LOW TEMPERATURE
- IDEALLY FOR SWITCHING POWER SUPPLIES & CONVERTORS

CHARACTERISTICS

Rated Voltage Range	6.3 ~ 100Vdc								
Capacitance Range	6.8 ~ 6,800µF								
Operating Temperature Range	-40°C ~ +105°C								
Capacitance Tolerance	±20% (M)								
Maximum Leakage Current After 2 Minutes at 20°C	0.01CV or 3µA whichever is greater								
Max. Tan δ at 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	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08
	C = 1,200µF	0.22	0.19	0.16	0.14	0.12	-	-	-
	C = 1,500µF	0.22	0.19	0.16	0.14	-	-	-	-
	C = 1,800µF	0.22	0.19	0.16	0.14	0.12	-	-	-
	C = 2,200µF	0.24	0.21	0.18	-	-	-	-	-
	C = 2,700µF	0.24	0.21	0.18	0.16	-	-	-	-
	C = 3,300µF	0.26	0.23	-	-	-	-	-	-
	C = 3,900µF	0.26	0.23	0.20	-	-	-	-	-
	C = 4,700µF	0.28	-	-	-	-	-	-	-
	C = 5,600µF	0.30	0.27	-	-	-	-	-	-
	C = 6,800µF	0.32	-	-	-	-	-	-	-
Low Temperature Stability Impedance Ratio @ 120Hz	Z-25°C/Z+20°C	2							
	Z-40°C/Z+20°C	3							
Load Life Test at Rated W.V. & 105°C 2,000 Hrs. 5 ~ 6.3mm Dia. 3,000 Hrs 8mm Dia. 4,000 Hrs 10 ~ 12.5mm Dia. 5,000 Hrs 16 ~ 18mm Dia.	Capacitance Change	Within ±25% of initial measured value							
	Tan δ	Less than 200% of specified value							
	Leakage Current	Less than specified value							

PART NUMBER SYSTEM

NRSG 102 M 25V 10X20 TB F

- F — RoHS Compliant
- TB = Tape & Box*
- 10X20 — Case Size (mm)
- 25V — Working Voltage
- M — Tolerance Code M=20%, K=10%
- 102 — Capacitance Code in µF
- NRSG — Series

*see tape specification for details

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**

MAXIMUM IMPEDANCE (mΩ AT 100KHz/20°C)

Cap (µF)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
6.8	-	-	-	-	-	-	-	1400
15	-	-	-	-	-	-	880	570
22	-	-	-	-	-	340	-	-
27	-	-	-	-	-	-	-	360
33	-	-	-	-	300	-	350	-
39	-	-	-	-	-	-	-	250
47	-	-	-	300	-	140	-	240
56	-	-	300	-	130	-	220	190
68	-	-	-	-	-	-	-	180
82	-	-	-	-	-	-	160	130
							150	130
100	-	300	-	130	-	74	-	120
120	-	-	130	-	-	61	120	94
							110	
150	300	-	-	-	72	61	-	-
180	-	-	-	-	-	46	80	71
							82	
220	-	130	-	72	56	42	73	63
					53			71
270	-	-	-	-	41	30	60	52
								53
								69
330	130	-	72	56	38	28	43	46
				53				
390	-	-	-	-	-	-	-	41
								49
470	-	72	56	41	23	27	39	33
			53	38			45	39
560	72	-	-	-	22	28	33	30
							32	31
680	-	56	41	23	21	21	29	28
		53	38				38	
820	56	-	-	23	-	23	26	-
							31	
1000	53	41	23	21	18	21	21	-
		38					25	
1200	41	23	23	-	16	-	19	-
	38				18		20	
1500	23	23	21	18	-	-	18	-
1800	-	-	-	16	16	-	-	-
				18				
2200	23	21	18	-	-	-	-	-
2700	-	-	16	16	-	-	-	-
			18					
3300	21	18	-	-	-	-	-	-
3900	18	16	16	-	-	-	-	-
		18						
4700	16	-	-	-	-	-	-	-
5600	18	16	-	-	-	-	-	-
6800	16	-	-	-	-	-	-	-

MAXIMUM RIPPLE CURRENT (mA AT 100KHz/105°C)

