

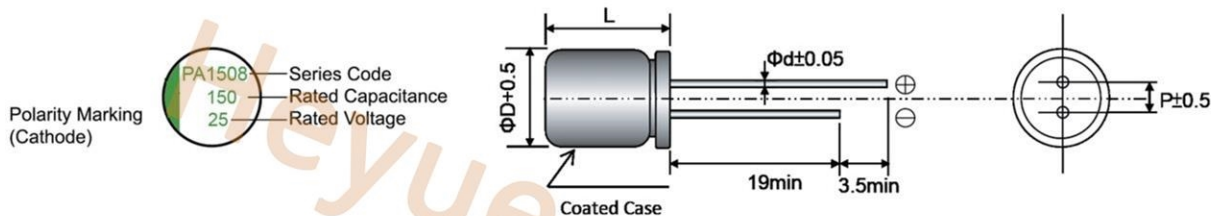
HPA series

- Low ESR.
- High Voltage, Long Life.
- 105°C, 5,000~10,000hrs.
- RoHS compliant
- For high reliability applications.(Automotive equipment, Base station equipment,etc.)

SPECIFICATIONS

Items	Conditions	Characteristics	
Category Temperature Range	—	-55 to +105°C	
Rated Voltage Range	—	16 ~ 125V	
Capacitance Tolerance	at 20°C,120Hz	±20%(M)	
Surge Voltage	at 15 ~ 35°C	Rated voltage ×1.25V	
Leakage Current	at 20°C after 2 minutes	$I \leq 0.01CV$ or $3(\mu A)$ 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	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 5,000 to 10,000 hours at 105°C. $\Phi 6.3=5,000\text{hrs}, D \geq \Phi 8=10,000\text{hrs}.$	Appearance	NO significant damage.
		Capacitance change	$\leq \pm 30\%$ of the initial value.
		DF ($\tan \delta$)	$\leq 200\%$ of the initial specified value.
		ESR	$\leq 200\%$ of the initial specified value.
		Leakage current	\leq The initial specified value.
Damp Heag (Steady State)	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them to store at 60°C, 90 to 95% RH for 1,000 hours, without DC applied.	Appearance	NO significant damage.
		Capacitance change	$\leq \pm 30\%$ of the initial value.
		DF ($\tan \delta$)	$\leq 200\%$ of the initial specified value.
		ESR	$\leq 200\%$ 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 15~35°C for 30 seconds through a protective resistor (R = 1 kΩ) and discharge for 5 minutes 30 seconds.	Appearance	NO significant damage.
		Capacitance change	$\leq \pm 30\%$ of the initial value.
		DF ($\tan \delta$)	$\leq 200\%$ of the initial specified value.
		ESR	$\leq 200\%$ 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 treatmen : DC rated voltage are applied to the capacitors for 120 minutes at 105°C.



Size Code	6.3x7.2	8x9.5	10x9.5	10x11.5
ϕD	6.3	8	10	10
L	L+1.5max	L+1.5max	L+1.5max	L+1.5max
ϕd	0.5	0.6	0.6	0.6
P	2.5	3.5	5.0	5.0

注：以上所提供的设计及特性参数仅供参考，任何修改不作预先通知，如有使用上任何疑问，请在采购前与我们联系，以便提供技术上的协助。

HPA SERIES STANRD CHARACTERISITICS LIST

Rated voltage (S.V.)	Cap (μF)	Size Code DxL	Leakage current (μA) max.	ESR (mΩ) max. 100k to 300kHz / 20°C	Rated Ripple Current (mA rms) 100kHz / 105°C	D.F. (tanδ) max. 120Hz / 20°C
16 (20)	120	6.3×7.2	19	40	1,500	0.16
	270	8×9.5	43	26	2,000	0.16
	470	10×9.5	75	21	2,600	0.16
	560	10×11.5	90	15	3,000	0.16
25 (32)	68	6.3×7.2	17	45	1,400	0.16
	150	8×9.5	38	27	1,900	0.16
	270	10×9.5	68	22	2,500	0.16
	330	10×11.5	83	16	2,900	0.16
35 (44)	47	6.3×7.2	16	60	1,300	0.16
	100	8×9.5	35	30	1,800	0.16
	150	10×9.5	53	23	2,400	0.16
	220	10×11.5	77	17	2,800	0.16
40 (50)	27	6.3×7.2	11	70	1,200	0.16
	56	8×9.5	22	32	1,700	0.16
	100	10×9.5	40	24	2,400	0.16
	120	10×11.5	48	18	2,700	0.16
50 (63)	15	6.3×7.2	8	80	1,200	0.16
	33	8×9.5	17	35	1,600	0.16
	56	10×9.5	28	25	2,300	0.16
	82	10×11.5	41	19	2,600	0.16
63 (79)	10	6.3×7.2	6	100	1,000	0.16
	22	8×9.5	14	40	1,500	0.16
	33	8×9.5	21	40	1,500	0.16
		10×9.5	21	30	2,100	0.16
	47	10×9.5	30	30	2,100	0.16
	56	10×11.5	35	22	2,400	0.16
80 (100)	12	10×9.5	10	70	1,600	0.16
	15	10×9.5	12	70	1,600	0.16
	18	10×11.5	14	50	1,800	0.16
100 (125)	10	10×9.5	10	80	1,400	0.16
	12	10×9.5	12	80	1,400	0.16
	15	10×11.5	15	60	1,600	0.16
125 (157)	10	10×9.5	13	90	1,200	0.16

Frequency Coefficient of Permissible Ripple Current

Capacitance (μF)	Frequency (Hz)			
	100 ≤ F < 1K	1K ≤ F < 10K	10K ≤ F < 100K	100K ≤ F
4.7 < C ≤ 33	0.05	0.32	0.67	1.00
33 < C	0.10	0.35	0.70	1.00

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