

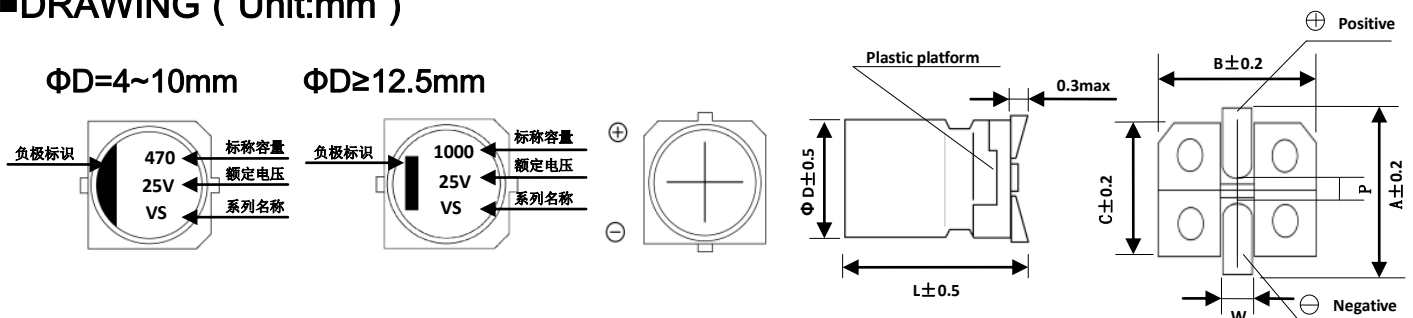
VS series Standard

- Operating with general temperature range -40~105°C
- Load life of 2000 hours
- Comply with the ROHS directive

■ SPECIFICATIONS

Item	Characteristics												
Operating Temperature Range	-40~105°C												
Rated Voltage Range	4~450V												
Capacitance Range	0.1~6800uF												
Capacitance Tolerance	±20% at 120Hz,20°C												
Leakage Current (MAX)	Rated voltage	6.3~100V											
	Case size	Φ4~Φ10 Φ12.5~Φ16 160~450V Φ6.3~Φ16											
	Time	After 2 min(application of rated voltage) After 1 min(application of rated voltage) After 2 min(application of rated voltage)											
	Leakage current	≤0.01CV or 3uA ≤0.03CV or 4uA ≤0.04CV +100uA Whichever is greater Whichever is greater Whichever is greater											
Dissipation Factor (tan δ)	Measurement frequency : 120Hz 20°C												
	Rated voltage(V)	4	6.3	10	16	25	35	50	63	100	160~250	350~450	
	Tan δ	Φ4~Φ10	0.35	0.30	0.24	0.20	0.18	0.16	0.14	0.14	0.14	0.20	0.25
Low Temperature Stability Impedance Ratio	Measurement frequency:120Hz												
	Impedance Ratio	Φ4~Φ10	Z(-25°C) / Z(+20°C)	7	4	3	2	2	2	2	2	2	3
			Z(-40°C) / Z(+20°C)	15	8	6	4	4	3	3	3	3	6
	ZT/Z20(max)	Φ12.5~Φ16	Z(-25°C) / Z(+20°C)	7	5	4	3	2	2	2	2	2	4
			Z(-40°C) / Z(+20°C)	17	12	10	8	5	4	3	3	6	10
Load Life	After 2000 hours of rated operating voltage at 105 °C, the characteristics of the capacitor meet the requirements of the following table												
	Leakage Current	≤The initial specified value											
	Capacitance Change	Within ±20% of the initial value (≤10V Within ±30%)											
Shelf Life	After 1000 hours of no-load storage in a 105 °C environment, the characteristics of the capacitor meet the specified values listed in the high-temperature load characteristics.												
	After reflow soldering and cooling to room temperature, the characteristics of the capacitor meet the requirements of the following table.												
	Leakage Current	≤The initial specified value											
Resistance to Soldering Heat	After reflow soldering and cooling to room temperature, the characteristics of the capacitor meet the requirements of the following table.												
	Capacitance Change	Within ±10% of the initial value											
	Dissipation Factor	≤The initial specified value											
Marking	Black print on the case top.												

■ DRAWING (Unit:mm)



VS series Standard

■DIMENSIONS(mm)

D×L	4×5.4	5×5.4	6.3×5.4	6.3×7.7	8×10.5	10×10.5	10×13.5	12.5×13.5	12.5×16	16×16.5
A	5.1	6.1	7.3	7.3	9.2	11.2	11.2	13.8	13.8	18.0
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
P±0.2	1.0	1.3	2.2	2.2	3.1	4.4	4.4	4.4	4.4	6.7
L	5.4	5.4	5.4	7.7	10.5	10.5	13.5	13.5	16.0	16.5

■DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

Size ΦD×L(mm)Ripple Current(mA 105°C,120Hz)r.m.s

WV CAP(μF)	4		6.3		10		16		25	
	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current
4.7									4×5.4	19
10							4×5.4	25	5×5.4 4×5.4	28 20
15							4×5.4	28	5×5.4	34
22			4×5.4	31	5×5.4 4×5.4	35 28	5×5.4 4×5.4	39 28	6.3×5.4 5×5.4	52 35
33	4×5.4	26	5×5.4 4×5.4	39 31	5×5.4 4×5.4	43 32	6.3×5.4 5×5.4	57 40	6.3×5.4 5×5.4	63 42
47	4×5.4	34	5×5.4 4×5.4	47 36	5×5.4	43	6.3×5.4 5×5.4	68 44	6.3×5.4	68
56	4×5.4	39	5×5.4	46	6.3×5.4	57	6.3×5.4	74	6.3×5.4	82
68	5×5.4	45	6.3×5.4 5×5.4	62 52	6.3×5.4	72	6.3×5.4	80	6.3×5.4	94
100	5×5.4	61	6.3×5.4 5×5.4	71 55	6.3×5.4 5×5.4	76 70	6.3×5.4	86	6.3×7.7	130
150	6.3×5.4	74	6.3×5.4	78	6.3×5.4	88	6.3×7.7	135	8×10.5 6.3×7.7	200 130
220	6.3×5.4	82	6.3×5.4	95	6.3×7.7	150	8×10.5 6.3×7.7	215 150	8×10.5	250
330	6.3×7.7	150	6.3×7.7	150	8×10.5	280	8×10.5	280	10×10.5 8×10.5	340 310
470	6.3×7.7	150	8×10.5 6.3×7.7	300 150	10×10.5 8×10.5	320 300	10×10.5 8×10.5	420 330	10×10.5	400
680	8×10.5	300	8×10.5	300	10×10.5	380	10×10.5	450	10×13.5	550
1000	8×10.5	330	10×10.5 8×10.5	430 330	10×10.5	450	12.5×13.5 10×13.5 10×10.5	710 550 490	12.5×13.5	820
1500	10×10.5	450	10×13.5 10×10.5	650 450	10×13.5	650	12.5×13.5	750	12.5×16	1000
2200	10×13.5 10×10.5	620 480	12.5×13.5 10×13.5	890 720	12.5×13.5	960	16×16.5 12.5×16	1150 1000	16×16.5	1250
3300	10×13.5	700	12.5×16 12.5×13.5	1000 900	16×16.5 12.5×16	1300 1050	16×16.5	1350		
4700	12.5×13.5	850	16×16.5	1400	16×16.5	1450				
6800	16×16.5 12.5×16	1350 900								

WV CAP(μF)	35		50		63		100	
	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current
0.1			4×5.4	1.0	4×5.4	1.0		
0.22			4×5.4	2.3	4×5.4	2.3		
0.33			4×5.4	3.5	4×5.4	3.5		
0.47			4×5.4	5.0	4×5.4	5.0		
1			4×5.4	10	4×5.4	10	4×5.4	10
1.5			4×5.4	12	4×5.4	12	6.3×5.4	15
2.2			4×5.4	15	4×5.4	15	6.3×5.4	20
3.3	4×5.4	18	4×5.4	18	5×5.4	20	6.3×7.7 6.3×5.4	45 28
4.7	4×5.4	20	5×5.4 4×5.4	23 19	5×5.4	23	6.3×7.7 6.3×5.4	50 30
10	5×5.4 4×5.4	30 20	6.3×5.4 5×5.4	34 27	6.3×7.7 6.3×5.4	55 34	8×10.5 6.3×7.7	110 50
22	6.3×5.4 5×5.4	54 42	6.3×5.4	60	8×10.5 6.3×7.7	140 70	10×10.5 8×10.5	180 120
33	6.3×5.4	60	6.3×7.7	85	8×10.5 6.3×7.7	160 85	10×10.5	190
47	6.3×5.4 6.3×7.7	70 90	10×10.5 8×10.5 6.3×7.7	130 110 90	10×10.5 8×10.5	230 170		

VS

series

Standard

■ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

 Size $\Phi D \times L$ (mm) Ripple Current(mA 105°C, 120Hz)r.m.s

VV CAP(μ F)	35		50		63		100		160	
	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current
22									10×13.5	50
33									12.5×13.5	95
47									12.5×13.5 16×16.5	205 240
56	6.3×7.7	80	6.3×7.7	110	10×10.5	250				
68	6.3×7.7	110	8×10.5	170	10×10.5	260				
100	8×10.5	175	10×10.5	240	12.5×13.5	380	12.5×13.5	440	16×16.5	250
	6.3×7.7	120	8×10.5	200	10×13.5 10×10.5	290 280				
150	8×10.5	220	10×10.5	240	10×13.5	310				
220	10×10.5	310	10×13.5	400	12.5×13.5	580	16×16.5	700		
	8×10.5	270	10×10.5	320						
330	10×10.5	350	12.5×13.5	600	16×16.5	820				
			10×13.5	420	12.5×16	720				
470	12.5×13.5 10×13.5 10×10.5	600 530 400	16×16.5	850	16×16.5	950				
			12.5×16	740						
680	12.5×13.5	750	16×16.5	950						
1000	16×16.5	1100								
	12.5×16	800								

VV CAP(μ F)	200		250		350		400		450	
	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current	SIZE	Ripple current
3.3							10×13.5	40	10×13.5	40
4.7			10×13.5	65	10×13.5	85	10×13.5 12.5×13.5	45 48	10×13.5 12.5×13.5	42 45
10	10×13.5	75	10×13.5	75	12.5×13.5	105	12.5×13.5	50	12.5×13.5	55
22	12.5×13.5	105	12.5×13.5	105	16×16.5	130	16×16.5	85	16×16.5	85
33	12.5×13.5	120	16×16.5	135						
47			16×16.5	220						

■ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency		50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient	$\Phi 4 \sim \Phi 10$	0.1~68 μ F	0.70	1.00	1.17	1.36
		100~3300 μ F	0.85	1.00	1.08	1.20
	$\Phi 12.5 \sim \Phi 16$	1~68 μ F	0.75	1.00	1.35	1.57
		100~680 μ F	0.80	1.00	1.23	1.34
		1000~6800 μ F	0.85	1.00	1.10	1.13

● Aluminum electrolytic capacitors due to self-heating when the ripple current is superimposed, aging due to temperature rise, the life is reduced by half every 5°C; if you want to maintain a long life, please reduce the ripple current during use.