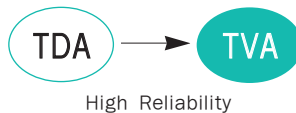


TVA Series

• 105°C 2,000Hrs assured.

- Non-solvent proof.
- No sparks with DC overvoltage.
- For SMPS.(SET is specified Safety Standard)
- RoHS compliant.
- Halogen-free capacitors are also available.



SPECIFICATIONS

Item	Characteristics						
Rated Voltage Range	200 ~ 450 V _{DC}						
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 _{DC}) (at 20°C, 5 minutes)						
※Dissipation Factor(Tanδ)	<table border="1"> <tr> <td>Rated voltage(V_{DC})</td> <td>200~400</td> <td>450</td> </tr> <tr> <td>Tanδ(Max.)</td> <td>0.15</td> <td>0.20</td> </tr> </table> (at 20°C, 120Hz)	Rated voltage(V _{DC})	200~400	450	Tanδ(Max.)	0.15	0.20
Rated voltage(V _{DC})	200~400	450					
Tanδ(Max.)	0.15	0.20					
Temperature Characteristics (Max. Impedance ratio)	<table border="1"> <tr> <td>Rated voltage(V_{DC})</td> <td>200~400</td> <td>450</td> </tr> <tr> <td>Z(-25°C)/Z(20°C)</td> <td>4</td> <td>8</td> </tr> </table> (at 120Hz)	Rated voltage(V _{DC})	200~400	450	Z(-25°C)/Z(20°C)	4	8
Rated voltage(V _{DC})	200~400	450					
Z(-25°C)/Z(20°C)	4	8					
DC Over Voltage Test	When an excessive DC voltage is applied to the capacitors under the test conditions on next page, the voltage shall operate and than the capacitors shall come to open-circuit without flaming materials.						
Load Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2,000 hours at 105°C. Capacitance change ≤ ±20% of the initial value Tan δ ≤ ±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 Tan δ ≤ ±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

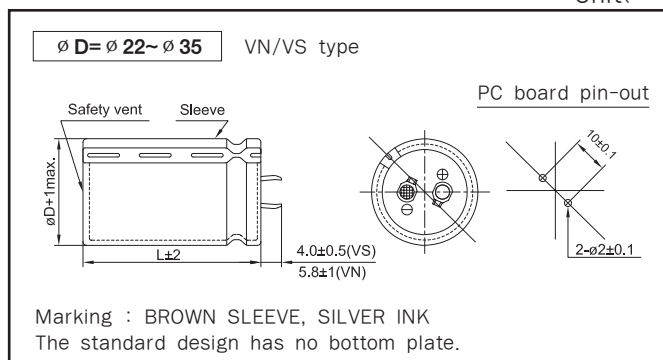
When capacitor are operated in any other condition at 120Hz, the maximum ripple current must be multiplied by the figure shown in the table.

Frequency multiplying factor

V _{DC} \ Freq.(Hz)	60	120	300	1k	10k~
200~250V _{DC}	0.81	1.00	1.17	1.32	1.45
350~450V _{DC}	0.77	1.00	1.16	1.30	1.41

DIMENSIONS OF TVA Series

Unit(mm)



RATINGS OF TVA Series

V _{DC} μF / ∅ D	200				250			
	22	25.4	30	35	22	25.4	30	35
120					22×20 0.68			
150					22×25 0.77			
180	22×25 0.82				22×30 0.87	25.4×25 0.93		
220	22×25 0.92				22×30 1.00	25.4×25 1.02		
270	22×30 1.02				22×35 1.14	25.4×30 1.13	30×25 1.25	
330	22×35 1.20	25.4×25 1.20			22×40 1.28	25.4×30 1.29	30×25 1.38	
390	22×40 1.35	25.4×30 1.35			22×45 1.42	25.4×35 1.46	30×30 1.52	35×25 1.62
470	22×45 1.52	25.4×30 1.45	30×25 1.47			25.4×40 1.64	30×30 1.67	35×25 1.81
560	22×50 1.74	25.4×35 1.60	30×30 1.60			25.4×45 1.82	30×35 1.87	35×30 1.99
680		25.4×40 1.82	30×30 1.81	35×25 1.86		25.4×50 1.96	30×40 2.12	35×30 2.19
820		25.4×50 2.11	30×35 2.11	35×30 2.11			30×45 2.39	35×35 2.42
1,000			30×40 2.40	35×30 2.40			30×50 2.52	35×40 2.57
1,200			30×50 2.65	35×35 2.65				35×45 2.70
1,500				35×45 3.08				35×50 3.00
1,800				35×50 3.31				

V _{DC} μF / ∅ D	400				450			
	22	25.4	30	35	22	25.4	30	35
56	22×25 0.45							
68	22×30 0.51				22×30 0.53			
82	22×30 0.58				22×35 0.64			
100	22×35 0.66	25.4×25 0.66			22×40 0.69	25.4×30 0.69		
120	22×40 0.76	25.4×30 0.76			22×45 0.80	25.4×35 0.80		
150	22×45 0.85	25.4×35 0.85	30×30 0.85		22×50 0.88	25.4×40 0.88	30×30 0.88	
180	22×50 0.94	25.4×40 0.95	30×30 0.95			25.4×45 1.00	30×35 1.00	
220		25.4×45 1.24	30×35 1.24	35×30 1.24		25.4×50 1.12	30×40 1.12	35×30 1.12
270		25.4×50 1.30	30×40 1.30	35×30 1.30			30×45 1.28	35×35 1.28
330			30×45 1.47	35×35 1.47			30×50 1.45	35×40 1.45
390			30×50 1.62	35×40 1.62				35×45 1.55
470				35×45 1.90				35×50 1.85
560				35×50 2.12				

← Case Size ∅ D × L (mm)
 ← Rated Ripple Current (Arms/105°C, 120Hz)

DC OVERVOLTAGE TEST CONDITIONS

The safety vent will operate and the capacitor shall become an open circuit without burning materials when the following excess DC voltage is applied.

● Test DC voltage

Rated voltage	Nominal capacitance	Current Limit	Test voltage
200V _{DC}	< 330 μF	4A	300/375V _{DC}
	330 μF ≤ C < 470 μF	5A	
	≥ 470 μF	7A	
250V _{DC}	< 100 μF	4A	350/450V _{DC}
	100 μF ≤ C < 220 μF	5A	
	≥ 220 μF	7A	
400V _{DC}	< 100 μF	4A	500/600V _{DC}
	100 μF ≤ C < 220 μF	5A	
	≥ 220 μF	7A	
450V _{DC}	< 100 μF	4A	550/675V _{DC}
	100 μF ≤ C < 220 μF	5A	
	≥ 220 μF	7A	

● Test circuit

