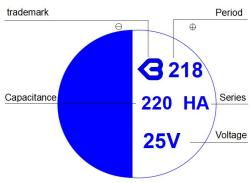
HA Series

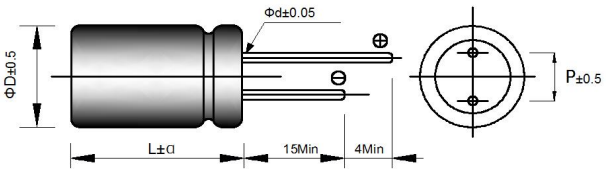
● Low ESR ● High Voltage, Long Life. ● 105°C,5,000~10,000hrs. ● RoHS compliant

◆ 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.		
tanδ 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	
Endurence	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.(tanδ)	≦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°C 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.(tanδ)	≦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 30seconds		
	Appearance	No significant damage	
	Capacitance change	≦±30% of the initial value	
	D.F.(tanδ)	≦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(μF)	Case size ΦD*L(mm)	Leakage carrent (μA)	ESR(mΩ) at 20℃,100 KHz	Rated ripple current (mArms/105℃/100kHz)	tanδ （120Hz）
16	100	5*8	80.0	25	2000	0.16
	220	6.3*8	176.0	20	3000	0.16
	270	6.3*8	216.0	20	3200	0.16
	330	6.3*9	264.0	25	3500	0.16
	470	8*8	376.0	20	2600	0.16
	560	8*12	448.0	15	3000	0.16
25	68	6.3*8	85.0	30	2900	0.12
	100	6.3*8	125.0	25	2900	0.12
	220	6.3*8	275.0	20	3000	0.12
	330	6.3*11	412.5	20	3600	0.12
35	68	6.3*8	119.0	40	2800	0.12
	100	6.3*8	175.0	25	2800	0.12
	220	8*12	385.0	20	3500	0.12
	330	10*10	577.5	20	4000	0.12
50	33	6.3*8	82.5	50	2000	0.10
	47	6.3*11	117.5	45	2200	0.10
	100	8*12	250.0	25	3000	0.10
	100	10*12	250.0	20	3500	0.10
63	10	6.3*8	31.5	70	1000	0.08
	22	6.3*8	69.3	40	1800	0.08
	33	8*10	104.0	40	2300	0.08
	47	8*12	104.0	30	2500	0.08
	56	8*12	176.4	22	2600	0.08
	100	10*12	315.0	20	3000	0.08
80	22	8*10	88.0	45	2500	0.08
	33	10*10	132.0	50	2800	0.08
	100	10*16	400.0	25	3000	0.08
100	22	8*12	110.0	40	2000	0.08
	47	10*12	235.0	35	2800	0.08
	100	10*16	500.0	35	3500	0.08
160	10	8*12	80.0	80	1600	0.08
250	6.8	10*12	85.0	200	1000	0.08

◆ Rated Ripple Current Coefficient

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