

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

## HU3 Series

**Useful of 4,000 hours at 105°C (Warranty of 2,000 hours at 105°C)**

- Conform RoHS

### Features

- The size is reduced by 20 to 30% of conventional HUR and HVR through development of etched foil technology.



### Product Specifications

Items	Specifications
Temperature range	-40°C ~ +105°C
Rated voltage	16 ~ 500V.DC
Capacitance tolerance	±20% (20°C,120Hz)
Leakage current	0.02CV ( $\mu$ A) or 3mA, whichever is smaller or less [C = nominal capacitance ( $\mu$ F), 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)
High temp. Load life test	After 105°C, 2000h, rated voltage with specified ripple current application Capacitance variation : Initial value ±15% Dissipation factor : 175% of less of specified initial value Leakage current : Not greater than the specified initial value
Others	JIS C 5101-4.

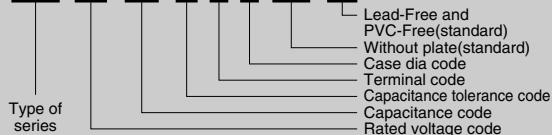
### Ripple current correction coefficient

Temperature (°C)	60	70	85	105	
Correction coefficient	2.2	2.0	1.8	1.0	
Frequency (Hz)	50/60	120	300	1K	≥10K
Correction coefficient	16~100V	0.7	1.0	1.1	1.2
160~450V	0.7	1.0	1.1	1.3	1.4

A continuous load should be avoided over 10 A at the terminal in accordance with the permissible current.

Product code : (Example) HU3 Series 16V 10,000 $\mu$ F ±20%

**HU3 1C 103 M C X WP EC**



Case dia code	øD	Code
22	X	
25	Y	
30	Z	
35	A	

Refer to page (85) for other terminal shape available on request

### Standard Products Table

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance ( $\mu$ F)	Case size øDXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
16 1C (20)	4700	22×25	0.50	0.93	67	HU31C472MCXWPEC
	6800	22×35	0.50	1.27	46	HU31C682MCXWPEC
		25×30	0.50	1.26	46	HU31C682MCYWPEC
	10000	22×45	0.50	1.43	38	HU31C103MCXWPEC
		25×35	0.50	1.36	38	HU31C103MCYWPEC
		30×25	0.50	1.30	38	HU31C103MCZWPEC
	15000	25×45	0.50	1.84	25	HU31C153MCYWPEC
		30×35	0.50	1.77	25	HU31C153MCZWPEC
		35×30	0.50	1.78	25	HU31C153MCAWPEC
	22000	30×45	0.50	2.36	20	HU31C223MCZWPEC
		35×35	0.50	2.27	20	HU31C223MCAWPEC
	33000	35×50	0.50	2.95	15	HU31C333MCAWPEC
25 1E (32)	3300	22×25	0.40	0.87	116	HU31E332MCXWPEC
	4700	22×30	0.40	1.00	81	HU31E472MCXWPEC
		25×25	0.40	0.98	81	HU31E472MCYWPEC
	6800	22×35	0.40	1.27	65	HU31E682MCXWPEC
		25×30	0.40	1.27	65	HU31E682MCYWPEC
		30×25	0.40	1.27	65	HU31E682MCZWPEC
	10000	22×45	0.40	1.43	45	HU31E103MCXWPEC
		25×35	0.40	1.38	45	HU31E103MCYWPEC
		30×30	0.40	1.38	45	HU31E103MCZWPEC
	15000	25×45	0.40	1.84	30	HU31E153MCYWPEC
		30×35	0.40	1.78	30	HU31E153MCZWPEC
	22000	30×45	0.40	2.36	20	HU31E223MCZWPEC
		35×40	0.40	2.38	20	HU31E223MCAWPEC
	33000	35×50	0.40	2.95	15	HU31E333MCAWPEC

