



High-Voltage Type – Type HVR & HVA

ALUMINUM ELECTROLYTIC CAPACITORS

NITAI'S high voltage aluminum electrolytic capacitors are suited where needs miniature size, high CV product, low leakage and long operating life.

Rated voltages range from 160 V.DC through 450 V.DC.

Operating temperature range: -25°C~+85°C.

Capacitance and tolerance: Capacitance measurements shall be made by the bridge method at a frequency of 120_{-5}^{+10} Hz.

The capacitance shall be within the specified tolerance of $\pm 20\%$.

Leakage current: A current-limiting resistor of 1,000 ohms shall be connected in series with each capacitor under test. The DC leakage current shall be measured after rated voltage has been applied for a period of five minutes.

The maximum leakage current for any capacitor shall not exceed the value determined from the following equation:

$$I = 0.06CV + 10$$

where: I = Leakage current (UA)
C = Nominal capacitance (UF)
V = Rated DC voltage (V.DC)

Dissipation factor: Measured at a frequency of 120_{-5}^{+10} Hz, the dissipation factor shall be less than the values in Table 1.

Table 1.

Rated Voltage (V.DC)	Dissipation Factor (%)
160 ~ 250	20
350 ~ 450	25

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.DC)	Z @ -25°C
	Z @ +20°C
160	4
200~250	8
350~450	20

Life test: Full rated DC voltage shall be applied to the capacitors through a series protective resistor (1,000 ohms) for a period of 1,000 hours ± 12 hours, while the capacitors are maintained at an ambient temperature of +85°C $\pm 2^\circ$ C (shielded from direct heat radiation).

The capacitors shall then be removed from the test chamber and stabilized at room temperature and meet each of the values listed in Table 3.

Table 3.

Leakage current	Same as specified under the values mentioned in Leakage Current Item
Capacitance	Within $\pm 20\%$ of initial measurements
Dissipation factor	Less than 150% of values in Table 1.
Appearance	Free from leakage of electrolyte and/or other noticeable deformation

Shelf life test: Prior to testing, each capacitor in the test group is measured for capacitance, dissipation factor and DC leakage current.

The capacitors are then stored with no voltage applied at a temperature of +85°C $\pm 2^\circ$ C for 1,000 hours ± 12 hours. Following this period the capacitors shall be removed from the test chamber and be allowed to stabilize at room temperature. Next they shall be connected to a series limiting resistor with DC rated voltage applied for 30 minutes after which the capacitors shall be discharged. After completion of these procedures the capacitors shall meet each of the requirements as listed in Table 3.

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SALES: (800) 237-4564 PHONE: (941) 355-9791 FAX: (941) 355-1530**High-Voltage – Type HVR & HVA**

RIPPLE CURRENT IN mA-RMS (at 120 Hz, +85° C)—peak voltage not to exceed rated DC voltage—

RADIAL TYPE

Rated Voltage (V)	160	200	250	350	400	450
Surge Voltage (V)	200	250	300	400	450	500
CAP. (μF)						
1.0	27	27	28	25	25	25
2.2	42	42	43	38	38	38
3.3	50	50	50	47	47	48
4.7	60	60	60	55	55	55
10	90	95	95	85	85	85
15	120	120	120	105	105	110
22	140	145	150	130	130	135
33	175	180	180	165	170	170
47	220	220	225	205	345	350
100	330	345	345	315	340	346
220	539	539	550			

AXIAL TYPE

Rated Voltage (V)	160	200	250	350	400	450
Surge Voltage (V)	200	250	300	400	450	500
CAP. (μF)						
1.0	27	27	28	25	25	25
2.2	42	43	43	38	38	38
3.3	50	50	50	47	47	47
4.7	60	60	60	55	55	55
10	95	95	95	85	85	85
15	115	115	120	105	105	110
22	140	145	150	130	135	135
33	175	180	185	160	170	180
47	220	220	225	205	214	220
100	335	345	360	330	340	355
150	440	440	465	435		
220	535	560	610			
330	720	740				
470	890					

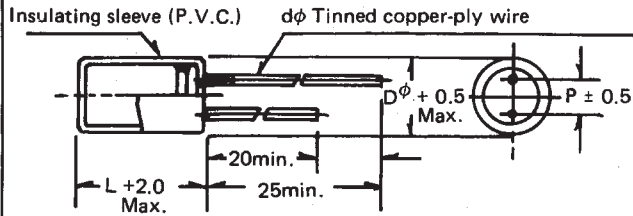


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RADIAL TYPE

● CONFIGURATION

Dimensions:mm

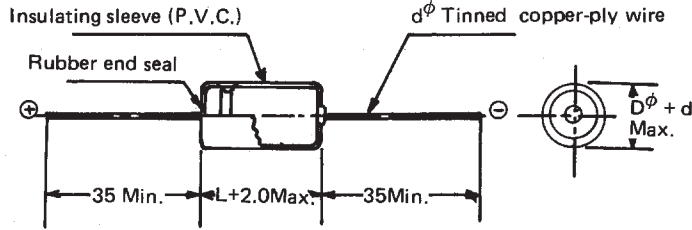


Outside Diameter	D ϕ	5	6	8	10	13	16	18	22
Lead Spacing	P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10
Lead Wire	d ϕ	0.5	0.5	0.5	0.6	0.6	0.8	0.8	1.0

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

Rated Voltage (V)	160	200	250	350	400	450
Surge Voltage (V)	200	250	300	400	450	500
CAP. (μ F)						
1.0	5x11	6x12	6x12	8x13	8x13	8x13
2.2	6x12	6x12	6x12	8x13	10x15	10x15
3.3	8x13	8x13	8x13	10x15	10x15	10x15
4.7	8x13	10x15	10x15	10x18	10x20	10x20
10	10x15	10x20	10x20	10x20	13x21	13x21
15	10x20	10x20	10x20	13x21	13x27	13x27
22	10x20	13x21	13x21	13x21	16x28	16x28
33	13x21	13x21	13x21	16x28	16x36	16x36
47	13x21	16x27	16x27	16x33	16x36	18x36
100	16x27	16x36	16x36	22x39	22x45	22x45
220	18x37	18x41	22x38			

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AXIAL TYPE


Outside Diameter	Dφ	6	8	10	13	16	18	22
Tolerance	α	0.5	0.5	0.5	0.5	0.5	1.0	1.0
Wire	dφ	0.6	0.6	0.6	0.6	0.8	0.8	0.8

DIMENSIONS: Diameter (Dφ) x Length (L): mm

Rated Voltage (V)	160	200	250	350	400	450
Surge Voltage (V)						
CAP. (μF)						
1.0	6x12	6x12	6x12	8x13	8x13	8x13
2.2	6x12	8x13	8x13	8x16	10x16	10x16
3.3	8x13	8x13	8x13	10x16	10x16	10x16
4.7	8x13	10x16	10x16	10x21	10x21	10x21
10	10x16	10x21	10x21	10x21	13x23	13x23
15	10x21	10x21	10x21	13x22	13x27	13x27
22	10x21	13x22	13x22	13x27	16x29	16x29
33	13x22	13x27	13x27	16x28	16x37	16x37
47	13x27	16x28	16x28	16x34	16x37	18x38
100	16x33	16x37	16x37	18x42	22x45	22x45
150	18x36	18x40	18x45	22x45		
220	18x42	22x45	22x45			
330	22x45	22x45				
470	22x50					