

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

**UPGRADE!**

## HL Series Useful of 8,000 hours at 105°C

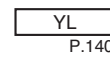
• Conform RoHS

### Features

• The HL series is the miniaturization products of 8,000 hours.



→ Long-life

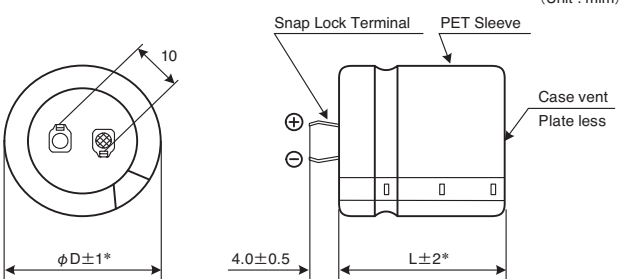


### Product Specifications

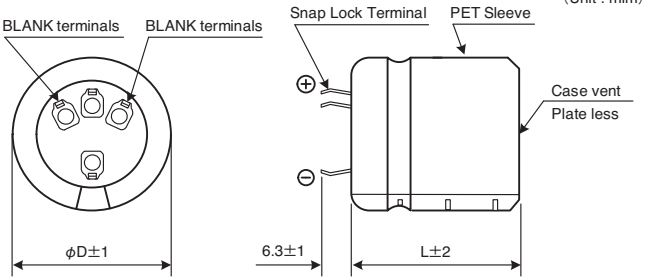
Items	Specifications
Temperature range	-40°C ~ +105°C (200, 250V.DC) -25°C ~ +105°C (315 ~ 500V.DC)
Rated voltage	200 ~ 550V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	0.02CV (µA) or 3mA, whichever is smaller or less (20°C, after 5 minutes) [C = nominal capacitance (µF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20°C, 120Hz)
Permissible ripple current	As specified in the standard products table. (105°C, 120Hz)
Endurance	After the rated voltage with specified ripple current is applied at 105°C for 5000 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 500 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 ±15% of the initial value measured Dissipation factor : 175% or less than the initial value specified Leakage current : Less than or equal to the initial value specified
Others	JIS C 5101-4

### Dimensions

2-claw short terminal (Terminal code : C)



4-claw terminal (Terminal code : S)



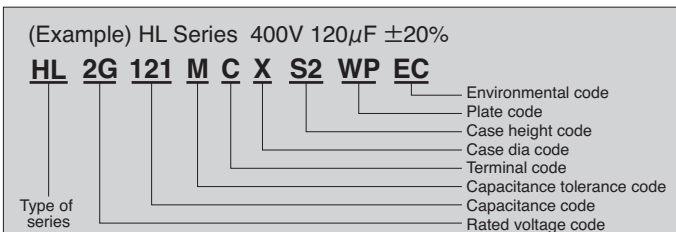
\* Products marked with "\*" in the standard products table : φD±1.5, L±2.5  
(For details of product specifications please request specification sheet.)

### Ripple current correction coefficient

Temperature (°C)	60	70	85	105	
Correction coefficient	1.9	1.7	1.4	1.0	
Frequency (Hz)	50/60	120	300	1K	≥10K
Correction coefficient	0.7	1.0	1.1	1.3	1.4

Terminal permissible current is limited to 10Arms. (Even if calculated the permissible ripple current with the correction coefficient exceeds 10Arms)  
Please consult us when the ripple voltage exceeds 70Vp-p.

### Product code



Refer to page 118-119 for other terminal shape available on request.

