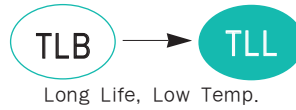


## TLL Series

• 105°C 10,000Hrs assured.

- Non-solvent proof.
- Long Life.
- For SMPS, Inverter.
- RoHS compliant.
- Halogen-free capacitors are also available.



## SPECIFICATIONS

Item	Characteristics									
Rated Voltage Range	200 ~ 500 V <sub>DC</sub>									
Operating Temperature Range	-40 ~ +105°C									
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)									
Leakage Current	I = 3√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)	<table border="1"> <tr> <td>Rated voltage(V<sub>DC</sub>)</td> <td>200 ~ 500</td> </tr> <tr> <td>Tanδ(Max.)</td> <td>0.20</td> </tr> </table> (at 20°C, 120Hz)	Rated voltage(V <sub>DC</sub> )	200 ~ 500	Tanδ(Max.)	0.20					
Rated voltage(V <sub>DC</sub> )	200 ~ 500									
Tanδ(Max.)	0.20									
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <tr> <td>Rated voltage(V<sub>DC</sub>)</td> <td>200~400</td> <td>420~500</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>4</td> <td>8</td> </tr> <tr> <td>Z(-40°C)/Z(20°C)</td> <td>8</td> <td>16</td> </tr> </table> (at 120Hz)	Rated voltage(V <sub>DC</sub> )	200~400	420~500	Z(-25°C)/Z(20°C)	4	8	Z(-40°C)/Z(20°C)	8	16
Rated voltage(V <sub>DC</sub> )	200~400	420~500								
Z(-25°C)/Z(20°C)	4	8								
Z(-40°C)/Z(20°C)	8	16								
Load Life	<p>The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 10,000 hours at 105°C.</p> <p>Capacitance change ≤ ±25% of the initial value            Tanδ ≤ 300% of the initial specified value            Leakage current ≤ The initial specified value</p>									
Shelf Life	<p>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.</p> <p>Capacitance change ≤ ±20% of the initial value            Tanδ ≤ 200% of the initial specified value            Leakage current ≤ The initial specified value</p>									
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

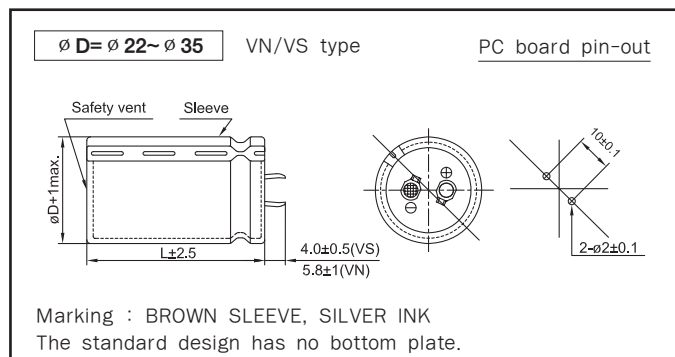
When capacitors are operated in any other conditions at 120Hz the maximum ripple current must be multiplied by the figure shown in the table.

Frequency multiplying factor

V <sub>DC</sub> \ Freq.(Hz)	60	120	300	1k	10k~
200~250V <sub>DC</sub>	0.81	1.00	1.17	1.32	1.45
350~500V <sub>DC</sub>	0.77	1.00	1.16	1.30	1.41

## DIMENSIONS OF TLL Series

Unit(mm)



## RATINGS OF TLL Series

VDC	Capacitance (μF)	øD×L(mm)	Rated Ripple Current (Arms/105°C, 120Hz)
200	270	25.4×25	1.01
	390	25.4×30	1.24
	470	25.4×35	1.40
	560	25.4×40	1.55
		30×30	1.63
	680	25.4×50	1.87
		30×35	1.80
	820	30×40	2.01
		35×30	2.01
	1000	30×45	2.29
		35×35	2.29
		40×30	2.25
	1200	35×40	2.58
		40×35	2.51
1500		35×50	3.01
1800	40×50	3.33	
250	330	25.4×30	1.15
	390	25.4×35	1.29
		30×30	1.32
	470	25.4×40	1.49
		30×35	1.51
	560	25.4×50	1.70
		35×30	1.69
	680	30×45	1.97
		35×35	1.92
	820	30×50	2.03
		35×40	2.01
		40×35	1.96
	1000	35×45	2.30
		40×40	2.55
1200	35×50	2.60	
1500	40×50	3.21	
400	100	25.4×25	0.63
	150	25.4×30	0.84
	180	25.4×35	0.97
	220	25.4×40	1.11
	270	25.4×50	1.25
		30×35	1.25
		35×30	1.26
	330	30×40	1.29
		35×35	1.46
	390	30×45	1.58
		40×30	1.53
	470	35×40	1.76
		40×35	1.76
	560	35×50	2.01
		40×40	2.02
	680	40×50	2.29
820	40×60	2.61	

VDC	Capacitance (μF)	øD×L(mm)	Rated Ripple Current (Arms/105°C, 120Hz)
450	100	25.4×25	0.59
	120	25.4×30	0.68
	150	25.4×35	0.81
	180	25.4×40	0.93
		25.4×45	1.08
	220	30×40	1.20
		35×30	1.17
	270	30×45	1.21
		35×35	1.19
		330	30×50
	390	35×40	1.52
	470	35×50	1.79
560	40×60	2.19	
500	68	25.4×30	0.33
	82	25.4×35	0.37
	100	30×30	0.41
		25.4×45	0.47
	120	30×35	0.47
		30×40	0.54
	150	35×30	0.55
		30×45	0.61
	180	35×35	0.62
		220	35×40
270	35×50	0.83	