

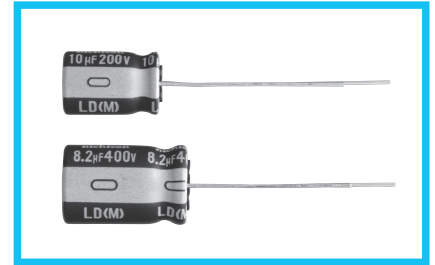
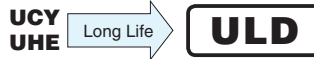
# ALUMINUM ELECTROLYTIC CAPACITORS

# ULD

Miniature sized, Long Life Assurance



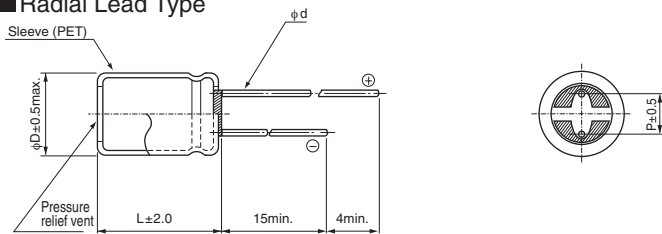
- Long Life product withstanding  
load life of 20000 hours (some are 15000 or 10000 hours) at +105°C.
- Suited for the power supply for LED lighting.
- Compliant to the RoHS directive (2011/65/EU,(EU)2015/863).



## 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
	—	After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV (µA).
Tangent of loss angle (tan δ)	Rated Voltage(V)	160 to 450
	—	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.
Stability at Low Temperature	Measurement frequency : 120Hz at 20°C	
	Rated voltage (V)	10    16    25    35    50    63    100    160 to 450
Endurance	Rated Voltage(V)	10 to 100
	—	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.
Shelf Life	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
Marking	Leakage current	Less than or equal to the initial specified value
	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.	
Printed with white color letter on dark brown sleeve.		

## 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

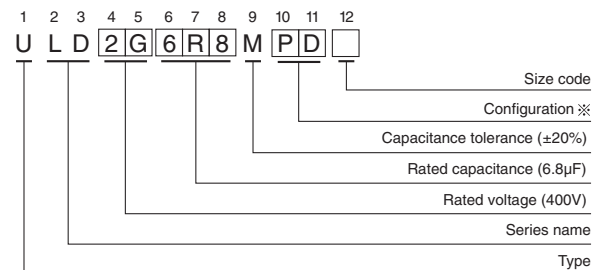
● Please refer to the Guidelines for Aluminum Electrolytic Capacitors for end seal configuration information.

● 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

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

Type numbering system (Example : 400V 6.8µF)



※ Configuration

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

● 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.

## ULD

## ■ Dimensions

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 2 minute)	Rated Ripple (mArms) (105°C/100Hz)	Part Number
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

Rated Voltage (V) (code)	Rated Capacitance (μF)	Case Size φD×L (mm)	tan δ	Leakage Current (μA) (at 20°C after 1 minute)	Rated Ripple (mArms) (105°C/120Hz)	Part Number
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
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
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
450 (2W)	8.2	10×16	0.24	231.2	88	ULD2G8R2MPD
	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.