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance ( $\mu$ F)	Case size øDXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz (mΩ)	ESR(typ.) 20°C,100Hz (mΩ)	Product name
35 1V (44)	2200	22×25	0.35	0.71	108	HU31V222MCXWPEC
	3300	22×30	0.35	0.93	72	HU31V332MCXWPEC
		25×25	0.35	0.92	72	HU31V332MCYWPEC
	4700	22×35	0.35	1.05	61	HU31V472MCXWPEC
		25×30	0.35	1.05	61	HU31V472MCYWPEC
		30×25	0.35	1.05	61	HU31V472MCZWPEC
	6800	22×50	0.35	1.46	55	HU31V682MCXWPEC
		25×40	0.35	1.40	55	HU31V682MCYWPEC
		30×30	0.35	1.34	55	HU31V682MCZWPEC
	10000	25×50	0.35	1.34	55	HU31V682MCAWPEC
		30×35	0.35	1.46	35	HU31V103MCZWPEC
	15000	35×30	0.35	1.46	35	HU31V103MCAWPEC
		30×50	0.35	2.03	25	HU31V153MCZWPEC
	35×40	0.35	1.96	25	HU31V153MCAWPEC	



# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance (μF)	Case size øDXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name	Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance (μF)	Case size øDXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
200 2D (250)	220	22×25	0.15	0.92	485	HU32D221MCXWPEC	350 2V (400)	82	22×25	0.15	0.47	1126	HU32V820MCXWPEC
	270	22×25	0.15	1.03	395	HU32D271MCXWPEC		100	22×30	0.15	0.56	924	HU32V101MCXWPEC
	330	22×30 25×25	0.15	1.21 1.20	325	HU32D331MCXWPEC HU32D331MCYWPEC		120	25×25	0.15	0.55 0.61	924 770	HU32V101MCYWPEC HU32V121MCXWPEC
	390	22×35 25×25	0.15	1.39 1.31	275	HU32D391MCXWPEC HU32D391MCYWPEC		150	22×35 25×30	0.15	0.72	615	HU32V151MCYWPEC
	470	22×40 25×30 30×25	0.15	1.62 1.52 1.54	230	HU32D471MCXWPEC HU32D471MCZWPEC HU32D471MCZWPEC		180	30×25 22×40	0.15	0.72 0.83	615 520	HU32V151MCZWPEC HU32V181MCXWPEC
	560	22×45 25×35 30×30	0.15	1.85 1.75 1.78	190	HU32D561MCXWPEC HU32D561MCYWPEC HU32D561MCZWPEC		220	30×30 25×40	0.15	0.83 0.96	520 450	HU32V181MCZWPEC HU32V221MCYWPPEC
	680	22×45 25×40 30×30 35×25	0.15	2.04 2.04 1.96 1.96	160	HU32D681MCXWPEC HU32D681MCYWPEC HU32D681MCZWPEC HU32D681MCAWPEC		270	35×25 25×45	0.15	0.93 1.12	450 366	HU32V221MCZWPEC HU32V271MCYWPEC
	820	25×45 30×35 35×30	0.15	2.34 2.27 2.27	130	HU32D821MCYWPEC HU32D821MCZWPEC HU32D821MCAWPEC		330	30×40 35×30	0.15	1.09 1.29	366 299	HU32V271MCZWPEC HU32V331MCYWPEC
