

HA Series

● Low ESR ● High Voltage, Long Life. ● 105°C, 5,000~10,000hrs.

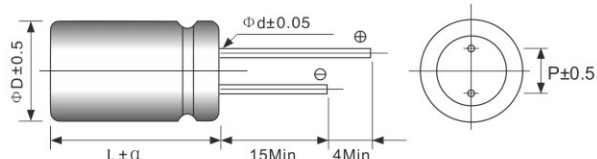
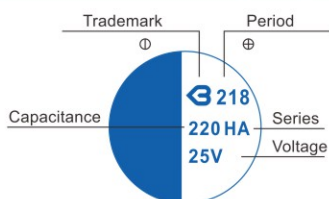
● RoHS compliant

◆ Specifications



Items	Characteristics		
Category Temperture Range	-55 ~ +105℃		
Rated Voltage Range	16~125V		
Capacitance tolerance	±20%(M) (at 20℃,120Hz)		
Leakage Current	I≤0.05CV or 100μA (The bigger) After 2 minutes applied for rated voltage at 20℃, less than or equal to the specified value.		
tan δ Dissipation Factor	Less than or equal to the specified (at 20℃,120Hz)		
Low Temperture Characteristics (Max.Impedance Ratio)	Z(-55℃)/Z(+20℃)	≒0.75 to 1.5	(100KHz)
	Z(+105℃)/Z(+20℃)	≒0.75 to 2.0	
Endurance	ΦD=Φ6.3=5,000hrs, ΦD≧Φ8=10,000hrs; The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 5,000 to 10,000 hours at 105℃. ΦD=Φ6.3=5,000hrs, ΦD≧Φ8=10,000hrs;		
	Appearance	No significant damage	
	Capacitance change	≒±30% of the initial value	
	D.F.(tan δ)	≒200% of the specified value	
	ESR	≒200% of the specified value	
	Leakage current	≒The specified value	
Damp Heat (Steady State)	The specifications listed below shall be met when the capacitors are restored to 20℃ after the rated voltage is applied for 1000 hours at 60℃, 90% ~ 95% RH.		
	Appearance	No significant damage	
	Capacitance change	≒±30% of the initial value	
	D.F.(tan δ)	≒200% of the specified value	
	ESR	≒200% of the specified value	
	Leakage current	≒The specified value	
(Surge Voltage)	Surge Voltage=Rated voltage * 1.15(V) The capacitors shall be subjected to 1,000 cycles each consisting of charge with the surge voltages specified at 15~35℃ for 30 seconds through aprotective resistor (R=1kΩ) and discharge for 5 minutes 30 seconds		
	Appearance	No significant damage	
	Capacitance change	≒±30% of the initial value	
	D.F.(tan δ)	≒200% of the specified value	
	ESR	≒200% of the specified value	
	Leakage current	≒The specified value	

◆ Dimensions (mm)



(Unit:mm)				
Coated Case	6.3*8	8*12	10*10	10*12
ΦD	6.3	8	10	10
L	L±1.5Max			
Φd	0.5	0.5	0.6	0.6
p	2.5	3.5	5.0	5.0

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◆ Standard Ratings

Rated voltage (V)	Rated capacitance(μ F)	Case size Φ D $\times$ L(mm)	Leakage current(μ A)	ESR($m\Omega$) at 20°C, 100 KHz	Rated ripple current(mArms/ 105°C/100kHz)	Tan δ (120Hz)
16	120	6.3*8	100.0	40	1500	0.16
	270	8*10	216.0	26	2000	0.16
	470	10*10	376.0	21	2600	0.16
	560	10*12	448.0	15	3000	0.16
25	68	6.3*8	100.0	45	1400	0.16
	150	8*10	187.5	27	1900	0.16
	270	10*10	337.5	22	2500	0.16
	330	10*12	412.5	16	2900	0.16
35	47	6.3*8	100.0	60	1300	0.16
	100	8*10	175.0	30	1800	0.16
	150	10*10	262.5	23	2400	0.16
	220	10*12	385.0	17	2800	0.16
40	27	6.3*8	100.0	70	1200	0.16
	56	8*10	112.0	32	1700	0.16
	100	10*10	200.0	24	2400	0.16
	120	10*12	240.0	18	2700	0.16
50	15	6.3*8	100.0	80	1200	0.16
	33	8*10	100.0	35	1600	0.16
	56	10*10	140.0	25	2300	0.16
	82	10*12	205.0	19	2600	0.16
63	10	6.3*8	100.0	100	1000	0.16
	22	8*12	100.0	40	1500	0.16
	33	8*12	104.0	40	1500	0.16
	33	10*10	104.0	30	2100	0.16
	47	10*10	148.1	30	2100	0.16
	56	10*12	176.4	22	2400	0.16
80	12	10*10	100.0	70	1600	0.16
	15	10*10	100.0	70	1600	0.16
	18	10*12	100.0	50	1800	0.16
100	10	10*10	100.0	80	1400	0.16
	12	10*10	100.0	80	1400	0.16
	15	10*12	100.0	60	1600	0.16
125	10	10*10	100.0	90	1200	0.16

◆ Rated Ripple Current Coefficient

Frequency(Hz)	100Hz $\leq$ f<1kHz	1kHz $\leq$ f<10kHz	10kHz $\leq$ f<100kHz	100kHz $\leq$ f
4.7 < C $\leq$ 33	0.05	0.32	0.67	1.00
33 < C	0.10	0.35	0.70	1.00