



Non-Polar For General Purpose – Radial Type-Series D – Type NDR

ALUMINUM ELECTROLYTIC CAPACITORS

Series D are suitable for use in circuits whose polarity is reversed or unknown or crossover networks which do not require tough characteristic requirements.

Operating temperature range: -40°C ~ +85°C.

Capacitance and tolerance: Capacitance measurements shall be made by referred to a frequency of 120Hz⁺¹⁰₋₅Hz. The capacitance shall be within the specified tolerance of ±20%. (±10% units are available on request).

Leakage current: Measurements shall be made at rated DC voltage with an application of a steady source of power, such as a regulated power supply. A current-limiting resistor of 1,000 ohms shall be connected in series with each capacitor under test. Rated DC working voltage shall be applied to the capacitor for 5 minutes before making the leakage current measurements.

The maximum leakage current shall not exceed the value determined from the following equation or 3µA, whichever is greater:

$I = 0.03CV$

- where: I = Leakage Current (µA)
- C = Nominal Capacitance (µF)
- V = Rated DC Voltage (V. DC)

Dissipation factor: Measurements at a frequency of 120 Hz⁺¹⁰₋₅Hz, the dissipation factor shall be less than the values in Table 1.

Table 1.

Rated Voltage (V. DC)	dissipation Factor (%)
6.3	24
10	20
16	16
25	15
35	14
50	12
63	10
80, 100	9

Low-temperature characteristics: The ratio of the impedance of -25°C to that of +20°C shall be less than the values in Table 2.

Table 2.

Rated Voltage (V)	Z @ -25°C	Z @ -40°C
	Z @ +20°C	Z @ +20°C
6.3	4	8
10	3	6
16	2	4
25	2	4
35	2	4
50 ~ 100	2	4

Life test: Rated voltage shall be applied to the capacitors in series with a one thousand ohm resistor. All tests shall be conducted in a dry oven with circulating air. Capacitors shall be separated by a distance not less than 2.5CM and air circulation shall be provided to prevent temperature within 15CM of any capacitors from departing more than +0°C-5°C from the nominal ambient temperature of the chamber. Capacitors shall not be exposed to direct radiation from heating elements.

Capacitors shall be subjected to for a period of 1000 hours at 85°C.

After the completion of the life test capacitors shall be returned to standard test conditions.

Table 3.

Leakage current	Same as specified under Leakage Current
Capacitance	Within ±20% of initial measurements
Dissipation factor	200% less of value in Table 1
Appearance	Free from leakage of electrolyte and/or other noticeable deformation

Shelf life test: Capacitors shall be subjected to +85°C±2°C for 1000±12 hours during which time no voltage shall be applied.

Following this period the capacitors shall be cool to room temperature and then D.C. rated voltage shall be applied to the capacitors for 30 minutes after which the capacitors shall be discharged.

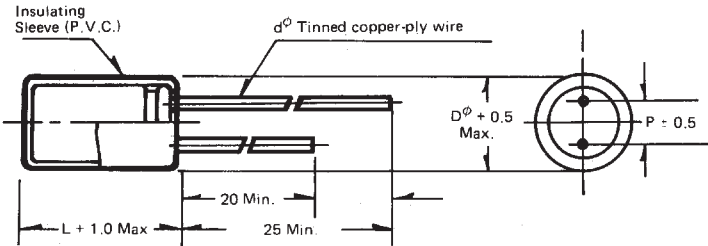
After completion of these procedures, the capacitors shall meet the requirements as listed in Table 3.



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• CONFIGURATION

Dimensions: mm



Outside Diameter	D ϕ	5	6	8	10	13	16
Lead Spacing	P	2.0	2.5	3.5	5.0	5.0	7.5
Lead Wire	d ϕ	0.5	0.5	0.6	0.6	0.6	0.8

DIMENSIONS: Diameter (D ϕ) x Length (L): mm

Rated Voltage (V)	6.3	10	16	25	35	50	63	80	100
Surge Voltage (V)	8	13	20	32	44	63	79	100	125
CAP. (μ F)									
0.47	5x11	5x11	5x11	5x11	5x11	5x11	5x11	5x11	5x11
1.0	5x11	5x11	5x11	5x11	5x11	5x11	5x11	5x11	5x11
2.2	5x11	5x11	5x11	5x11	5x11	5x11	5x11	5x11	6x11
3.3	5x11	5x11	5x11	5x11	5x11	5x11	5x11	6x11	6x11
4.7	5x11	5x11	5x11	5x11	5x11	5x11	6x11	6x11	6x11
10	5x11	5x11	5x11	5x11	5x11	6x11	6x11	8x11.5	8x11.5
22	5x11	5x11	5x11	6x11	6x11	8x11.5	8x11.5	10x16	10x16
33	5x11	5x11	5x11	6x11	8x11.5	8x11.5	10x12.5	10x16	13x20
47	5x11	5x11	6x11	6x11	8x11.5	10x12.5	10x16	10x20	13x20
100	6x11	6x11	8x11.5	8x11.5	10x16	10x20	13x20	13x25	16x25
220	8x11.5	8x11.5	10x12.5	10x16	13x20	13x25	16x25		
330	10x12.5	10x16	10x16	13x20	13x20	16x25			
470	10x16	10x16	10x20	13x20	13x25				
1000	13x20	13x20	13x25	16x25					