	1000	25×50	0.15	2.70	110	HU32D102MCYWPEC		390	30×45 35×35	0.15	1.26 1.43	299 253	HU32V331MCZWPEC HU32V391MCAWPEC
	1200	30×40 35×35	0.15	2.63 2.51	110	HU32D102MCZWPEC		470	35×40	0.15	1.20 1.58	253 210	HU32V391MCAWPEC
	1500	35×45	0.15	3.38	75	HU32D152MCAWPEC		560	35×45	0.15	1.79	181	HU32V561MCAWPEC
	1800	35×50	0.15	4.01	70	HU32D182MCAWPEC		68	22×25	0.15	0.52	1300	HU32G680MCXWPEC
250 2E (300)	220	22×30 25×25	0.15	1.00 0.98	445	HU32E221MCXWPEC HU32E221MCYWPEC	400 2G (450)	82	22×30 25×25	0.15	0.60	1126	HU32G820MCXWPEC
	270	22×35 25×25	0.15	1.16 1.08	360	HU32E221MCYWPPEC HU32E271MCYWPEC		100	22×30 25×25	0.15	0.60 0.67	1126 924	HU32G820MCYWPEC HU32G101MCXWPEC
	330	22×35 25×30 30×25	0.15	1.28 1.27 1.28	295	HU32E331MCXWPEC HU32E331MCYWPEC HU32E331MCZWPEC		120	22×35 25×30 30×25	0.15	0.78 0.77 0.78	770 770 770	HU32G101MCYWPEC HU32G121MCXWPEC HU32G121MCZWPEC
	390	22×40 25×35 30×25	0.15	1.48 1.46 1.39	250	HU32E391MCXWPEC HU32E391MCYWPEC HU32E391MCZWPEC		150	22×40 25×35 30×30	0.15	0.91 0.91 0.92	615 615 615	HU32G151MCXWPEC HU32G151MCYWPEC HU32G151MCZWPEC
	470	22×50 25×40 30×30 35×25	0.15	1.76 1.69 1.63 1.62	210	HU32E471MCXWPEC HU32E471MCYWPEC HU32E471MCZWPEC HU32E471MCAWPEC		180	22×45 25×40 30×30 35×25	0.15	1.04 1.04 1.01 1.01	520 520 520 520	HU32G181MCXWPEC HU32G181MCYWPEC HU32G181MCZWPEC HU32G181MCAWPEC
	560	25×45 30×35 35×25	0.15	1.93 1.87 1.78	175	HU32E561MCYWPEC HU32E561MCZWPEC HU32E561MCAWPEC		220	22×45 30×35 35×30	0.15	1.21 1.18 1.18	450 450 450	HU32G221MCYWPEC HU32G221MCZWPEC HU32G221MCAWPEC
	680	25×50 30×35 35×30	0.15	2.22 2.06 2.06	145	HU32E681MCYWPEC HU32E681MCZWPEC HU32E681MCAWPEC		270	25×50 30×40 35×30	0.15	1.40 1.37 1.31	366 366 366	HU32G221MCZWPEC HU32G271MCYWPPEC HU32G271MCZWPEC
	820	30×45 35×35	0.15	2.48 2.41	120	HU32E821MCZWPEC		330	30×45 35×35	0.15	1.57 1.52	299 299	HU32G331MCZWPEC HU32G331MCAWPEC
	1000	35×40	0.15	2.76	100	HU32E102MCAWPEC		390	35×40	0.15	1.73	253	HU32G391MCAWPEC
	1200	35×45	0.15	3.14	85	HU32E122MCAWPEC		470	35×45	0.15	1.97	210	HU32G471MCAWPEC
	1500	35×50	0.15	3.66	65	HU32E152MCAWPEC		560	35×50	0.15	2.23	181	HU32G561MCAWPEC