ALUMINUM ELECTROLYTIC CAPACITORS

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

HL Series

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (mΩ) 20°C, 100Hz	Product name	
							200
	470	22×30	0.15	1.37	240	HL2D471MCXS3WPEC	
		25×25	0.15	1.36	240	HL2D471MCYS2WPEC	
	560	22×35	0.15	1.57	200	HL2D561MCXS4WPEC	
		25×30	0.15	1.57	200	HL2D561MCYS3WPEC	
	680	22×40	0.15	1.81	160	HL2D681MCXS5WPEC	
		30×25	0.15	1.75	160	HL2D681MCZS2WPEC	
	820	22×45	0.15	2.06	140	HL2D821MCXS6WPEC	
		25×35	0.15	1.99	140	HL2D821MCYS4WPEC	
	1,000	25×45	0.15	2.37	110	HL2D102MCYS6WPEC	
		30×30	0.15	2.24	110	HL2D102MCZS3WPEC	
		35×25	0.15	1.94	110	HL2D102MCAS2WPEC	
	1,200	25×50	0.15	2.67	100	HL2D122MCYS7WPEC	
		30×35	0.15	2.56	100	HL2D122MCZS4WPEC	
		35×30	0.15	2.23	100	HL2D122MCAS3WPEC	
	1,500	30×45	0.15	3.08	80	HL2D152MCZS6WPEC	
		35×35	0.15	2.61	80	HL2D152MCAS4WPEC	
		30×50	0.15	3.49	70	HL2D182MCZS7WPEC	
	1,800	35×40	0.15	2.97	70	HL2D182MCAS5WPEC	
		35×45	0.15	3.39	50	HL2D222MCAS6WPEC	
	2,700	35×50	0.15	3.86	50	HL2D272MCAS7WPEC	
250	270	22×25	0.15	0.98	360	HL2E271MCXS2WPEC	
	330	22×30	0.15	1.15	290	HL2E331MCXS3WPEC	
		25×25	0.15	1.14	290	HL2E331MCYS2WPEC	
	390	22×35	0.15	1.31	250	HL2E391MCXS4WPEC	
	470	22×40	0.15	1.50	210	HL2E471MCXS5WPEC	
		25×30	0.15	1.43	210	HL2E471MCYS3WPEC	
		30×25	0.15	1.45	210	HL2E471MCZS2WPEC	
	560	22×45	0.15	1.70	180	HL2E561MCXS6WPEC	
		25×35	0.15	1.64	180	HL2E561MCYS4WPEC	
	680	22×50	0.15	1.94	150	HL2E681MCXS7WPEC	
		25×40	0.15	1.88	150	HL2E681MCYS5WPEC	
		30×30	0.15	1.85	150	HL2E681MCZS3WPEC	
		820	35×25	0.15	1.60	150	HL2E681MCAS2WPEC
			25×45	0.15	2.14	120	HL2E821MCYS6WPEC
			30×35	0.15	2.12	120	HL2E821MCZS4WPEC
		1,000	35×30	0.15	1.84	120	HL2E821MCAS3WPEC
			30×40	0.15	2.44	100	HL2E102MCZS5WPEC
		1,200	30×45	0.15	2.76	80	HL2E122MCZS6WPEC
35×35			0.15	2.33	80	HL2E122MCAS4WPEC	
	1,500	35×45	0.15	2.80	70	HL2E152MCAS6WPEC	
	1,800	35×50	0.15	3.16	60	HL2E182MCAS7WPEC	
315	150	22×25	0.20	0.86	850	HL2F151MCXS2WPEC	
	220	22×30	0.20	1.10	580	HL2F221MCXS3WPEC	
		25×25	0.20	1.10	580	HL2F221MCYS2WPEC	
	270	22×35	0.20	1.24	480	HL2F271MCXS4WPEC	
		25×30	0.20	1.25	480	HL2F271MCYS3WPEC	
	330	22×40	0.20	1.40	390	HL2F331MCXS5WPEC	
		25×35	0.20	1.44	390	HL2F331MCYS4WPEC	
		390	30×25	0.20	1.43	390	HL2F331MCZS2WPEC
			22×45	0.20	1.56	330	HL2F391MCXS6WPEC
		470	25×40	0.20	1.60	330	HL2F391MCYS5WPEC
			30×30	0.20	1.56	330	HL2F391MCZS3WPEC
	560	680	25×45	0.20	1.79	280	HL2F471MCYS6WPEC
			35×25	0.20	1.48	280	HL2F471MCAS2WPEC
			25×50	0.20	1.99	230	HL2F561MCYS7WPEC
		820	30×35	0.20	1.93	230	HL2F561MCZS4WPEC
			35×30	0.20	1.70	230	HL2F561MCAS3WPEC
		1,000	30×40	0.20	2.19	190	HL2F681MCZS5WPEC
			35×35	0.20	1.96	190	HL2F681MCAS4WPEC
		1,200	30×50	0.20	2.51	160	HL2F821MCZS7WPEC
			35×40	0.20	2.23	160	HL2F821MCAS5WPEC

