

HL Series Useful of 5,000 hours at 105°C

• Conform RoHS

Features

• The HL type is the radial type products of 5,000 hours.

HU
P.160

→
Long-life

HL

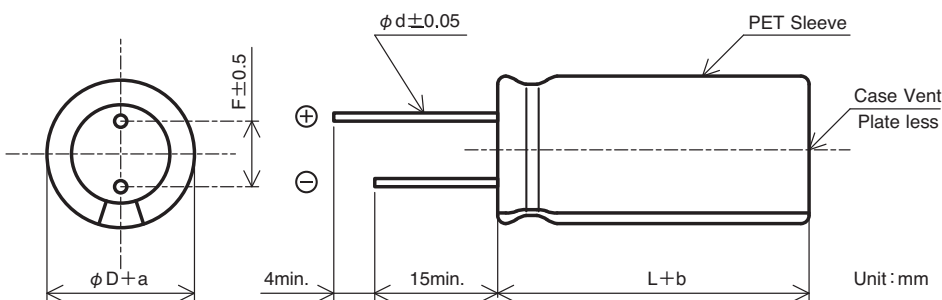


ALUMINUM ELECTROLYTIC CAPACITORS

Product Specifications

Items	Specifications
Temperature range	-25°C ~ +105°C
Rated voltage	200 ~ 450V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	Not more than 0.04CV + 100 (µA) (20°C, after 2 minutes) [C = nominal capacitance (µF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20°C, 120Hz)
Permissible ripple current	As specified in the standard product table. (105°C, 120Hz)
Endurance	After the rated voltage with specified ripple current is applied at 105°C for 5,000 hours : Capacitance change : Within ±20% of the initial value measured. Dissipation factor : 200% or less than the initial value specified. Leakage current : Less than or equal to the initial value specified.
Shelf life	The following specification shall be meet when the capacitor are restored to 20°C after storage of 1,000 hours at 105°C with no voltage applied. Before the measurement, the capacitor shall be preconditioned by applying the voltage treatment according to Item 4.1 of JIS C 5101-4. Capacitance change : Within ±20% of the initial value measured. Dissipation factor : 200% or less than the initial value specified. Leakage current : 200% or less than the initial value specified.
Others	JIS C 5101-4

Dimensions



φD	φd	F	a	b
10	0.6	5.0	0.5MAX	2.0MAX
12.5	0.6	5.0	0.5MAX	2.0MAX
16	0.8	7.5	0.5MAX	2.0MAX
18	0.8	7.5	0.5MAX	2.0MAX

Ripple current correction coefficient

Frequency (Hz)	50/60	120	1K	10K	≥100K
Correction coefficient	0.80	1.00	1.55	1.85	2.00

Product code

(Example) HL series 450V 68µF ±20%

HL 2W 680 M L V 25 EC

- HL: Type of series
- 2W: Rated voltage code
- 680: Capacitance code
- M: Capacitance tolerance code
- L: Terminal code
- V: Case dia code
- 25: Case height code
- EC: Environmental code

Refer to page 167 for other terminal shape available on request.

RADIAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

HL Series

Standard Products Table

Rated Voltage (V.DC)	Capacitance (μ F)	Case size ϕ D \times L (mm)	$\tan \delta$ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	Product name
200	220	16 \times 31.5	0.20	1.05	HL2D221MLU315EC
	330	16 \times 40	0.20	1.43	HL2D331MLU40EC
		18 \times 31.5	0.20	1.43	HL2D331MLV315EC
	470	18 \times 45	0.20	1.75	HL2D471MLV45EC
	560	18 \times 50	0.20	1.93	HL2D561MLV50EC
220	100	16 \times 20	0.20	0.63	HL220V101MLU20EC
	220	16 \times 31.5	0.20	1.10	HL220V221MLU315EC
	330	16 \times 45	0.20	1.45	HL220V331MLU45EC
		18 \times 35.5	0.20	1.45	HL220V331MLV355EC
	470	18 \times 45	0.20	1.78	HL220V471MLV45EC
250	100	16 \times 25	0.20	0.66	HL2E101MLU25EC
	220	16 \times 35.5	0.20	1.15	HL2E221MLU355EC
		18 \times 31.5	0.20	1.15	HL2E221MLV315EC
	330	16 \times 50	0.20	1.48	HL2E331MLU50EC
		18 \times 40	0.20	1.48	HL2E331MLV40EC
350	33	12.5 \times 20	0.24	0.33	HL2V330MLS20EC
	100	16 \times 31.5	0.24	0.77	HL2V101MLU315EC
		18 \times 25	0.24	0.77	HL2V101MLV25EC
	220	18 \times 40	0.24	1.22	HL2V221MLV40EC
400	10	10 \times 16	0.24	0.12	HL2G100MLR16EC
	15	10 \times 20	0.24	0.15	HL2G150MLR20EC
	27	12.5 \times 20	0.24	0.26	HL2G270MLS20EC
	33	12.5 \times 25	0.24	0.30	HL2G330MLS25EC
	39	12.5 \times 25	0.24	0.34	HL2G390MLS25EC
	47	16 \times 20	0.24	0.45	HL2G470MLU20EC
	56	16 \times 25	0.24	0.50	HL2G560MLU25EC
		18 \times 20	0.24	0.50	HL2G560MLV20EC
	68	16 \times 25	0.24	0.59	HL2G680MLU25EC
	82	16 \times 31.5	0.24	0.67	HL2G820MLU315EC
		18 \times 25	0.24	0.67	HL2G820MLV25EC
	100	16 \times 35.5	0.24	0.78	HL2G101MLU355EC
		18 \times 31.5	0.24	0.78	HL2G101MLV315EC
	120	16 \times 40	0.24	0.85	HL2G121MLU40EC
		18 \times 31.5	0.24	0.85	HL2G121MLV315EC
	150	16 \times 45	0.24	0.98	HL2G151MLU45EC
		18 \times 40	0.24	0.98	HL2G151MLV40EC
	180	16 \times 50	0.24	1.08	HL2G181MLU50EC
18 \times 45		0.24	1.08	HL2G181MLV45EC	
220	18 \times 50	0.24	1.22	HL2G221MLV50EC	

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Standard Products Table

Rated Voltage (V.DC)	Capacitance (μF)	Case size $\phi D \times L$ (mm)	$\tan \delta$ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	Product name
420	10	10×16	0.24	0.13	HL420V100MLR16EC
	15	10×20	0.24	0.18	HL420V150MLR20EC
	22	12.5×20	0.24	0.27	HL420V220MLS20EC
	27	12.5×25	0.24	0.30	HL420V270MLS25EC
	33	12.5×25	0.24	0.37	HL420V330MLS25EC
	39	16×20	0.24	0.40	HL420V390MLU20EC
	47	16×25	0.24	0.47	HL420V470MLU25EC
	56	16×25	0.24	0.65	HL420V560MLU25EC
		18×20	0.24	0.65	HL420V560MLV20EC
	68	16×31.5	0.24	0.72	HL420V680MLU315EC
	82	16×31.5	0.24	0.72	HL420V820MLU315EC
		18×25	0.24	0.72	HL420V820MLV25EC
	100	16×35.5	0.24	0.83	HL420V101MLU355EC
		18×31.5	0.24	0.83	HL420V101MLV315EC
	120	16×40	0.24	0.93	HL420V121MLU40EC
		18×35.5	0.24	0.93	HL420V121MLV355EC
150	16×50	0.24	1.05	HL420V151MLU50EC	
	18×40	0.24	1.05	HL420V151MLV40EC	
180	18×45	0.24	1.15	HL420V181MLV45EC	
450	8.2	10×16	0.24	0.12	HL2W8R2MLR16EC
	10	10×20	0.24	0.13	HL2W100MLR20EC
	22	12.5×20	0.24	0.25	HL2W220MLS20EC
	27	12.5×25	0.24	0.29	HL2W270MLS25EC
	33	12.5×25	0.24	0.39	HL2W330MLS25EC
	47	18×20	0.24	0.51	HL2W470MLV20EC
	56	16×25	0.24	0.57	HL2W560MLU25EC
		18×25	0.24	0.57	HL2W560MLV25EC
	68	18×25	0.24	0.67	HL2W680MLV25EC
	82	16×35.5	0.24	0.75	HL2W820MLU355EC
	100	16×40	0.24	0.84	HL2W101MLU40EC
		18×31.5	0.24	0.84	HL2W101MLV315EC
	120	16×45	0.24	0.94	HL2W121MLU45EC
	150	16×50	0.24	1.05	HL2W151MLU50EC
		18×45	0.24	1.05	HL2W151MLV45EC
	180	18×45	0.24	1.10	HL2W181MLV45EC

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