

# SNAP MOUNT TYPE ALUMINUM ELECTROLYTIC CAPACITORS

## XL1 Series

Useful of 15,000 hours at 105°C (Warranty of 10,000 hours at 105°C)

• Conform RoHS

### Features

- Warranty of 10,000 hours at 105°C through improvement of electrolyte liquid and etched foil technology



### Product Specifications

Items	Specifications
Temperature range	-40°C ~ +105°C
Rated voltage	200 ~ 450V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	0.02CV (μA) or 3mA, whichever is smaller or less [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)
High-temperature load	After the rated voltage with specified ripple current is applied at 105°C for 10,000 hours: Capacitance tolerance: ±15% or less of the initial value Dissipation factor: 200% or less of the specified initial value Leakage current: Specified initial value or less
Others	JIS C 5101-4.

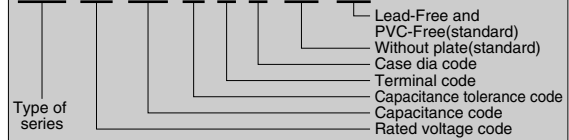
### Ripple current correction coefficient

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	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) XL1 series 450V 100μF±20%

**XL1 2W 101 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 (μF)	Case size øDXL(mm)	tanδ 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	0.76	398	XL12D221MCXWPEC
	270	22×30	0.15	0.90	325	XL12D271MCXWPEC
		25×25	0.15	0.86	325	XL12D271MICYWPEC
	330	22×35	0.15	1.05	265	XL12D331MCXWPEC
		25×30	0.15	1.01	265	XL12D331MICYWPEC
	390	22×35	0.15	1.15	225	XL12D391MCXWPEC
		25×30	0.15	1.10	225	XL12D391MICYWPEC
		30×25	0.15	1.13	225	XL12D391MCZWPEC
	470	22×45	0.15	1.40	187	XL12D471MCXWPEC
		25×35	0.15	1.29	187	XL12D471MICYWPEC
		30×25	0.15	1.24	187	XL12D471MCZWPEC
	560	22×50	0.15	1.59	156	XL12D561MCXWPEC
		25×40	0.15	1.48	156	XL12D561MICYWPEC
		30×30	0.15	1.44	156	XL12D561MCZWPEC
	680	25×45	0.15	1.70	129	XL12D681MICYWPEC
		30×35	0.15	1.67	129	XL12D681MCZWPEC
		35×30	0.15	1.67	129	XL12D681MCAWPEC
	820	25×50	0.15	1.94	107	XL12D821MICYWPEC
		30×40	0.15	1.92	107	XL12D821MCZWPEC
		35×30	0.15	1.83	107	XL12D821MCAWPEC
1000	30×45	0.15	2.22	88	XL12D102MCZWPEC	
	35×35	0.15	2.15	88	XL12D102MCAWPEC	
1200	30×50	0.15	2.53	73	XL12D122MCZWPEC	
	35×40	0.15	2.44	73	XL12D122MCAWPEC	
1500	35×45	0.15	2.85	59	XL12D152MCAWPEC	

Rated Voltage Code (Surge Voltage) (V.DC)	Capacitance (μF)	Case size øDXL(mm)	tanδ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
250 2E (300)	150	22×25	0.15	0.62	584	XL12E151MCXWPEC
	180	22×30	0.15	0.73	487	XL12E181MCXWPEC
		25×25	0.15	0.70	487	XL12E181MICYWPEC
	220	22×35	0.15	0.86	398	XL12E221MCXWPEC
		25×30	0.15	0.83	398	XL12E221MICYWPEC
	270	22×40	0.15	1.00	325	XL12E271MCXWPEC
		25×30	0.15	0.92	325	XL12E271MICYWPEC
	330	22×45	0.15	1.16	265	XL12E331MCXWPEC
		25×35	0.15	1.07	265	XL12E331MICYWPEC
		30×25	0.15	1.03	265	XL12E331MCZWPEC
	390	22×50	0.15	1.32	225	XL12E391MCXWPEC
		25×40	0.15	1.23	225	XL12E391MICYWPEC
		30×30	0.15	1.20	225	XL12E391MCZWPEC
	470	25×45	0.15	1.42	187	XL12E471MICYWPEC
		30×35	0.15	1.39	187	XL12E471MCZWPEC
		35×30	0.15	1.40	187	XL12E471MCAWPEC
	560	25×50	0.15	1.62	156	XL12E561MICYWPEC
		30×40	0.15	1.58	156	XL12E561MCZWPEC
		35×35	0.15	1.60	156	XL12E561MCAWPEC
	680	30×45	0.15	1.83	129	XL12E681MCZWPEC
35×40		0.15	1.85	129	XL12E681MCAWPEC	
820	30×50	0.15	2.09	107	XL12E821MCZWPEC	
	35×45	0.15	2.11	107	XL12E821MCAWPEC	
1000	35×50	0.15	2.43	88	XL12E102MCAWPEC	

