ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

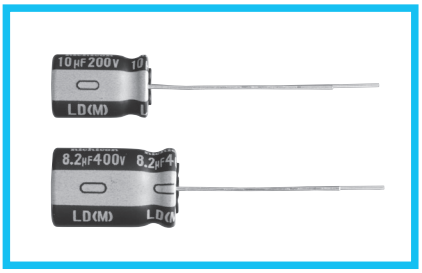
ULD

Miniature sized, Long Life Assurance

Long Life

- Long Life product withstanding load life of 10000 hours at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU, (EU)2015/863).

UCY
UHE → Long Life → ULD



Valued marked with an ※ in the dimension table are scheduled to be discontinued and are not recommended for new designs.

■Specifications

Item	Performance Characteristics		
Category Temperature Range	−40 to +105°C		
Rated Voltage Range	10 to 450V		
Rated Capacitance Range	22 to 330μF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current ※	Rated Voltage(V)	10 to 100	160 to 450
	—	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV (μA).	After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I= 0.1CV+40 (μA) or less. CV > 1000 : I= 0.04CV+100 (μA) or less.

Tangent of loss angle (tan δ)

Measurement frequency : 120Hz at 20°C

Rated voltage (V)	10	16	25	35	50	63	100	160 to 450
tan δ (max.)	0.45	0.35	0.3	0.22	0.19	0.17	0.15	0.24

Stability at Low Temperature

Measurement frequency : 120Hz

Rated voltage (V)		10	16	25·35	50 to 100	160 to 250	400	450
Impedance ratio (max.)	Z(−25°C) / Z(+20°C)	8	6	4	3	3	6	6
	Z(−40°C) / Z(+20°C)	—	—	—	—	8	10	—

Endurance

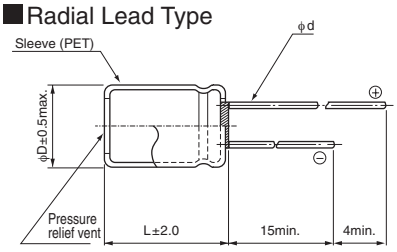
Rated Voltage(V)	10 to 100	160 to 450
—	The specifications listed below shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 10000 hours at 105˚C, the peak voltage shall not exceed the rated voltage.	The specifications listed below shall be met when the capacitors are restored to 20˚C after D.C. bias plus rated ripple current is applied for 20000 hours (15000 hours for φ8×11.5L, φ10×12.5L) at 105°C, the peak voltage shall not exceed the rated voltage.

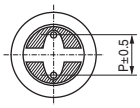
Capacitance change	Within ± 25%(10V to 100V) ± 30%(160V to 450V) of the initial capacitance value
tan δ	300% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life	After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.
Marking	Printed with white color letter on dark brown sleeve.

※ I : Leakage Current (μA), C : Rated Capacitance (μF), V : Rated Voltage (V)

■Radial Lead Type





(mm)

φD	8	10	12.5	16	18
P	3.5	5.0	5.0	7.5	7.5
φd	0.6	0.6	0.6	0.8	0.8

- Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

Type numbering system (Example : 400V 6.8μF)

1	2	3	4	5	6	7	8	9	10	11	12
U	L	D	2	G	6	R	8	M	P	D	

- Size code
- Configuration ※
- Capacitance tolerance (±20%)
- Rated capacitance (6.8μF)
- Rated voltage (400V)
- Series name
- Type

※Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
8 • 10	PD
12.5 to 18	HD

• Frequency coefficient of rated ripple current (10～100V)

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz
22μF	0.55	0.75	0.90	1.00
47 to 330μF	0.70	0.85	0.95	1.00

• Frequency coefficient of rated ripple current (160～450V)

Cap.(μF) \ Frequency	120Hz	1kHz	10kHz	100kHz or more
2.2 to 5.6μF	1.00	1.60	1.80	2.00
6.8 to 18μF	1.00	1.50	1.70	1.90
22 to 68μF	1.00	1.40	1.60	1.80

●Dimension table in next page.