Cap (µF)	Working Voltage (Vdc)							
	6.3	10	16	25	35	50	63	100
6.8	-	-	-	-	-	-	-	125
15	-	-	-	-	-	-	165	205
22	-	-	-	-	-	238	-	-
27	-	-	-	-	-	-	-	355
33	-	-	-	-	250	-	265	-
39	-	-	-	-	-	-	-	450
47	-	-	-	250	-	385	-	450
56	-	-	250	-	405	-	500	565
68	-	-	-	-	-	-	-	580
82	-	-	-	-	-	-	665	750
							685	735
100	-	250	-	405	-	724	-	880
120	-	-	405	-	-	950	820	1045
							945	
150	250	-	-	-	760	979	-	-
180	-	-	-	-	-	1190	1100	1195
							1135	
220	-	405	-	760	995	1370	1300	1410
					1030			1295
270	-	-	-	-	1250	1580	1495	1560
								1600
								1470
330	405	-	760	995	1430	1870	1850	1700
				1030				
390	-	-	-	-	-	-	-	1750
								1620
470	-	760	995	1250	1820	2050	2250	1890
			1030	1430			1990	1775
560	760	-	-	-	2150	2410	2450	2080
							2550	2060
680	-	995	1250	1820	2360	2360	2780	2570
		1030	1430				2450	
820	995	-	-	1820	-	2730	2810	-
							2780	
1000	1030	1250	1820	2360	2770	3010	2835	-
		1430					3270	
1200	1250	1820	1820	-	3290	-	3340	-
	1430				3140		3310	
1500	1820	1820	2360	2770	-	-	3420	-
1800	-	-	-	3290	3460	-	-	-
				3140				
2200	1820	2360	2770	-	-	-	-	-
2700	-	-	3290	3460	-	-	-	-
			3140					
3300	2360	2770	-	-	-	-	-	-
3900	2770	3290	3460	-	-	-	-	-
		3140						
4700	3290	-	-	-	-	-	-	-
5600	3140	3460	-	-	-	-	-	-
6800	3460	-	-	-	-	-	-	-

STANDARD PRODUCT AND CASE SIZE TABLE DΦ x L (mm)

Cap (µF)	Code	Working Voltage (Vdc)							
		6.3	10	16	25	35	50	63	100
6.8	6R8	-	-	-	-	-	-	-	5x11
15	150	-	-	-	-	-	-	5x11	6.3x11
22	220	-	-	-	-	-	5x11	-	-
27	270	-	-	-	-	-	-	-	8x11.5
33	330	-	-	-	-	5x11	-	6.3x11	-
39	390	-	-	-	-	-	-	-	8x16
47	470				5x11	-	6.3x11	-	10x12.5
56	560	-	-	5x11	-	6.3x11	-	8x11.5	8x20
68	680	-	-	-	-	-	-	-	10x16
82	820	-	-	-	-	-	-	8x16	10x20
								10x12.5	12.5x16
100	101	-	5x11	-	6.3x11	-	8x12.5	-	10x23
120	121	-	-	6.3x11	-	-	8x15	8x20	12.5x20
								10x16	
150	151	5x11	-	-	-	8x12.5	10x12.5	-	-
180	181	-	-	-	-	-	8x20	10x20	12.5x25
								12.5x16	
220	221	-	6.3x11	-	8x11.5	8x15	10x16	10x23	12.5x30
						10x12.5			16x20
270	271	-	-	-	-	8x20	10x20	12.5x20	12.5x35
									16x25
									18x20
330	331	6.3x11	-	8x11.5	8x15	10x16	10x23	12.5x25	12.5x40
					10x12.5				
390	391	-	-	-	-	-	-	-	16x31.5
									18x25
470	471	-	8x11.5	8x15	8x20	10x20	12.5x20	12.5x30	16x35.5
				10x12.5	10x16			16x20	18x31.5
560	561	8x11.5	-	-	-	10x23	12.5x25	12.5x35	16x40
								16x25	18x35.5
680	681	-	8x15	8x20	10x20	12.5x20	12.5x30	12.5x40	18x40
			10x12.5	10x16				18x20	
820	821	8x15	-	-	10x20	-	16x21	16x31.5	-
								18x25	
1000	102	10x12.5	8x20	10x20	12.5x20	12.5x25	16x25	16x35.5	-
			10x16					18x31.5	
1200	122	8x20	10x20	10x20	-	12.5x30	-	16x40	-
		10x16				16x21		18x35.5	
1500	152	10x20	10x20	12.5x20	12.5x25	-	-	18x40	-
1800	182	-	-	-	12.5x30	16x25	-	-	-
					16x21				
2200	222	10x20	12.5x20	12.5x25	-	-	-	-	-
2700	272	-	-	12.5x30	16x25	-	-	-	-
				16x21					
3300	332	12.5x20	12.5x25	-	-	-	-	-	-
3900	392	12.5x25	12.5x30	16x25	-	-	-	-	-
			16x21						
4700	472	12.5x30	-	-	-	-	-	-	-
5600	562	16x21	16x25	-	-	-	-	-	-
6800	682	16x25	-	-	-	-	-	-	-

DIAMETER AND LEADSPACE (mm)

Case Dia. (Dϕ)	5	6.3	8	10	12.5	12.5x30	16	18
Lead Dia. (dϕ)	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	5.0	7.5	7.5
Dim. α	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5

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

