EL series

EL

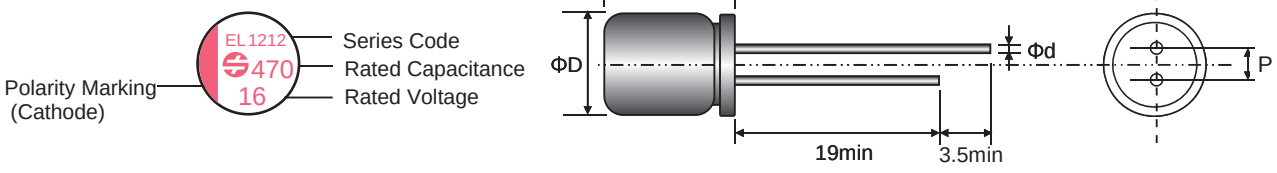
- Super low ESR, High ripple current capability
- Rated voltage : 4~16V
- Endurance : 5,000 hours at 105℃
- Applications : Servers,LCD-TV power,Inverter etc.
- RoHS Compliance.

SPECIFICATIONS

Items	Conditions	Characteristics
Category Temperature Range	—	-55 to +105℃
Rated Voltage Range	—	4 ~ 16V
Capacitance Tolerance	at 20℃, 120 Hz	±20% (M)
Surge Voltage	at 105℃	Rated voltage x 1.15v
Leakage Current	at 20℃ after 2 minutes	Please see the attached characteristics list
Dissipation Factor (tan δ)	at 20℃, 120 Hz	Please see the attached characteristics list
Characteristics of Impedance at low, high temperature	at -55℃, 100 KHz	Z(-55℃) / Z(+20℃) ≦ 0.75 to 1.25
	at +105℃, 100 KHz	Z(+105℃) / Z(+20℃) ≦ 0.75 to 1.25
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 5,000 hours at 105℃.	Appearance — NO significant damage.
		Capacitance change — ≦ ±20% of the initial value.
		DF (tan δ) — ≦ 150% of the initial specified value.
		ESR — ≦ 150% of the initial specified value.
		Leakage current — ≦ The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them to store 60℃, 90 to 95% RH for 1,000 hours, without DC applied.	Appearance — NO significant damage.
		Capacitance change — ≦ ±20% of the initial value.
		DF (tan δ) — ≦ 150% of the initial specified value.
		ESR — ≦ 150% of the initial specified value.
		Leakage current — ≦ The initial specified value.
Surge Voltage	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105℃ for 30 seconds through aprotective resistor (R = 1 kΩ) and discharge for 5 minutes 30 seconds.	Appearance — NO significant damage.
		Capacitance change — ≦ ±20% of the initial value.
		DF (tan δ) — ≦ 150% of the initial specified value.
		ESR — ≦ 150% of the initial specified value.
		Leakage current — ≦ The initial specified value.

※ Note：If any doubt arises, measure the leakage current after following voltage treatment.
Voltage treatment：DC rated voltage are applied to the capacitors for 60 minutes at 105℃.

MARKING AND DIMENSIONS



(Unit:mm)

ΦDxL	4x6	6.3x6	6.3x9	6.3x11	8x8	8x12	10x12
ΦD+0.5	4.0	6.3	6.3	6.3	8	8	10
L max	6.0	6.0	9.5	12.0	8.8	12.0	12.0
Φd±0.05	0.45	0.45	0.5	0.5	0.6	0.6	0.6
P	1.5±0.5	2.5±0.5	2.5±0.5	2.5±0.5	3.5±0.5	3.5±0.5	5.0±0.5

EL SERIES STANRD CHARACTERISITICS LIST

WV/Vdc (S.V.)	Cap (μF)	Size DxL	Leakage current (μA) max. ※2	ESR (mΩ) max. 100k to 300 KHz / 20℃	Rated Ripple Current (mA rms) 100KHz / 105℃	D.F. (tanδ) max. 120Hz / 20℃
4 (4.6)	150	6.3x6	120	35	1,920	0.12
	270	6.3x9	216	9	4,800	0.12
	560	8x8	448	8	5,200	0.12
	560	8x12	448	9	5,500	0.12
	680	8x12	544	9	5,800	0.12
	1,200	10x12	960	10	5,500	0.12
6.3 (7.2)	330	6.3x9	415	20	3,000	0.12
	470	8x12	592	8	5,500	0.12
	560	6.3x9	706	10	4,300	0.12
	560	8x8	706	9	5,000	0.12
	820	10x12	1,033	9	5,500	0.12
10 (11.5)	150	6.3x9	300	20	3,000	0.12
	270	8x12	540	9	4,900	0.12
	330	8x12	660	9	4,900	0.12
	470	10x12	940	10	5,500	0.12
16 (18.4)	100	6.3x9	320	24	2,800	0.12
	270	8x12	864	10	4,500	0.12
	330	10x12	1,056	10	4,700	0.12
	470	10x12	1,504	11	4,700	0.12

※ 1. Capacitance tolerance：±20% (M)
※ 2. After 2 minutes

FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz ≦ f ＜ 1KHz	1KHz ≦ f ＜ 10KHz	10KHz ≦ f ＜ 100KHz	100KHz ≦ f ＜ 500KHz
Coefficient	0.05	0.3	0.7	1