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■Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L(mm)	tan δ	Leakage Current (μA)		Rated Ripple (mArms)		Part Number
				at 20℃ after 1 minute	at 20℃ after 2 minutes	105℃/ 100kHz	105℃/ 120Hz	
10 (1A)	330	8×11.5	0.45	—	33	330	—	ULD1A331MPD
16 (1C)	220	8×11.5	0.35	—	35.2	330	—	ULD1C221MPD
	270	8×11.5	0.35	—	43.2	330	—	ULD1C271MPD
25 (1E)	150	8×11.5	0.30	—	37.5	330	—	ULD1E151MPD
35 (1V)	100	8×11.5	0.22	—	35	330	—	ULD1V101MPD
50 (1H)	100	8×11.5	0.19	—	50	270	—	ULD1H101MPD
63 (1J)	47	8×11.5	0.17	—	29.61	240	—	ULD1J470MPD
100 (2A)	22	8×11.5	0.15	—	22	230	—	ULD2A220MPD
160 (2C)	15	8×11.5	0.24	196	—	—	92	ULD2C150MPD
	22	10×12.5	0.24	240.8	—	—	121	ULD2C220MPD
	33	10×16	0.24	311.2	—	—	158	ULD2C330MPD

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L(mm)	tan δ	Leakage Current (μA) (at 20℃ after 1 minute)	Rated Ripple (mArms) (105℃/120Hz)	Part Number
200 (2D)	10	8×11.5	0.24	180	80	ULD2D100MPD
	18	10×12.5	0.24	244	113	ULD2D180MPD
	27	10×16	0.24	316	149	ULD2D270MPD
250 (2E)	5.6	8×11.5	0.24	156	62	※ULD2E5R6MPD
	6.8	8×11.5	0.24	168	68	※ULD2E6R8MPD
	10	10×12.5	0.24	200	90	※ULD2E100MPD
	12	10×12.5	0.24	220	97	※ULD2E120MPD
	18	10×16	0.24	280	129	※ULD2E180MPD
400 (2G)	2.2	8×11.5	0.24	128	40	ULD2G2R2MPD
	2.7	8×11.5	0.24	143.2	43	ULD2G2R7MPD
	3.3	8×11.5	0.24	152.8	47	ULD2G3R3MPD
	3.9	10×12.5	0.24	162.4	57	ULD2G3R9MPD
	4.7	10×12.5	0.24	175.2	61	ULD2G4R7MPD
	5.6	10×12.5	0.24	189.6	64	ULD2G5R6MPD
	6.8	10×16	0.24	208.8	85	ULD2G6R8MPD
	8.2	10×16	0.24	231.2	88	ULD2G8R2MPD
450 (2W)	5.6	10×16	0.24	200.8	58	ULD2W5R6MPD
	6.8	10×16	0.24	222.4	62	ULD2W6R8MPD
	8.2	10×20	0.24	247.6	88	ULD2W8R2MPD
	10	10×20	0.24	280	92	ULD2W100MPD
	15	12.5×20	0.24	370	140	ULD2W150MHD
	22	12.5×25	0.24	496	240	ULD2W220MHD
	22	16×20	0.24	496	292	ULD2W220MHD6
	27	16×20	0.24	586	305	ULD2W270MHD
	33	16×25	0.24	694	392	ULD2W330MHD
	33	18×20	0.24	694	312	ULD2W330MHD6
	47	18×25	0.24	946	480	ULD2W470MHD
	68	18×30.5	0.24	1324	520	ULD2W680MHD

For cut leads, formed leads or taped parts, please add the appropriate code after the size code (12th digit).
If there is no size code in the part number, please add size code "1" and then add the appropriate code.

- For formed lead or taped product specifications and minimum order quantity, please refer to the Guidelines for Aluminum Electrolytic Capacitors.