

HP Series

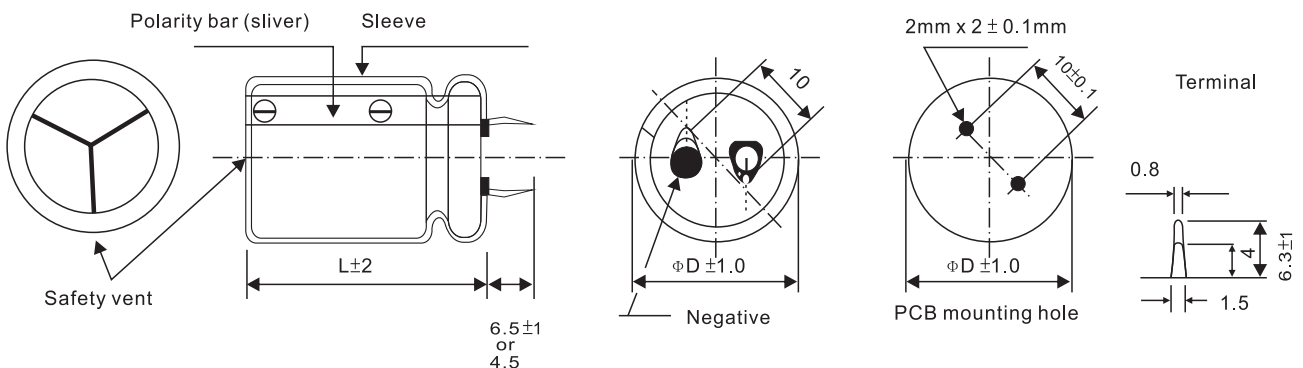
- Standard series General purples
- Endurance:105°C 1000 hours (紋波疊加)



• SPECIFICATIONS

Items	Characteristics																																											
Category	- 40 to +105°C	- 25 to +105°C																																										
Temperature Range																																												
Rated Voltage Range	10 to 100 Vdc	160 to 450 Vdc																																										
Capacitance Tolerance	± 20% (M) (at 20°C ,120Hz)																																											
Leakage Current	I=0.02CV, (3mA max)whichever is greater. (at 20°C, after 2 minutes) Where, I :Max. Leakage current (µA). C : Nominal capacitance (µF) .V :Rated voltage(V)																																											
Dissipation Factor (tan δ)	<table border="1"> <tr> <td>Rated voltage (Vdc)</td> <td>10v</td><td>16v</td><td>25v</td><td>35v</td><td>50v</td><td>63v</td><td>80v</td><td>100v</td><td>160v</td><td>200v</td><td>250v</td><td>400v</td><td>450v</td> </tr> <tr> <td>tan δ (Max.)</td> <td>0.55</td><td>0.50</td><td>0.45</td><td>0.40</td><td>0.35</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.15</td><td>0.15</td><td>0.15</td><td>0.15</td><td>0.15</td> </tr> </table> (at 20°C ,120Hz)		Rated voltage (Vdc)	10v	16v	25v	35v	50v	63v	80v	100v	160v	200v	250v	400v	450v	tan δ (Max.)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.15	0.15	0.15														
Rated voltage (Vdc)	10v	16v	25v	35v	50v	63v	80v	100v	160v	200v	250v	400v	450v																															
tan δ (Max.)	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.15	0.15	0.15	0.15																															
Low Temperature Characteristics	Impedance ration max at 120Hz <table border="1"> <tr> <td>Working voltage</td> <td>10</td><td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>80</td><td>100</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400~450</td> </tr> <tr> <td>Z-25°C/ Z+20°C</td> <td>5</td><td>5</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>4</td><td>8</td><td>8</td> </tr> <tr> <td>Z-40°C/ Z+20°C</td> <td>15</td><td>15</td><td>10</td><td>8</td><td>6</td><td>5</td><td>4</td><td>4</td><td>8</td><td>10</td><td></td><td></td><td></td> </tr> </table>		Working voltage	10	16	25	35	50	63	80	100	160	200	250	350	400~450	Z-25°C/ Z+20°C	5	5	4	4	4	4	4	4	4	4	4	8	8	Z-40°C/ Z+20°C	15	15	10	8	6	5	4	4	8	10			
Working voltage	10	16	25	35	50	63	80	100	160	200	250	350	400~450																															
Z-25°C/ Z+20°C	5	5	4	4	4	4	4	4	4	4	4	8	8																															
Z-40°C/ Z+20°C	15	15	10	8	6	5	4	4	8	10																																		
Load. Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the voltage is applied for 1000 hours at 105°C <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tan δ)</td> <td>≤200 % of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>		Capacitance change	≤ ±20% of the initial value	DF (tan δ)	≤200 % of the initial specified value	Leakage current	≤The initial specified value																																				
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Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing for 500 hours at 105°C without voltage applied. <table border="1"> <tr> <td>Capacitance change</td> <td>≤ ±20% of the initial value</td> </tr> <tr> <td>DF (tan δ)</td> <td>≤200 % of the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤The initial specified value</td> </tr> </table>		Capacitance change	≤ ±20% of the initial value	DF (tan δ)	≤200 % of the initial specified value	Leakage current	≤The initial specified value																																				
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• Diagram: (Unit: mm)