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (mΩ) 20°C, 100Hz	Product name
	150	22×25*	0.20	0.87	640	HL2G151MCXS2WPEC
		22×30	0.20	0.92	640	HL2G151MCXS3WPEC
	180	25×25	0.20	0.90	640	HL2G151MCYS2WPEC
		22×30*	0.20	1.01	540	HL2G181MCXS3WPEC
		22×35	0.20	1.05	540	HL2G181MCXS4WPEC
	220	25×25*	0.20	0.99	540	HL2G181MCYS2WPEC
		25×30	0.20	1.05	540	HL2G181MCYS3WPEC
		22×35*	0.20	1.17	440	HL2G221MCXS4WPEC
	270	22×40	0.20	1.22	440	HL2G221MCXS5WPEC
		25×30	0.20	1.16	440	HL2G221MCYS3WPEC
		25×35	0.20	1.21	440	HL2G221MCYS4WPEC
	330	30×25	0.20	1.17	440	HL2G221MCZS2WPEC
		22×40*	0.20	1.35	360	HL2G271MCXS5WPEC
		22×45	0.20	1.40	360	HL2G271MCXS6WPEC
	390	25×35	0.20	1.35	360	HL2G271MCYS4WPEC
		25×40	0.20	1.40	360	HL2G271MCYS5WPEC
		30×25*	0.20	1.28	360	HL2G271MCZS2WPEC
	470	22×45*	0.20	1.54	290	HL2G331MCXS6WPEC
		22×50*	0.20	1.59	290	HL2G331MCXS7WPEC
		25×40	0.20	1.55	290	HL2G331MCYS5WPEC
	560	25×45	0.20	1.61	290	HL2G331MCYS6WPEC
		30×30	0.20	1.49	290	HL2G331MCZS3WPEC
		35×25	0.20	1.52	290	HL2G331MCAS2WPEC
	680	25×45*	0.20	1.74	250	HL2G391MCXS6WPEC
		25×50	0.20	1.80	250	HL2G391MCYS7WPEC
		30×30*	0.20	1.62	250	HL2G391MCZS3WPEC
	820	30×35	0.20	1.70	250	HL2G391MCZS4WPEC
		35×25*	0.20	1.59	250	HL2G391MCAS2WPEC
		35×30	0.20	1.68	250	HL2G391MCAS3WPEC
	1,000	25×50*	0.20	1.98	210	HL2G471MCYS7WPEC
		30×35*	0.20	1.86	210	HL2G471MCZS4WPEC
		30×40	0.20	1.94	210	HL2G471MCZS5WPEC
	1,200	35×30*	0.20	1.84	210	HL2G471MCAS3WPEC
		35×35	0.20	1.92	210	HL2G471MCAS4WPEC
		30×40*	0.20	2.11	180	HL2G561MCZS5WPEC
	1,500	30×45	0.20	2.19	180	HL2G561MCZS6WPEC
		35×35	0.20	2.09	180	HL2G561MCAS4WPEC
		35×40	0.20	2.18	180	HL2G561MCAS5WPEC
	1,800	30×50*	0.20	2.48	150	HL2G681MCZS7WPEC
		35×40*	0.20	2.40	150	HL2G681MCAS5WPEC
		35×45	0.20	2.48	150	HL2G681MCAS6WPEC
	2,700	35×45*	0.20	2.72	120	HL2G821MCAS6WPEC
		35×50	0.20	2.80	120	HL2G821MCAS7WPEC

