TLF Series

● 105℃ 5,000Hrs assured.

- Non-solvent proof
- Downsized
- For OBC, SMPS, Inverter.
- **RoHS compliant.**
- **Halogen-free capacitors are also available.**

TLC → TLF

High Ripple, Downsized

SPECCIFICATIONS

Iteam	Characteristics
Rated Voltage Range	450 ~ 500 V_{DC}
Operating Temperature Range	-40 ~ +105℃
Capacitance Tolerance	±20% (M) (at 20℃, 120㎐)
Leakage Current	I = 0.02CV or 3mA, whichever is smaller. Where, I : Leakage current(㎂) C : Nominal capacitance(㎌) V : Rated voltage(V_{DC}) (at 20℃, 5minutes)
※Dissipation Factor (tan δ)	Rated Voltage(V_{DC}): 450~500 Tanδ(Max.): 0.20 (at 20℃, 120㎐)
Temperature Characteristics (Max. Impedance ratio)	Rated Voltage(V_{DC}): 450~500 Z(-25℃)/Z(20℃): 8 Z(-40℃)/Z(20℃): 16 (at 120㎐)
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 5,000 hours at 105℃ Capacitance change ≤ ±25 % of the initial value tan δ ≤ 250 % of the initial specified value Leakage current ≤ The initial specified value
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the exposing them at 105℃ for 1,000hours without voltage applied. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. Capacitance change ≤ ±20 % of the initial value tan δ ≤ 150 % of the initial specified value Leakage current ≤ The initial specified value
Others	Satisfied characteristics KS C IEC 60384-4

* For capacitors with CV products > 100,000 Higher Tanδ value may apply.
When the capacitance exceeds 1,000㎌, 0.01 shall be added every 1,000㎌ increase.

RATED RIPPLE CURRENT

When capacitors are operated in any other condition at 120㎐, the maximum ripple current must be multiplied by the figure shown in the table.

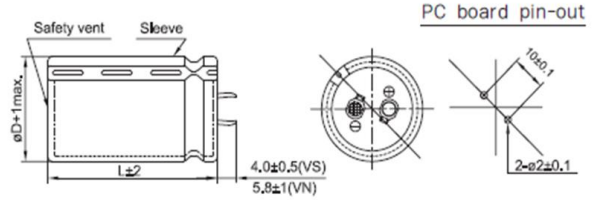
Freauency multiplying factor

Freq.(㎐) / V_{DC}	60	120	300	1K	10K~
450~500	0.77	1.00	1.16	1.30	1.41

DIMENSIONS OF TLF Series

Unit (mm)

ø D= ø 22~ ø 35 VN/VS type



Marking : DARK BLUE SLEEVE, SILVER INK
The standard design has no bottom plate.

RATINGS OF TLF Series

V_{DC} / μF \ ΦD	450				500			
	22	25.4	30	35	22	25.4	30	35
82					22×35 (0.56)			
100					22×40 (0.65)	25.4×30 (0.63)		
120					22×45 (0.75)	25.4×35 (0.73)		
150	22×35 (0.68)				22×50 (0.87)	25.4×40 (0.85)	30×30 (0.84)	
180	22×40 (0.78)	25.4×30 (0.76)				25.4×45 (0.97)	30×35 (0.97)	
220	22×45 (0.90)	25.4×35 (0.88)				25.4×50 (1.12)	30×40 (1.12)	35×30 (1.09)
270	22×50 (1.04)	25.4×40 (1.03)	30×30 (1.01)				30×45 (1.29)	35×35 (1.27)
330		25.4×45 (1.18)	30×35 (1.17)				30×50 (1.48)	35×40 (1.47)
390		25.4×50 (1.33)	30×40 (1.33)	35×30 (1.30)				35×45 (1.66)
470			30×45 (1.52)	35×35 (1.50)				35×50 (1.89)
560			30×50 (1.72)	35×40 (1.71)				
680				35×45 (1.96)				
820				35×50 (2.24)	← Case Size ΦD×L(㎜) ← Rated Ripple Current(Arms/105℃, 120Hz)			

RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

V_{DC} \ Freq.(Hz)	60	120	300	1k	10k~
450~500	0.77	1.00	1.16	1.30	1.41