XL1 Series

Useful of 15,000 hours at 105°C

Long Life

• Conform RoHS

Features

• Useful of 15,000 hours at 105℃ through improvement of electrolyte liquid and etched foil technology.

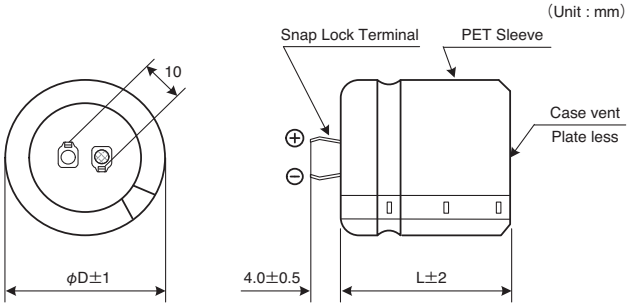
YL P.140 → Long-life XL1

Product Specifications

Items	Specifications
Temperature range	−40℃ ～ +105℃
Rated voltage	200 ～ 450V.DC
Capacitance tolerance	±20% (20℃, 120Hz)
Leakage current	0.02CV (μA) or 3mA, whichever is smaller or less (20℃, after 5 minutes) [C = nominal capacitance (μF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20℃, 120Hz)
Permissible ripple current	As specified in the standard product table. (105℃, 120Hz)
Endurance	After the rated voltage with specified ripple current is applied at 105℃ for 10,000 hours : Capacitance change : Within ±15% 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℃ after storage of 500 hours at 105℃ 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

(Unit : mm)



Ripple current correction coefficient

Temperature (℃)	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

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

(Example) XL1 series 450V 100μF±20%

XL1 2W 101 M C X S5 WP EC

- XL1 — Type of series
- 2W — Rated voltage code
- 101 — Capacitance code
- M — Capacitance tolerance code
- C — Terminal code
- X — Case dia code
- S5 — Case height code
- WP — Plate code
- EC — Environmental code

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

XL1 Series

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20℃, 120Hz	Ripple current (Arms) 105℃, 120Hz	ESR(typ.) (mΩ) 20℃, 100Hz	Product name
200	270	22×25	0.15	0.86	325	XL12D271MCXS2WPEC
	330	22×30	0.15	1.03	265	XL12D331MCXS3WPEC
		25×25	0.15	0.97	265	XL12D331MCYS2WPEC
	390	22×35	0.15	1.19	225	XL12D391MCXS4WPEC
	470	22×40	0.15	1.39	187	XL12D471MCXS5WPEC
		25×30	0.15	1.24	187	XL12D471MCYS3WPEC
	560	22×45	0.15	1.60	156	XL12D561MCXS6WPEC
		25×35	0.15	1.45	156	XL12D561MCYS4WPEC
		30×25	0.15	1.35	156	XL12D561MCZS2WPEC
	680	22×50	0.15	1.84	129	XL12D681MCXS7WPEC
		25×40	0.15	1.69	129	XL12D681MCYS5WPEC
		30×30	0.15	1.60	129	XL12D681MCZS3WPEC
		35×25	0.15	1.56	129	XL12D681MCAS2WPEC
	820	25×45	0.15	1.95	107	XL12D821MCYS6WPEC
		30×35	0.15	1.87	107	XL12D821MCZS4WPEC
		35×30	0.15	1.83	107	XL12D821MCAS3WPEC
	1,000	30×40	0.15	2.18	88	XL12D102MCZS5WPEC
		35×35	0.15	2.15	88	XL12D102MCAS4WPEC
	1,200	30×45	0.15	2.51	73	XL12D122MCZS6WPEC
		35×40	0.15	2.48	73	XL12D122MCAS5WPEC
	1,500	35×45	0.15	2.92	59	XL12D152MCAS6WPEC
	1,800	35×50	0.15	3.34	50	XL12D182MCAS7WPEC
250	180	22×25	0.15	0.70	487	XL12E181MCXS2WPEC
	220	22×30	0.15	0.84	398	XL12E221MCXS3WPEC
		25×25	0.15	0.79	398	XL12E221MCYS2WPEC
	270	22×35	0.15	0.99	325	XL12E271MCXS4WPEC
	330	22×40	0.15	1.16	265	XL12E331MCXS5WPEC
		25×30	0.15	1.04	265	XL12E331MCYS3WPEC
	390	22×45	0.15	1.33	225	XL12E391MCXS6WPEC
		25×35	0.15	1.21	225	XL12E391MCYS4WPEC
		30×25	0.15	1.13	225	XL12E391MCZS2WPEC
	470	22×50	0.15	1.53	187	XL12E471MCXS7WPEC
		25×40	0.15	1.40	187	XL12E471MCYS5WPEC
		30×30	0.15	1.33	187	XL12E471MCZS3WPEC
		35×25	0.15	1.29	187	XL12E471MCAS2WPEC
	560	25×45	0.15	1.61	156	XL12E561MCYS6WPEC
		30×35	0.15	1.55	156	XL12E561MCZS4WPEC
		35×30	0.15	1.51	156	XL12E561MCAS3WPEC
	680	30×40	0.15	1.80	129	XL12E681MCZS5WPEC
		35×35	0.15	1.77	129	XL12E681MCAS4WPEC
	820	30×45	0.15	2.08	107	XL12E821MCZS6WPEC
		35×40	0.15	2.06	107	XL12E821MCAS5WPEC
	1,000	30×50	0.15	2.40	88	XL12E102MCZS7WPEC
		35×45	0.15	2.38	88	XL12E102MCAS6WPEC
	1,200	35×50	0.15	2.73	74	XL12E122MCAS7WPEC