ALUMINUM ELECTROLYTIC CAPACITORS

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Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (mΩ) 20°C, 100Hz	Product name
420	100	22×25	0.20	0.71	1,020	HL420V101MCXS2WPEC
		22×25*	0.20	0.77	850	HL420V121MCXS2WPEC
	120	22×30	0.20	0.82	850	HL420V121MCXS3WPEC
		22×30	0.20	0.92	680	HL420V151MCXS3WPEC
	150	22×35	0.20	0.96	680	HL420V151MCXS4WPEC
		25×25	0.20	0.90	680	HL420V151MCYS2WPEC
		22×35	0.20	1.05	570	HL420V181MCXS4WPEC
	180	22×40	0.20	1.10	570	HL420V181MCXS5WPEC
		25×25*	0.20	0.99	570	HL420V181MCYS2WPEC
		25×30	0.20	1.05	570	HL420V181MCYS3WPEC
		22×40	0.20	1.22	470	HL420V221MCXS5WPEC
	220	22×45	0.20	1.26	470	HL420V221MCXS6WPEC
		25×30*	0.20	1.16	470	HL420V221MCYS3WPEC
		25×35	0.20	1.21	470	HL420V221MCYS4WPEC
		30×25	0.20	1.15	470	HL420V221MCZS2WPEC
	270	22×45*	0.20	1.40	380	HL420V271MCXS6WPEC
		22×50	0.20	1.44	380	HL420V271MCXS7WPEC
		25×35*	0.20	1.35	380	HL420V271MCYS4WPEC
		25×40	0.20	1.40	380	HL420V271MCYS5WPEC
		30×25*	0.20	1.28	380	HL420V271MCZS2WPEC
		30×30	0.20	1.35	380	HL420V271MCZS3WPEC
	330	35×25	0.20	1.38	380	HL420V271MCAS2WPEC
		22×50*	0.20	1.59	310	HL420V331MCXS7WPEC
		25×40*	0.20	1.55	310	HL420V331MCYS5WPEC
		25×45	0.20	1.61	310	HL420V331MCYS6WPEC
		30×30*	0.20	1.49	310	HL420V331MCZS3WPEC
		30×35	0.20	1.56	310	HL420V331MCZS4WPEC
	390	35×25*	0.20	1.46	310	HL420V331MCAS2WPEC
		25×45*	0.20	1.74	270	HL420V391MCYS6WPEC
		25×50	0.20	1.80	270	HL420V391MCYS7WPEC
		30×35*	0.20	1.70	270	HL420V391MCZS4WPEC
		30×40	0.20	1.76	270	HL420V391MCZS5WPEC
	470	35×30	0.20	1.67	270	HL420V391MCAS3WPEC
		25×50*	0.20	1.98	220	HL420V471MCYS7WPEC
		30×40*	0.20	1.94	220	HL420V471MCZS5WPEC
		30×45	0.20	2.00	220	HL420V471MCZS6WPEC
		35×30*	0.20	1.84	220	HL420V471MCAS3WPEC
	560	35×35	0.20	1.92	220	HL420V471MCAS4WPEC
		30×45*	0.20	2.19	190	HL420V561MCZS6WPEC
		30×50	0.20	2.25	190	HL420V561MCZS7WPEC
		35×35*	0.20	2.09	190	HL420V561MCAS4WPEC
	680	35×40	0.20	2.18	190	HL420V561MCAS5WPEC
		30×50*	0.20	2.48	150	HL420V681MCZS7WPEC
		35×40*	0.20	2.40	150	HL420V681MCAS5WPEC
	820	35×45	0.20	2.48	150	HL420V681MCAS6WPEC
		35×45*	0.20	2.72	130	HL420V821MCAS6WPEC

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20°C, 120Hz	Ripple current (Arms) 105°C, 120Hz	ESR(typ.) (mΩ) 20°C, 100Hz	Product name
450	82	22×25	0.20	0.64	1,250	HL2W820MCXS2WPEC
	100	22×25*	0.20	0.71	1,020	HL2W101MCXS2WPEC
		22×30	0.20	0.82	850	HL2W121MCXS3WPEC
	120	25×25	0.20	0.81	850	HL2W121MCYS2WPEC
		22×30*	0.20	0.92	680	HL2W151MCXS3WPEC
	150	22×35	0.20	0.96	680	HL2W151MCXS4WPEC
		25×25*	0.20	0.90	680	HL2W151MCYS2WPEC
		25×30	0.20	0.96	680	HL2W151MCYS3WPEC
	180	22×35*	0.20	1.05	570	HL2W181MCXS4WPEC
		22×40	0.20	1.10	570	HL2W181MCXS5WPEC
		25×30*	0.20	1.05	570	HL2W181MCYS3WPEC
		25×35	0.20	1.10	570	HL2W181MCYS4WPEC
	220	30×25	0.20	1.06	570	HL2W181MCZS2WPEC
		22×40*	0.20	1.22	470	HL2W221MCXS5WPEC
		22×45*	0.20	1.26	470	HL2W221MCXS6WPEC
		25×35*	0.20	1.21	470	HL2W221MCYS4WPEC
	270	25×40	0.20	1.27	470	HL2W221MCYS5WPEC
		30×25*	0.20	1.15	470	HL2W221MCZS2WPEC
		30×30	0.20	1.22	470	HL2W221MCZS3WPEC
		35×25	0.20	1.24	470	HL2W221MCAS2WPEC
		22×50*	0.20	1.44	380	HL2W271MCXS7WPEC
	330	25×40*	0.20	1.40	380	HL2W271MCYS5WPEC
		25×45	0.20	1.45	380	HL2W271MCYS6WPEC
		30×30*	0.20	1.35	380	HL2W271MCZS3WPEC
		30×35	0.20	1.41	380	HL2W271MCZS4WPEC
	390	35×25*	0.20	1.32	380	HL2W271MCAS2WPEC
		25×45*	0.20	1.61	310	HL2W331MCYS6WPEC
		25×50	0.20	1.66	310	HL2W331MCYS7WPEC
		30×35*	0.20	1.56	310	HL2W331MCZS4WPEC
		30×40	0.20	1.62	310	HL2W331MCZS5WPEC
	470	35×30	0.20	1.54	310	HL2W331MCAS3WPEC
		30×40*	0.20	1.76	270	HL2W391MCZS5WPEC
		30×45	0.20	1.82	270	HL2W391MCZS6WPEC
		35×30*	0.20	1.67	270	HL2W391MCAS3WPEC
	560	35×35	0.20	1.75	270	HL2W391MCAS4WPEC
		30×45*	0.20	2.00	220	HL2W471MCZS6WPEC
		30×50	0.20	2.07	220	HL2W471MCZS7WPEC
		35×35*	0.20	1.92	220	HL2W471MCAS4WPEC
	680	35×40	0.20	1.99	220	HL2W471MCAS5WPEC
		30×50*	0.20	2.25	190	HL2W561MCZS7WPEC
		35×40*	0.20	2.18	190	HL2W561MCAS5WPEC
	820	35×45	0.20	2.25	190	HL2W561MCAS6WPEC
		35×45*	0.20	2.48	150	HL2W681MCAS6WPEC
	820	35×50	0.20	2.55	150	HL2W681MCAS7WPEC

