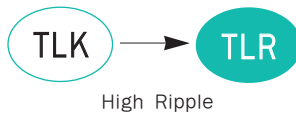


## TLR Series

• 105°C 3,000Hrs assured.

- Non-solvent proof
- High Ripple, Wide Temp.
- For SMPS, Inverter.
- RoHS compliant.
- Halogen-free capacitors are also available.



## SPECIFICATIONS

Item	Characteristics	
Rated Voltage Range	400 ~ 500 V <sub>DC</sub>	
Operating Temperature Range	-40 ~ +105°C	
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)	
Leakage Current	$I = 3\sqrt{CV}$ or 3mA, Whichever is smaller. Where, I:Leakage Current(µA), C:Nominal capacitance(µF), V:Rated voltage(V <sub>DC</sub> ) (at 20°C, 5minutes)	
*Dissipation Factor(Tanδ)	Rated voltage(V <sub>DC</sub> )	400      420~500
	Tanδ(Max.)	0.15      0.20
Temperature Characteristics (Max. Impedance ratio)	Rated voltage(V <sub>DC</sub> )	400      420~500
	Z(-25°C)/Z(20°C)	4      8
	Z(-40°C)/Z(20°C)	8      16
	(at 120Hz)	
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage with the rated ripple current is applied (the peak voltage shall not exceed the rated voltage) for 3,000 hours at 105°C  Capacitance change ≤ ±20% of the initial value Tanδ ≤ 200% 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°C after the exposing them at 105°C 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 Tanδ ≤ 200% 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 1,000µF, 0.01 shall be added every 1,000µF increase.

## RATED RIPPLE CURRENT

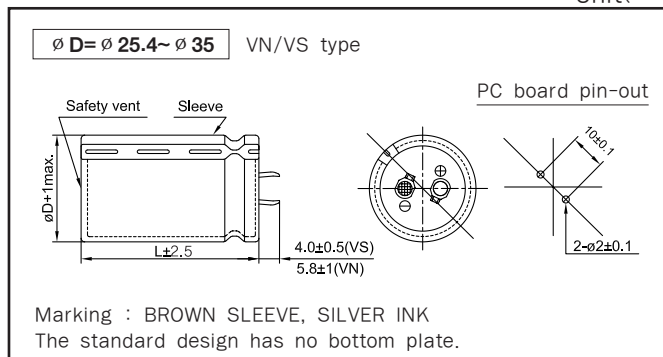
When capacitor are operated in any other condition at 120Hz, the maximum ripple current must be multiplied by the figure shown in the table.

Frequency multiplying factor

V <sub>DC</sub>	Freq.(Hz)	60	120	300	1k	10k~
400~500		0.77	1.00	1.16	1.30	1.41

## DIMENSIONS OF TLR Series

Unit(mm)



## RATINGS OF TLR Series

V <sub>DC</sub>	Capacitance (μF)	∅D×L(mm)	Rated Ripple Current (Arms/105°C,120Hz)
400	150	25.4 × 25	1.19
	220	25.4 × 30	1.55
		30 × 25	1.57
	270	25.4 × 35	1.76
	330	30 × 30	2.00
		35 × 25	2.10
	390	25.4 × 50	2.28
		30 × 35	2.29
		35 × 30	2.29
	470	30 × 40	2.60
		35 × 35	2.57
	560	30 × 50	3.10
35 × 40		3.00	
680	35 × 45	3.60	
820	35 × 50	3.90	
420	120	25.4 × 25	1.18
	180	25.4 × 30	1.39
		30 × 25	1.50
	220	25.4 × 35	1.58
	270	25.4 × 40	1.80
		30 × 30	1.80
		35 × 25	1.81
	330	25.4 × 50	2.17
		30 × 35	2.17
	390	35 × 30	2.20
		30 × 40	2.49
	470	35 × 35	2.75
		30 × 50	3.06
	560	35 × 40	3.10
		35 × 45	3.20
	680	35 × 50	3.68

V <sub>DC</sub>	Capacitance (μF)	∅D×L(mm)	Rated Ripple Current (Arms/105°C,120Hz)
450	120	25.4 × 25	1.08
	150	25.4 × 30	1.20
	180	30 × 25	1.39
		25.4 × 35	1.30
	220	25.4 × 40	1.50
		30 × 30	1.50
	270	35 × 25	1.70
	330	25.4 × 50	1.97
		30 × 40	1.95
	390	30 × 45	2.39
		35 × 35	2.36
	470	30 × 50	2.55
		35 × 40	2.54
	560	35 × 45	2.68
680	35 × 50	2.95	
500	82	25.4 × 25	0.83
	120	25.4 × 30	1.02
		30 × 25	1.02
	150	25.4 × 40	1.20
		30 × 30	1.20
	220	35 × 30	1.52
		25.4 × 50	1.55
		30 × 40	1.55
	270	30 × 45	1.65
		35 × 35	1.70
	330	35 × 40	1.83
470	35 × 50	1.95	