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L (mm)	tanδ 20℃, 120Hz	Ripple current (Arms) 105℃, 120Hz	ESR(typ.) (mΩ) 20℃, 100Hz	Product name
400	68	22×25	0.25	0.43	1,300	XL12G680MCXS2WPEC
	100	22×30	0.25	0.57	924	XL12G101MCXS3WPEC
		25×25	0.25	0.53	924	XL12G101MCYS2WPEC
	120	22×35	0.25	0.66	770	XL12G121MCXS4WPEC
		25×30	0.25	0.63	770	XL12G121MCYS3WPEC
	150	22×40	0.25	0.78	615	XL12G151MCXS5WPEC
		30×25	0.25	0.70	615	XL12G151MCZS2WPEC
	180	22×45	0.25	0.90	520	XL12G181MCXS6WPEC
		25×35	0.25	0.82	520	XL12G181MCYS4WPEC
		35×25	0.25	0.80	520	XL12G181MCAS2WPEC
	220	25×45	0.25	1.01	434	XL12G221MCYS6WPEC
		30×30	0.25	0.91	434	XL12G221MCZS3WPEC
	270	25×50	0.25	1.17	354	XL12G271MCYS7WPEC
		30×35	0.25	1.07	354	XL12G271MCZS4WPEC
		35×30	0.25	1.05	354	XL12G271MCAS3WPEC
	330	30×40	0.25	1.25	290	XL12G331MCZS5WPEC
		35×35	0.25	1.24	290	XL12G331MCAS4WPEC
	390	30×50	0.25	1.50	245	XL12G391MCZS7WPEC
		35×40	0.25	1.42	245	XL12G391MCAS5WPEC
	470	35×45	0.25	1.63	203	XL12G471MCAS6WPEC
	560	35×50	0.25	1.86	171	XL12G561MCAS7WPEC
450	56	22×25	0.25	0.39	1,678	XL12W560MCXS2WPEC
	68	22×30	0.25	0.47	1,382	XL12W680MCXS3WPEC
		25×25	0.25	0.44	1,382	XL12W680MCYS2WPEC
	82	22×35	0.25	0.55	1,146	XL12W820MCXS4WPEC
	100	22×40	0.25	0.64	939	XL12W101MCXS5WPEC
		25×30	0.25	0.57	939	XL12W101MCYS3WPEC
		30×25	0.25	0.57	939	XL12W101MCZS2WPEC
	120	22×45	0.25	0.74	783	XL12W121MCXS6WPEC
		25×35	0.25	0.67	783	XL12W121MCYS4WPEC
		35×25	0.25	0.65	783	XL12W121MCAS2WPEC
	150	25×45	0.25	0.84	626	XL12W151MCYS6WPEC
		30×30	0.25	0.75	626	XL12W151MCZS3WPEC
	180	25×50	0.25	0.96	522	XL12W181MCYS7WPEC
		30×35	0.25	0.88	522	XL12W181MCZS4WPEC
		35×30	0.25	0.86	522	XL12W181MCAS3WPEC
	220	30×40	0.25	1.02	434	XL12W221MCZS5WPEC
		35×35	0.25	1.01	434	XL12W221MCAS4WPEC
	270	30×50	0.25	1.25	354	XL12W271MCZS7WPEC
		35×40	0.25	1.18	354	XL12W271MCAS5WPEC
	330	35×45	0.25	1.37	290	XL12W331MCAS6WPEC
	390	35×50	0.25	1.56	246	XL12W391MCAS7WPEC

Life time graph

Useful life depending on ambient temperature Ta and ripple current operating conditions Ⅰ versus rated ripple current at 105℃, 120Hz