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400 2G (450)	56	22×25	0.25	0.37	1650	XL12G560MCXWPEC
	68	22×30	0.25	0.44	1300	XL12G680MCXWPEC
	82	22×35	0.25	0.51	1126	XL12G820MCXWPEC
		25×25	0.25	0.47	1126	XL12G820MCYWPEC
	100	22×40	0.25	0.60	924	XL12G101MCXWPEC
		25×30	0.25	0.55	924	XL12G101MCYWPEC
	120	22×45	0.25	0.70	770	XL12G121MCXWPEC
		25×35	0.25	0.64	770	XL12G121MCYWPEC
		30×25	0.25	0.62	770	XL12G121MCZWPEC
	150	22×50	0.25	0.82	615	XL12G151MCXWPEC
		25×40	0.25	0.76	615	XL12G151MCYWPEC
		30×30	0.25	0.74	615	XL12G151MCZWPEC
		35×25	0.25	0.75	615	XL12G151MCAWPEC
	180	25×45	0.25	0.87	520	XL12G181MCYWPEC
		30×35	0.25	0.85	520	XL12G181MCZWPEC
		35×30	0.25	0.86	520	XL12G181MCAWPEC
	220	25×50	0.25	1.00	434	XL12G221MCYWPEC
		30×40	0.25	0.99	434	XL12G221MCZWPEC
		35×30	0.25	0.94	434	XL12G221MCAWPEC
	270	30×45	0.25	1.15	354	XL12G271MCZWPEC
35×35		0.25	1.11	354	XL12G271MCAWPEC	
330	30×50	0.25	1.32	290	XL12G331MCZWPEC	
	35×40	0.25	1.28	290	XL12G331MCAWPEC	
390	35×45	0.25	1.45	245	XL12G391MCAWPEC	
470	35×50	0.25	1.66	203	XL12G471MCAWPEC	

Rated Voltage Code (Surge Voltage) (V. DC)	Capacitance (μF)	Case size øDXL (mm)	tanδ 20°C,120Hz	Ripple current (Arms) 105°C,120Hz	ESR(typ.) 20°C,100Hz (mΩ)	Product name
450 2W (500)	39	22×25	0.25	0.32	2409	XL12W390MCXWPEC
	47	22×30	0.25	0.38	1999	XL12W470MCXWPEC
		25×25	0.25	0.36	1999	XL12W470MCYWPEC
	56	22×35	0.25	0.43	1678	XL12W560MCXWPEC
		25×30	0.25	0.43	1678	XL12W560MCYWPEC
	68	22×40	0.25	0.50	1382	XL12W680MCXWPEC
		25×30	0.25	0.46	1382	XL12W680MCYWPEC
	82	22×40	0.25	0.55	1146	XL12W820MCXWPEC
		25×35	0.25	0.54	1146	XL12W820MCYWPEC
		30×25	0.25	0.51	1146	XL12W820MCZWPEC
	100	22×50	0.25	0.67	939	XL12W101MCXWPEC
		25×40	0.25	0.62	939	XL12W101MCYWPEC
		30×30	0.25	0.60	939	XL12W101MCZWPEC
		25×45	0.25	0.72	783	XL12W121MCYWPEC
	120	30×35	0.25	0.69	783	XL12W121MCZWPEC
		35×30	0.25	0.70	783	XL12W121MCAWPEC
		25×50	0.25	0.83	626	XL12W151MCYWPEC
	150	30×40	0.25	0.81	626	XL12W151MCZWPEC
		35×30	0.25	0.78	626	XL12W151MCAWPEC
		30×45	0.25	0.93	522	XL12W181MCZWPEC
180	35×35	0.25	0.91	522	XL12W181MCAWPEC	
	30×50	0.25	1.07	434	XL12W221MCZWPEC	
220	35×40	0.25	1.05	434	XL12W221MCAWPEC	
	270	35×45	0.25	1.21	354	XL12W271MCAWPEC

## Life time graph

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