Chip Type SMD

Miniature Type

General Purpose

High Frequency Low Impedance

High Voltage High Reliability

Non-polar Type

Large Size Snap-in

Large Size Screw

X Metallized Polypropylene Film Capacitors

• STANDARD RATING

CAP(μF)	Vdc		10v				16v							
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ						
6800														
8200						22*25	2.56							
10000						22*30	2.81							
12000	22*25	2.41				22*30	3.31	25*25	2.96					
15000	22*30	2.88	25*25	2.88		22*35	3.69	25*30	3.64	30*25	3.73			
18000	22*35	3.22	25*30	3.08		22*40	3.98	25*35	3.98	30*30	3.88			
22000	22*40	3.79	25*30	3.66	30*25	3.53		22*50	4.52	25*40	4.44	30*30	4.38	
27000	22*45	4.04	25*35	4.04	30*30	3.99			25*45	4.98	30*35	4.82	35*30	4.82
33000	22*50	4.58	25*40	4.56	30*30	4.58			25*50	5.49	30*40	5.38	35*35	5.33
39000			25*45	5.29	30*35	5.21	35*30	5.05			30*45	6.11	35*35	6.01
47000			25*50	5.78	30*40	5.78	35*35	5.55			30*50	6.80	35*40	6.80
56000					30*45	6.59	35*35	6.40					35*45	7.62
68000					30*50	7.50	35*40	7.48						
82000							35*50	8.50						

CAP(μF)	Vdc		25v				35v						
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ					
2700													
3300													
3900						22*25	2.22						
4700						22*30	2.46	25*25	2.43				
5600	22*25	2.31				22*35	2.79	25*30	2.75				
6800	22*30	2.56				22*40	2.89	25*30	2.89	30*25	3.09		
8200	22*35	2.81	25*25	2.78		22*45	3.47	25*35	3.33	30*30	3.29		
10000	22*35	3.18	25*30	3.16		22*50	3.59	25*40	3.59	30*30	3.61		
12000	22*40	3.53	25*35	3.48	30*25	3.53		25*45	4.01	30*35	4.01	35*30	4.02
15000	22*50	4.08	25*40	4.00	30*30	4.00				30*40	4.80	35*35	4.80
18000			25*45	4.68	30*35	4.66	35*30	4.68		30*45	5.18	35*40	5.71
22000					30*40	5.19	35*35	5.20				35*45	6.38
27000					30*45	6.02	35*40	6.02				35*50	6.90

CAP(μF)	Vdc		50v				63v							
	22φ	25φ	30φ	35φ	22φ	25φ	30φ	35φ						
1500														
1800						22*25	1.90							
2200	22*25	1.93				22*30	2.35	25*25	2.30					
2700	22*30	2.21				22*35	2.50	25*30	2.49					
3300	22*30	2.41	25*25	2.38		22*40	2.69	25*30	2.69	30*25	2.78			
3900	22*35	2.72	25*30	2.68		22*45	3.10	25*40	3.25	30*30	3.09			
4700	22*40	3.01	25*30	3.03	30*25	3.01		22*50	3.49	25*40	3.37	30*30	3.37	
5600	22*45	3.43	25*35	3.37	30*30	3.43			25*45	3.80	30*35	3.81	35*30	3.75
6800	22*50	3.94	25*40	3.87	30*35	3.87			25*50	4.41	30*40	4.41	35*35	4.33
8200			25*45	4.37	30*35	4.41	35*30	4.41			30*45	4.90	35*35	4.80
10000					30*40	5.02	35*35	4.92			30*50	5.49	35*40	5.47
12000					30*50	5.60	35*40	5.60					35*50	6.30
15000							35*45	6.44						

Max ripple current (Arms/120Hz 105°C)

◆ LARGE ALUMINUM ELECTROLYTIC CAPACITORS HP Snap-in 105°C

Vdc CAP(μF)	80v								100v							
	22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
680																
820									22*25	1.86						
1000									22*30	2.02						
1200	22*25	1.77							22*30	2.12	25*25	2.10				
1500	22*30	2.01							22*35	2.45	25*30	2.43				
1800	22*35	2.25	25*25	2.26					22*40	2.77	25*35	2.77	30*25	2.65		
2200	22*40	2.53	25*30	2.53	30*25	2.50			22*45	3.12	25*40	3.20	30*30	3.10		
2700	22*45	2.93	25*35	2.93	30*30	2.91					25*45	3.61	30*35	3.60	35*30	3.71
3300	22*50	3.25	25*40	3.25	30*30	3.23					25*50	4.06	30*40	4.05	35*35	4.07
3900			25*45	3.62	30*35	3.62							30*45	4.60	35*35	4.50
4700			25*50	4.28	30*40	4.15	35*30	4.10					30*50	5.13	35*40	5.12
5600					30*45	4.55	35*35	4.51							35*55	5.17
6800					30*50	5.18	35*40	5.14							35*55	6.01
8200							35*45	5.83								