ALUMINUM ELECTROLYTIC CAPACITORS

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20°C, 120Hz	Ripple current (Arms)		ESR(typ.) (mΩ) 20°C, 100Hz	Product name
				105°C, 120Hz	105°C, 120Hz		
500	56	22×25	0.20	0.40	1,710	HL2H560MCXS2WPEC	
	68	22×25*	0.20	0.45	1,410	HL2H680MCXS2WPEC	
	82	22×30	0.20	0.53	1,170	HL2H820MCXS3WPEC	
		25×25	0.20	0.54	1,170	HL2H820MCYS2WPEC	
	100	22×35	0.20	0.62	960	HL2H101MCXS4WPEC	
		25×30	0.20	0.64	960	HL2H101MCYS3WPEC	
	120	22×40	0.20	0.72	800	HL2H121MCXS5WPEC	
		25×30*	0.20	0.71	800	HL2H121MCYS3WPEC	
		25×35	0.20	0.74	800	HL2H121MCYS4WPEC	
		30×25	0.20	0.75	800	HL2H121MCZS2WPEC	
	150	22×45*	0.20	0.85	640	HL2H151MCXS6WPEC	
		22×50	0.20	0.88	640	HL2H151MCXS7WPEC	
		25×35*	0.20	0.84	640	HL2H151MCYS4WPEC	
		25×40	0.20	0.88	640	HL2H151MCYS5WPEC	
		30×30	0.20	0.90	640	HL2H151MCZS3WPEC	
	180	35×25	0.20	0.94	640	HL2H151MCAS2WPEC	
		22×50*	0.20	0.97	540	HL2H181MCXS7WPEC	
		25×40*	0.20	0.98	540	HL2H181MCYS5WPEC	
		25×45	0.20	1.01	540	HL2H181MCYS6WPEC	
		30×30*	0.20	0.99	540	HL2H181MCZS3WPEC	
	220	30×35	0.20	1.04	540	HL2H181MCZS4WPEC	
		35×25*	0.20	1.04	540	HL2H181MCAS2WPEC	
		25×50	0.20	1.17	440	HL2H221MCYS7WPEC	
		30×35*	0.20	1.17	440	HL2H221MCZS4WPEC	
	270	30×40	0.20	1.21	440	HL2H221MCZS5WPEC	
		35×30	0.20	1.22	440	HL2H221MCAS3WPEC	
		30×40*	0.20	1.36	360	HL2H271MCZS5WPEC	
	330	30×45	0.20	1.41	360	HL2H271MCZS6WPEC	
		35×35	0.20	1.44	360	HL2H271MCAS4WPEC	
		30×50	0.20	1.63	290	HL2H331MCZS7WPEC	
	390	35×40	0.20	1.67	290	HL2H331MCAS5WPEC	
		30×55*	0.20	1.84	250	HL2H391MCZS8WPEC	
		30×60	0.20	1.89	250	HL2H391MCZS9WPEC	
	470	35×45	0.20	1.90	250	HL2H391MCAS6WPEC	
		35×50*	0.20	2.18	210	HL2H471MCAS7WPEC	
		35×55	0.20	2.23	210	HL2H471MCAS8WPEC	
	560	35×60*	0.20	2.53	180	HL2H561MCAS9WPEC	

ALUMINUM ELECTROLYTIC CAPACITORS

### Life time graph

Useful life depending on ambient temperature  $T_a$  and ripple current operating conditions  $I$  versus rated ripple current at 105°C, 120Hz.

