

VP series

- High temperature Low ESR, High ripple current capability
- Rated voltage : 6.3~35V
- Endurance : 2,000 hours at 125°C
- Applications : Lamps Power, LED Driver, Serving Equipment.
- RoHS compliance
- Halogen Free compliant



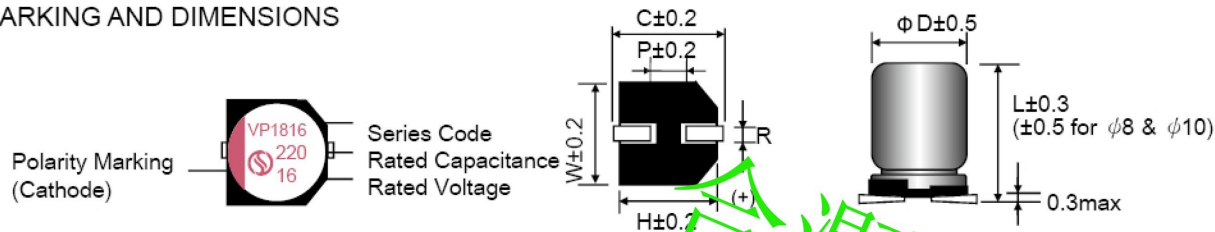
SPECIFICATIONS

Items	Conditions	Characteristics
Category Temperature Range	—	-55 to +125°C
Rated Voltage Range	—	6.3 ~ 35V
Capacitance Tolerance	at 20°C, 120Hz	±20%(M)
Surge Voltage	at 125°C	Rated voltage × 1.15V
Leakage Current	at 20°C after 2 minutes	$I \leq 0.2CV$ or $300(\mu A)$ Whichever is greater measured, after 2 minutes application of rated working voltage at +20°C. Please see the attached characteristics list
Dissipation Factor ($\tan \delta$)	at 20°C, 120Hz	Please see the attached characteristics list
Characteristics of Impedance at low, high temperature	at -55°C, 100kHz	$Z(-55^\circ C)/Z(+20^\circ C) \leq 1.25$
	at -25°C, 100kHz	$Z(-25^\circ C)/Z(+20^\circ C) \leq 1.15$
Endurance	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 125°C.	Appearance NO significant damage.
		Capacitance change $\leq \pm 20\%$ of the initial value.
		DF ($\tan \delta$) $\leq 150\%$ of the initial specified value.
		ESR $\leq 150\%$ of the initial specified value.
		Leakage current $\leq$ The initial specified value.
Damp Heat (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours, without DC applied.	Appearance NO significant damage.
		Capacitance change $\leq \pm 20\%$ of the initial value.
		DF ($\tan \delta$) $\leq 150\%$ of the initial specified value.
		ESR $\leq 150\%$ of the initial specified value.
		Leakage current $\leq$ 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°C for 30 seconds through a protective resistor ($R=1k\Omega$) and discharge for 5 minutes 30 seconds.	Appearance NO significant damage.
		Capacitance change $\leq \pm 20\%$ of the initial value.
		DF ($\tan \delta$) $\leq 150\%$ of the initial specified value.
		ESR $\leq 150\%$ of the initial specified value.
		Leakage current $\leq$ 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 125°C.

MARKING AND DIMENSIONS



$\phi D \times L$	ϕD	L	W	H	C	R	P
6.3×9.5	6.3	9.5	6.6	6.3	7.3	0.5~0.8	2.1
8×9.5	8.0	9.5	8.3	8.3	9.0	0.8~1.1	3.2
8×12	8.0	12.0	8.3	8.3	9.0	0.8~1.1	3.2
10×10.5	10.0	10.5	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

(Unit:mm)

VP SERIES STANDARD CHARACTERISTICS LIST

Rated Voltage (S.V.)	Cap (μ F)	Size DxL	Leakage current (μ A) max. ※2	ESR (m Ω) max. 100k to 300kHz / 20°C	Rated Ripple Current (mA rms/100kHz)		D.F. (tan δ) max. 120Hz / 20°C
					-55°C $\leq$ 環境温度 $\leq$ 105°C	105°C $\leq$ 環境温度 $\leq$ 125°C	
6.3 (7.2)	470	6.3x9.5	592	25	3,800	1,267	0.12
	680	8x9.5	857	25	4,000	1,333	0.12
	1000	8x12	1,260	20	4,200	1,400	0.12
	1200	10x10.5	1,512	25	5,500	1,833	0.12
	1800	10x12.5	2,268	20	6,100	2,033	0.12
10 (11.5)	330	6.3x9.5	660	25	3,700	1,233	0.12
	560	8x9.5	1,120	25	4,000	1,333	0.12
	680	8x12	1,360	20	4,500	1,500	0.12
	820	10x10.5	1,640	25	4,200	1,400	0.12
	1000	10x10.5	2,000	25	4,500	1,500	0.12
	1200	10x12.5	2,400	20	5,600	1,867	0.12
16 (18.4)	220	6.3x9.5	704	25	2,850	950	0.12
	330	8x9.5	1,056	25	4,000	1,333	0.12
	470	8x12	1,504	20	4,500	1,500	0.12
	680	10x10.5	2,176	25	5,100	1,700	0.12
	820	10x12.5	2,624	20	5,600	1,867	0.12
20 (23.0)	120	6.3x9.5	480	25	2,510	837	0.12
	220	8x9.5	880	25	2,750	917	0.12
	270	8x12	1,080	20	2,950	983	0.12
	330	10x10.5	1,320	25	4,700	1,567	0.12
	470	10x12.5	1,880	20	4,950	1,650	0.12
25 (28.8)	100	6.3x9.5	500	40	2,380	793	0.12
	180	8x9.5	900	30	2,900	967	0.12
	220	8x9.5	1,100	28	3,500	1,167	0.12
	330	10x10.5	1,650	30	4,250	1,417	0.12
	470	10x12.5	2,350	28	4,500	1,500	0.12
35 (40.3)	56	6.3x9.5	392	60	2,300	767	0.12
	100	8x9.5	700	50	2,500	833	0.12
	120	8x12	840	30	2,950	983	0.12
	150	10x10.5	1,050	30	2,950	983	0.12
	220	10x12.5	1,540	28	3,400	1,133	0.12

※ 1. Capacitance tolerance : $\pm 20\%$ (M)

※ 2. After 2 minutes

FREQUENCY COEFFICIENT FOR RIPPLE CURRENT

Frequency	120Hz $\leq$ f < 1kHz	1kHz $\leq$ f < 10kHz	10kHz $\leq$ f < 100kHz	100kHz $\leq$ f < 500kHz
Coefficient	0.05	0.3	0.7	1