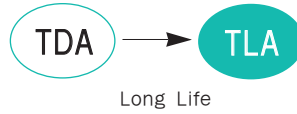


## TLA Series

• 105°C 3,000Hrs assured.

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



## SPECIFICATIONS

Item	Characteristics						
Rated Voltage Range	160 ~ 500 V <sub>DC</sub>						
Operating Temperature Range	-25 ~ +105°C						
Capacitance Tolerance	±20%(M) (at 20°C, 120Hz)						
Leakage Current	I=0.02CV 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 colspan="2">160 ~ 500</td> </tr> <tr> <td>Tanδ(Max.)</td> <td colspan="2">0.20</td> </tr> </table> (at 20°C, 120Hz)	Rated voltage(V <sub>DC</sub> )	160 ~ 500		Tanδ(Max.)	0.20	
Rated voltage(V <sub>DC</sub> )	160 ~ 500						
Tanδ(Max.)	0.20						
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <tr> <td>Rated voltage(V<sub>DC</sub>)</td> <td>160 ~ 400</td> <td>420 ~ 500</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>4</td> <td>8</td> </tr> </table> (at 120Hz)	Rated voltage(V <sub>DC</sub> )	160 ~ 400	420 ~ 500	Z(-25°C)/Z(20°C)	4	8
Rated voltage(V <sub>DC</sub> )	160 ~ 400	420 ~ 500					
Z(-25°C)/Z(20°C)	4	8					
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied 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 1,000 hours 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

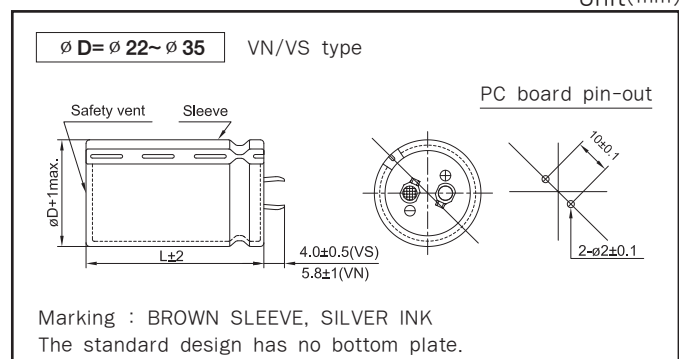
When capacitor are operated in any other condition at 120Hz, the maximum ripple current must be multiplied by the figure shown in the table.

Frequency multiplying factor

V <sub>DC</sub> \ Freq.(Hz)	60	120	300	1k	10k~
160~250V <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 TLA Series

Unit(mm)



## RATINGS OF TLA Series

Vdc μF / ØD	160				200				250			
	22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
180									22 × 25 0.78			
220									22 × 30 1.00	25.4 × 25 0.95		
270					22 × 25 1.10				22 × 30 1.18	25.4 × 25 1.18		
330	22 × 25 1.20				22 × 30 1.25	25.4 × 25 1.25			22 × 35 1.30	25.4 × 35 1.30	30 × 25 1.30	
390	22 × 25 1.26	25.4 × 25 1.30			22 × 30 1.35	25.4 × 25 1.35			22 × 40 1.49	25.4 × 35 1.49	30 × 25 1.49	
470	22 × 30 1.33	25.4 × 25 1.33			22 × 40 1.50	25.4 × 30 1.50	30 × 25 1.50		22 × 45 1.65	25.4 × 35 1.65	30 × 30 1.65	35 × 25 1.65
560	22 × 35 1.60	25.4 × 30 1.60	30 × 25 1.60		22 × 45 1.67	25.4 × 30 1.60	30 × 25 1.60		22 × 50 1.67	25.4 × 40 1.80	30 × 30 1.80	35 × 25 1.80
680	22 × 40 1.82	25.4 × 30 1.82	30 × 25 1.82		22 × 45 1.78	25.4 × 35 1.78	30 × 30 1.78	35 × 25 1.78		25.4 × 50 2.00	30 × 35 2.00	35 × 30 2.00
820	22 × 45 2.04	25.4 × 35 2.04	30 × 30 2.04	35 × 25 2.04		25.4 × 45 2.04	30 × 30 2.04	35 × 25 2.04		25.4 × 60 2.20	30 × 40 2.30	35 × 35 2.30
1,000	22 × 50 2.25	25.4 × 40 2.25	30 × 30 2.25	35 × 25 2.25		25.4 × 50 2.30	30 × 35 2.30	35 × 30 2.30			30 × 50 2.47	35 × 40 2.47
1,200		25.4 × 45 2.49	30 × 35 2.49	35 × 30 2.49		25.4 × 60 2.66	30 × 40 2.65	35 × 35 2.65			30 × 60 2.85	35 × 45 2.60
1,500		25.4 × 60 2.97	30 × 40 2.84	35 × 30 2.84			30 × 50 3.08	35 × 40 3.08				35 × 50 3.00
1,800			30 × 45 3.32	35 × 35 3.00			30 × 60 3.49	35 × 45 3.48				35 × 60 3.42
2,200			30 × 60 3.86	35 × 45 3.50				35 × 50 3.78	← Case Size ØD × L (mm) ← Rated Ripple Current (Arms/105°C, 120Hz)			

