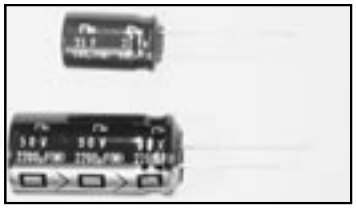
Miniature Aluminum Electrolytic Capacitors

NRSY Series

REDUCED SIZE, LOW IMPEDANCE, RADIAL LEADS, POLARIZED ALUMINUM ELECTROLYTIC CAPACITORS

RoHS Compliant
includes all homogeneous materials
*See Part Number System for Details



FEATURES

- FURTHER REDUCED SIZING
- LOW IMPEDANCE AT HIGH FREQUENCY
- IDEALLY FOR SWITCHERS AND CONVERTERS

CHARACTERISTICS

Rated Voltage Range	6.3 ~ 50Vdc						
Capacitance Range	22 ~ 15,000µF						
Operating Temperature Range	-55°~+105°C						
Capacitance Tolerance	±20% (M)						
Maximum Leakage Current After 2 minutes At 20°C	0.01CV, or 3µA, whichever is greater						
Maximum Tan δ At 20°C & 120Hz	W.V. (Vdc)	6.3	10	16	25	35	50
	C ≤ 1,000	0.28	0.24	0.20	0.16	0.14	0.12
	C = 2,200	0.30	0.26	0.22	0.18	0.16	0.14
	C = 3,300	0.32	0.28	0.24	0.20	0.18	
	C = 4,700	0.34	0.30	0.26	0.22		
	C = 6,800	0.38	0.34	0.30			
	C = 10,000	0.56	0.42				
	C = 15,000	0.56					
Low Temperature Stability	Z-40°C/Z+20°C	3	3	2	2	2	2
(Impedance Ratio@120Hz)	Z-55°C/Z+20°C	6	5	4	4	3	3
Load Life Test at Rated W.V.	Capacitance Change	Within ±25% of initial measured value					
105°C 1,000 Hrs. = 8∅ & less 105°C 2,000 Hrs. = 10∅	Tan δ	Less than 200% of specified maximum value					
105°C 3,000 Hrs. = 12.5∅ & up	Leakage Current	Less than specified value					

MAXIMUM IMPEDANCE AT 20°C AND 100KHz (Ω)

Cap (µF)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
22	-	-	-	-	-	1.40
33	-	-	-	-	0.72	1.40
47	-	-	-	-	0.50	0.74
100	-	-	0.50	0.30	0.24	0.46
220	0.50	0.30	0.24	0.16	0.15	0.22
330	0.30	0.24	0.16	0.15	0.086	0.18
470	0.24	0.16	0.15	0.086	0.066	0.11
1000	0.15	0.086	0.066	0.047	0.042	0.072
2200	0.066	0.047	0.042	0.040	0.026	0.045
3300	0.047	0.042	0.040	0.026	0.022	-
4700	0.042	0.031	0.026	0.022	-	-
6800	0.031	0.026	0.022	-	-	-
10000	0.026	0.022	-	-	-	-
15000	0.022	-	-	-	-	-

MAXIMUM PERMISSIBLE RIPPLE CURRENT (mA RMS AT 105°C AND 10KHz-200KHz)

Cap (µF)	Working Voltage (Vdc)					
	6.3	10	16	25	35	50
22	-	-	-	-	-	120
33	-	-	-	-	180	130
47	-	-	-	-	180	190
100	-	-	180	280	280	320
220	180	280	280	410	560	520
330	280	280	410	510	710	670
470	280	410	560	710	950	820
1000	560	710	950	1150	1460	1200
2200	950	1150	1460	1650	2000	1750
3300	1150	1460	1650	2000	2200	-
4700	1460	1780	2000	2200	-	-
6800	1780	2000	2200	-	-	-
10000	2000	2200	-	-	-	-
15000	2200	-	-	-	-	-

RIPPLE CURRENT CORRECTION FACTOR

Frequency (Hz)	100<f<1K	1K<f<10K	10K<f
22<C<100	0.55	0.8	1.0
100<C<1000	0.7	0.9	1.0
1000<C	0.9	0.95	1.0

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

Cap. (µF)	Code	Working Voltage (Vdc)					
		6.3	10	16	25	35	50
22	220	-	-	-	-	-	5x11
33	330	-	-	-	-	5x11	5x11
47	470	-	-	-	-	5x11	6.3x11
100	101	-	-	5x11	6.3x11	6.3x11	8x11.5
220	221	5x11	6.3x11	6.3x11	8x11.5	8x11.5	10x12.5
330	331	6.3x11	6.3x11	8x11.5	8x11.5	10x12.5	10x16
470	471	6.3x11	8x11.5	8x11.5	10x12.5	10x16	10x20
1000	102	8x11.5	10x12.5	10x16	10x20	12.5x20	12.5x25
2200	222	10x16	10x20	12.5x20	12.5x25	16x25	16x31.5
3300	332	10x20	12.5x20	12.5x25	16x25	16x35.5	-
4700	472	12.5x20	12.5x25	16x25	16x31.5	-	-
6800	682	12.5x25	16x25	16x31.5	-	-	-
10,000	103	16x25	16x31.5	-	-	-	-
15,000	153	16x35.5	-	-	-	-	-

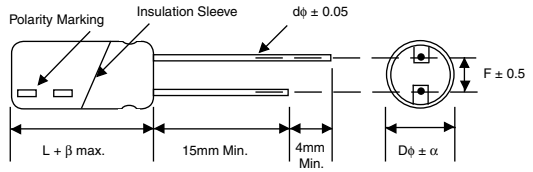
PART NUMBERING SYSTEM

NRSY 102 M 25V 10x25 TR F

- F — RoHS Compliant
- TR — Tape and Reel
- 10x25 — Size (DØ x L)
- 25V — Rated Voltage
- M — Tolerance Code
- 102 — Capacitance Code
- NRSY — Series

LEADSPACE AND DIAMETER (mm)

Case Dia. (DØ)	5	6.3	8	10	12.5	16
Leads Dia. (dØ)	0.5	0.5	0.6	0.6	0.6	0.8
Lead Spacing (F)	2.0	2.5	3.5	5.0	5.0	7.5
Dim. α	0.5	0.5	0.5	0.5	0.5	0.5



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