Vdc CAP(μF)	160v								200v							
	22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
180									22*25	0.98						
220									22*30	1.36						
270									22*30	1.50						
330									22*35	1.89	25*30	1.89				
390	22*25	1.55							22*35	1.92	25*30	1.92				
470	22*30	1.77	25*25	1.77					22*40	2.23	25*35	2.23	30*25	2.23		
560	22*35	2.05	25*30	2.05					22*45	2.57	25*40	2.57	30*30	2.57		
680	22*40	2.24	25*30	2.22	30*25	2.22			22*45	2.36	25*30 25*40	2.15 2.36	30*30	2.36		
820	22*45	2.55	25*35	2.52	30*30	2.51			22*50	2.68	25*40	2.66	30*35	2.62		
1000	22*50	2.88	25*40	2.86	30*30	2.82			22*50	3.10	25*45	3.12	30*35	3.00		
1200			25*45	3.27	30*35	3.25	35*30	3.24			25*45	3.25	30*45	3.44		
1500					30*40	3.77	35*35	3.75			25*50	3.65	30*50	3.93		
1800					30*45	4.10	35*35	4.08							35*45	4.37
2200							35*45	4.72							35*50	5.00

Vdc CAP(μF)	250v								350v							
	22φ		25φ		30φ		35φ		22φ		25φ		30φ		35φ	
120									22*25	0.99						
150									22*30	1.44	25*25	1.16				
180									22*35	1.28	25*30	1.30				
220	22*25	1.18							22*40	1.40	25*35	1.46				
270	22*30	1.43							22*45	1.62	25*35	1.65	30*30	1.71		
330	22*40	1.58	25*25	1.53					22*50	1.78	25*40	1.88	30*35	1.93		
390	22*40	1.79	25*30	1.79							25*45	2.04	30*35	2.12	35*30	2.19
470	22*45	2.05	25*35	2.05	30*25	1.94							30*40	2.41	35*35	2.43
560	22*45	2.36	25*35	2.24	30*30	2.24							30*45	2.60	35*35	2.62
680			25*40	2.54	30*35	2.58									35*40	3.00
820			25*50	2.87	30*35	2.84	35*30	2.82							35*50	3.30

Max ripple current (Arms/120Hz 105°C)

Chip Type SMD

Miniature Type

General Purpose

High Frequency Low Impedance

High Voltage High Reliability

Non-polar Type

Large Size Snap-in

Large Size Screw

X Metallized Polypropylene Film Capacitors

◆ LARGE ALUMINUM ELECTROLYTIC CAPACITORS HP Snap-in 105°C

CAP(μF)	400v								450v							
	22 φ		25 φ		30 φ		35 φ		22 φ		25 φ		30 φ		35 φ	
47	22*25	0.42							22*25	0.36						
56	22*25	0.47							22*25	0.47						
68	22*25	0.51							22*25	0.68						
82	22*25	0.80							22*30	0.82						
100	22*30	0.94	25*25	0.94					22*35	0.90	25*25	0.92				
120	22*30	1.04	25*25	1.08					22*35	1.02	25*30	1.04	30*25	1.07		
150	22*35	1.18	25*30	1.21					22*40	1.12	25*35	1.19	30*30	1.23		
180	22*40	1.34	25*35	1.37	30*25	1.45			22*50	1.26	25*40	1.33	30*30	1.38		
220	22*50	1.50	25*35	1.56	30*30	1.58					25*45	1.51	30*35	1.56	35*30	1.58
270			25*40	1.70	30*35	1.73					25*50	1.65	30*40	1.80	35*35	1.81
330			25*50	1.90	30*40	1.95	35*30	1.95					30*45	2.02	35*35	2.05
390					30*45	2.15	35*35	2.17					30*50	2.24	35*40	2.27
470					30*50	2.26	35*40	2.42							35*45	2.55
560							35*45	2.71								
680							35*50	2.95								

Max ripple current:Arms/120Hz 105°C Size: D φ x L (mm)

● Ripple CurRent / Frequency Multiplier

Vdc \ Freq	60	120	1k	10k up
10~100v	0.9	1.00	1.15	1.25
160~250v	0.8	1.00	1.15	1.45
350v up	0.8	1.00	1.15	1.47

● Temperature coefficient

Temperature(°C)	~55	60	70	85	105
Factor	2.23	2.27	2.0	1.75	1.00