VA series

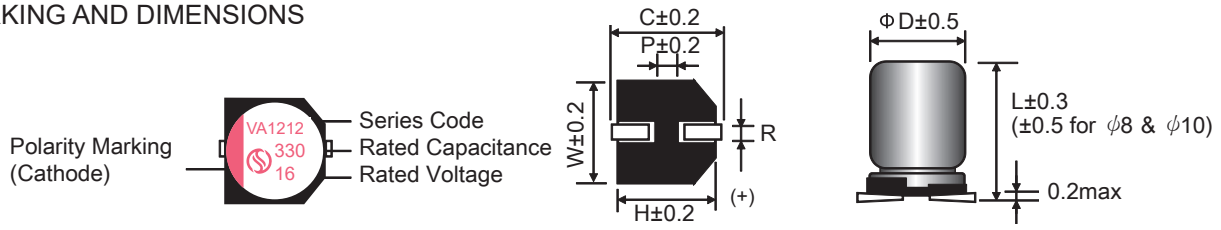
- Standard SMD type
- Rated voltage : 2.5~25V
- Endurance : 2,000 hours at 105℃
- Applications : motherboards, serves, VGA, etc.
- RoHS compliance
- Halogen Free compliant

SPECIFICATIONS

Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +105℃	
Rated Voltage Range	—	2.5 ~ 25V	
Capacitance Tolerance	at 20℃,120Hz	±20%(M)	
Surge Voltage	at 105℃	Rated voltage ×1.15V	
Leakage Current	at 20℃ after 2 minutes	I ≦ 0.2CV or 300(μA) Whichever is greater measured,after 2minutes application of rated working voltage at +20℃. Please see the attached characteristics list	
Dissipation Factor (tan δ)	at 20℃,120Hz	Please see the attached characteristics list	
Characteristics of Impedance at low, high temperature	at -55℃,100kHz	Z(-55℃)/Z(+20℃)	≦ 1.25
	at -25℃,100kHz	Z(-25℃)/Z(+20℃)	≦ 1.15
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃after the rated voltage is applied for 2,000 hours at 105℃.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF (tan δ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them to store at 60℃, 90 to 95% RH for 1,000 hours ,without DC applied.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF (tan δ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ The initial specified value.
Surge Voltage	The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 105℃ for 30 seconds through aprotective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds.	Appearance	NO significant damage.
		Capacitance change	≦ ±20% of the initial value.
		DF (tan δ)	≦ 150% of the initial specified value.
		ESR	≦ 150% of the initial specified value.
		Leakage current	≦ The initial specified value.

※ Note:If any doubt arises,measure the leakage current after following voltage treatment.
Voltage treatment :DC rated voltage are applied to the capacitors for 120 minutes at 105℃.

MARKING AND DIMENSIONS



(Unit:mm)

φ DxL	φ D	L	W	H	C	R	P
5×6	5.0	6.0	5.3	5.3	6.0	0.5~0.8	1.4
6.3×6	6.3	6.0	6.6	6.6	7.3	0.5~0.8	2.1
6.3x7	6.3	7.0	6.6	6.6	7.3	0.5~0.8	2.1
6.3x9.5	6.3	9.5	6.6	6.6	7.3	0.5~0.8	2.1
8×7	8.0	7.0	8.3	8.3	9.3	0.5~0.8	3.2
8x9.5	8.0	10.0	8.3	8.3	9.3	0.8~1.1	3.2
8×12	8.0	12.0	8.3	8.3	9.0	0.8~1.1	3.2
10x10	10.0	10.0	10.3	10.3	11.0	0.8~1.1	4.6
10×12.5	10.0	12.5	10.3	10.3	11.0	0.8~1.1	4.6