Vdc μF / ØD	350				400			
	22	25.4	30	35	22	25.4	30	35
68					22 × 25 0.55			
82	22 × 25 0.55				22 × 25 0.64			
100	22 × 25 0.69				22 × 30 0.70	25.4 × 25 0.70		
120	22 × 30 0.75	25.4 × 25 0.75			22 × 35 0.75	25.4 × 25 0.75	30 × 25 0.80	
150	22 × 35 0.82	25.4 × 30 0.83	30 × 25 0.82		22 × 40 0.88	25.4 × 30 0.88	30 × 25 0.88	
180	22 × 40 0.92	25.4 × 30 0.92	30 × 25 0.90		22 × 45 0.98	25.4 × 35 0.98	30 × 30 0.98	35 × 25 0.98
220	22 × 45 1.05	25.4 × 35 1.04	30 × 30 1.02	35 × 25 1.04	22 × 50 1.10	25.4 × 40 1.10	30 × 30 1.10	35 × 25 1.0
270	22 × 50 1.16	25.4 × 40 1.18	30 × 30 1.17	35 × 25 1.20		25.4 × 45 1.22	30 × 35 1.22	35 × 30 1.22
330		25.4 × 45 1.29	30 × 35 1.34	35 × 30 1.22		25.4 × 50 1.44	30 × 40 1.44	35 × 30 1.44
390		25.4 × 50 1.51	30 × 40 1.51	35 × 35 1.47		25.4 × 60 1.51	30 × 45 1.60	35 × 35 1.60
470		25.4 × 60 1.66	30 × 45 1.65	35 × 35 1.69			30 × 50 1.90	35 × 40 1.90
560			30 × 50 1.85	35 × 40 1.90			30 × 60 2.10	35 × 45 2.12
680			30 × 60 2.15	35 × 50 1.99				35 × 60 2.27

## RATINGS OF TLA Series

V <sub>DC</sub> μF ∅D	420				450			
	22	25.4	30	35	22	25.4	30	35
56					22 × 25 0.40			
68	22 × 25 0.50				22 × 30 0.53	25.4 × 25 0.50		
82	22 × 25 0.64	25.4 × 25 0.58			22 × 30 0.64	25.4 × 25 0.64		
100	22 × 30 0.70	25.4 × 25 0.70			22 × 35 0.69	25.4 × 30 0.69	30 × 25 0.64	
120	22 × 35 0.75	25.4 × 30 0.75	30 × 25 0.73		22 × 40 0.80	25.4 × 30 0.80	30 × 25 0.80	35 × 25 0.73
150	22 × 40 0.88	25.4 × 35 0.88	30 × 25 0.88		22 × 45 0.88	25.4 × 35 0.88	30 × 30 0.88	35 × 25 0.75
180	22 × 45 0.95	25.4 × 35 0.95	30 × 30 0.95	35 × 25 0.94	22 × 50 1.00	25.4 × 40 1.00	30 × 30 1.00	
220	22 × 50 1.10	25.4 × 45 1.10	30 × 35 1.10	35 × 25 1.10		25.4 × 45 1.12	30 × 35 1.12	35 × 30 1.12
270		25.4 × 50 1.22	30 × 40 1.22	35 × 30 1.22		25.4 × 50 1.18	30 × 40 1.28	35 × 35 1.28
330		25.4 × 60 1.41	30 × 45 1.45	35 × 35 1.45			30 × 50 1.45	35 × 40 1.45
390			30 × 50 1.55	35 × 40 1.55			30 × 60 1.51	35 × 40 1.55
470			30 × 60 1.79	35 × 45 1.90	← Case Size ∅D × L (mm) ← Rated Ripple Current (Arms/105°C, 120Hz)			35 × 50 1.85

V <sub>DC</sub> μF ∅D	500			
	22	25.4	30	35
56	22 × 35 0.46	25.4 × 30 0.46	30 × 30 0.48	
68	22 × 40 0.50	25.4 × 35 0.53	30 × 30 0.55	
82	22 × 45 0.56	25.4 × 35 0.58	30 × 35 0.58	
100		25.4 × 40 0.65	30 × 35 0.66	
120		25.4 × 45 0.75	30 × 40 0.76	35 × 30 0.78
150			30 × 45 0.80	35 × 35 0.81
180			30 × 50 0.90	35 × 40 0.93
220			30 × 60 1.10	35 × 45 1.11
270				35 × 50 1.28
330				35 × 60 1.50