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance ( $\mu$ F)	Case size $\phi$ DXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
420 420V (470)	47	22×25	0.15	0.38	1880	HU3420V470MCXWPEC
	68	22×30	0.15	0.50	1499	HU3420V680MCXWPEC
	82	22×30	0.15	0.54	1242	HU3420V820MCXWPEC
		25×25	0.15	0.54	1242	HU3420V820MCYWPEC
	100	22×35	0.15	0.63	1019	HU3420V101MCXWPEC
		25×30	0.15	0.63	1019	HU3420V101MCYWPEC
	120	22×40	0.15	0.73	850	HU3420V121MCXWPEC
		25×30	0.15	0.70	850	HU3420V121MCYWPEC
		30×25	0.15	0.70	850	HU3420V121MCZWPEC
	150	22×45	0.15	0.86	679	HU3420V151MCXWPEC
		25×35	0.15	0.82	679	HU3420V151MCYWPEC
		30×30	0.15	0.83	679	HU3420V151MCZWPEC
	180	25×40	0.15	0.94	566	HU3420V181MCYWPEC
		30×30	0.15	0.91	566	HU3420V181MCZWPEC
		35×25	0.15	0.90	566	HU3420V181MCAWPEC
	220	25×50	0.15	1.13	463	HU3420V221MCYWPEC
		30×35	0.15	1.05	463	HU3420V221MCZWPEC
		35×30	0.15	1.05	463	HU3420V221MCAWPEC
	270	30×40	0.15	1.22	377	HU3420V271MCZWPEC
		35×35	0.15	1.23	377	HU3420V271MCAWPEC
	330	30×50	0.15	1.49	309	HU3420V331MCZWPEC
		35×40	0.15	1.41	309	HU3420V331MCAWPEC
	390	35×45	0.15	1.61	261	HU3420V391MCAWPEC
	470	35×50	0.15	1.85	261	HU3420V471MCAWPEC

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance ( $\mu$ F)	Case size $\phi$ DXL(mm)	$\tan\delta$ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
450 2W (500)	47	22×25	0.15	0.42	1880	HU32W470MCXWPEC
	68	22×30	0.15	0.55	1499	HU32W680MCXWPEC
	82	25×25	0.15	0.54	1499	HU32W680MCYWPEC
		22×35	0.15	0.64	1242	HU32W820MCXWPEC
	100	25×30	0.15	0.64	1242	HU32W820MCYWPEC
		22×40	0.15	0.74	1019	HU32W101MCXWPEC
		25×35	0.15	0.74	1019	HU32W101MCYWPEC
		30×25	0.15	0.71	1019	HU32W101MCZWPEC
		22×45	0.15	0.85	850	HU32W121MCXWPEC
		25×35	0.15	0.80	850	HU32W121MCYWPEC
		30×30	0.15	0.82	850	HU32W121MCZWPEC
		35×25	0.15	0.82	850	HU32W121MCAWPEC
	150	25×45	0.15	1.00	679	HU32W151MCYWPEC
		30×35	0.15	0.96	679	HU32W151MCZWPEC
		35×30	0.15	0.96	679	HU32W151MCAWPEC
	180	25×50	0.15	1.14	566	HU32W181MCYWPEC
		30×35	0.15	1.06	566	HU32W181MCZWPEC
		35×30	0.15	1.06	566	HU32W181MCAWPEC
	220	30×40	0.15	1.22	463	HU32W221MCZWPEC
		35×35	0.15	1.24	463	HU32W221MCAWPEC
	270	30×50	0.15	1.48	377	HU32W271MCZWPEC
		35×40	0.15	1.43	377	HU32W271MCAWPEC
	330	35×45	0.15	1.64	309	HU32W331MCAWPEC
	390	35×50	0.15	1.86	261	HU32W391MCAWPEC
	39	22×30	0.20	0.35	2449	HU32H390MCXWPEC
	47	22×35	0.20	0.41	2032	HU32H470MCXWPEC
	56	22×40	0.20	0.47	1705	HU32H560MCXWPEC
	68	22×45	0.20	0.54	1404	HU32H680MCXWPEC
	82	22×50	0.20	0.62	1165	HU32H820MCXWPEC
	100	25×45	0.20	0.67	955	HU32H101MCYWPEC
	120	25×50	0.20	0.77	796	HU32H121MCYWPEC
		35×30	0.20	0.72	796	HU32H121MCAWPEC
	150	30×40	0.20	0.85	637	HU32H151MCZWPEC
	180	30×50	0.20	1.01	531	HU32H181MCZWPEC
	220	35×45	0.20	1.12	434	HU32H221MCAWPEC
	270	35×50	0.20	1.29	354	HU32H271MCAWPEC

## Life time graph

Useful life depending on ambient temperature Ta and ripple current operating conditions Ir versus rated ripple current at 105°C,120Hz