VA SERIES STANRD CHARACTERISITICS LIST

Rated Voltage (S.V.)	Cap (μF)	Size DxL	Leakage current (μA) max. ※2	ESR (mΩ) max. 100k to 300kHz / 20℃	Rated Ripple Current (mA rms) 100kHz / 105℃	D.F. (tanδ) max. 120Hz / 20℃
2.5 (2.9)	220	6.3×6	300	25	2,390	0.12
	330	6.3x6	300	25	2,390	0.12
	560	6.3x7	300	25	2,390	0.12
	820	6.3x9.5	410	20	3,000	0.12
	1,200	8x9.5	600	20	4,520	0.12
	1,500	8x9.5	750	20	4,520	0.12
	1,800	8x12	900	13	4,520	0.12
	2,200	10x10	1,100	18	4,520	0.12
	2,700	10x12.5	1,350	15	5,200	0.12
4 (6.3)	220	6.3x6	300	25	2,000	0.12
	560	6.3x9.5	448	20	4,500	0.12
	820	8x9.5	656	20	4,500	0.12
	1,000	8x9.5	800	20	4,500	0.12
	1,200	8x12	960	15	4,820	0.12
	1,500	10x10	1,200	15	4,820	0.12
	2,200	10x12.5	1,760	15	5,200	0.12
6.3 (7.2)	100	6.3x6	300	25	2,400	0.12
	220	6.3x6	300	25	2,400	0.12
	220	8x7	300	25	3,020	0.12
	560	6.3x9.5	705	20	3,020	0.12
	820	8x9.5	1,033	20	4,500	0.12
	1,000	8x9.5	1,260	20	4,500	0.12
	1,200	8x12	1,512	15	4,800	0.12
	1,500	10x10	1,890	15	4,950	0.12
	2,200	10x12	2,772	15	5,200	0.12
10 (11.5)	33	5x6	300	45	1,100	0.12
	100	6.3x6	300	30	1,700	0.12
	150	6.3x6	300	45	1,700	0.12
	330	6.3x9.5	660	45	2,050	0.12
	560	8x9.5	1,120	35	2,560	0.12
	680	8x9.5	1,360	35	2,560	0.12
	820	8x12	1,640	17	3,950	0.12
	1,000	10x10	2,000	15	3,950	0.12
	1,500	10x12	3,000	13	5,230	0.12
16 (18.4)	22	5x6	300	40	1,000	0.12
	100	6.3x6	320	35	1,620	0.12
	270	6.3x9.5	864	20	2,500	0.12
	270	8x9.5	864	20	3,200	0.12
	330	8x9.5	1,056	20	3,690	0.12
	470	8x9.5	1,504	20	3,890	0.12
	560	8x12	1,792	20	3,940	0.12
	680	10x10	2,176	20	4,220	0.12
	820	10x12.5	2,624	16	4,720	0.12
	1,000	10x12.5	3,200	16	5,200	0.12

※ 1. Capacitance tolerance : ±20% (M)
※ 2. After 2 minutes

VA SERIES STANRD CHARACTERISITICS LIST

Rated Voltage (S.V.)	Cap (μF)	Size DxL	Leakage current (μA) max. ※2	ESR (mΩ) max. 100k to 300kHz / 20℃	Rated Ripple Current (mA rms) 100kHz / 105℃	D.F. (tanδ) max. 120Hz / 20℃
20 (23.1)	68	6.3×6	300	38	1,450	0.12
	180	6.3x9.5	720	30	2,450	0.12
	330	8x9.5	1,320	30	3,000	0.12
	470	8x12	1,880	28	3,320	0.12
	560	10x10	2,240	28	3,320	0.12
	680	10x12	2,720	28	4,220	0.12
25 (28.7)	47	6.3x6	300	40	1,200	0.12
	100	6.3x9.5	500	30	2,000	0.12
	100	8x7	500	40	2,000	0.12
	150	8x9.5	750	35	3,000	0.12
	220	8x12	1,100	28	3,500	0.12
	330	10x10	1,650	30	3,800	0.12
	470	10x12	2,350	28	4,000	0.12

※ 1. Capacitance tolerance：±20% (M)
※ 2. After 2 minutes

FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz ≦ f ＜ 1kHz	1kHz ≦ f ＜ 10kHz	10kHz ≦ f ＜ 100kHz	100kHz ≦ f ＜ 500kHz
Coefficient	0.05	0.3	0.7	1.0