

## HP series

### +105°C,PCB Snap-in Terminal Type(基板自立型大容量品)

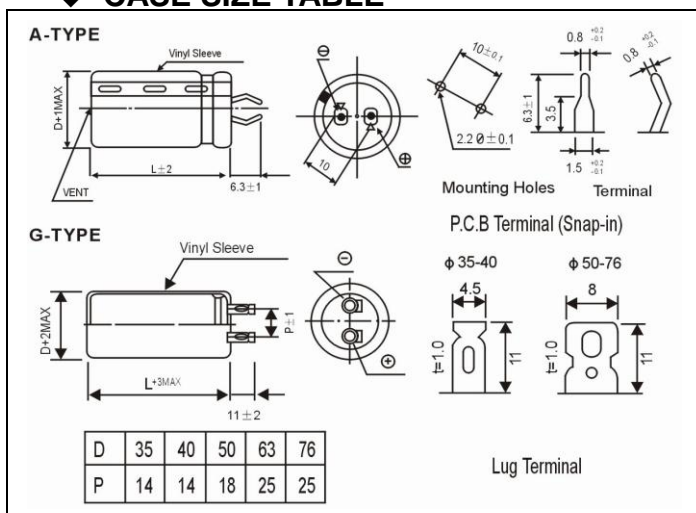
#### ◆ FEATURES

- Highly reliable capacitors that with stand under high ripple current
- Two or three dimensions with same ratings
- Aluminum case designed explosion-proof vent.
- Best for switching power supplies

#### ◆ SPECIFICATIONS

Items	Characteristics										
Category Temperature Range	-40°C~+105°C						-25°C~+105°C				
Rated Voltage Range	6.3~100V.DC						160~450 V.DC				
Nominal Capacitance Range	68~82000μ F										
Capacitance Tolerance	±20%(120Hz,+20°C)										
Leakage Current(MAX)	I=3√CV (uA) after 5 minutes application of rated working voltage at 20°C										
Dissipation Factor(MAX) Tanδ (20°C,120Hz)	Rated Voltage(V)	~10	16	25	35	50	63	80	100	160~250	350~450
	Tanδ	0.55	0.50	0.45	0.40	0.35	0.30	0.25	0.20	0.15	0.20
Load Life	After applying rated voltage with max ripple current for 2000hrs at 105°C,the capacitors shall meet the following requirements										
	Capacitance Change	Within ±20% of the initial value									
	Dissipation Factor	Not more than 200% of the specified value									
Shelf Life	After Leaving capacitors under no load at 105°C for 1000hrs,they meet the characteristic requirements listed at right										
	Capacitance change	Within ±20% of the initial value									
	Tanδ	≤200% of initial specified value									
Low Temperature Stability Impedance Rate(MAX)	Rated Voltage(V)	6.3~100			160~250			400~450			
	Z-25°C/Z+20°C	4			3			8			
	Z-40°C/Z+20°C	15			15			---			
Other	JISC-5141 EIAJ RC-2372										

#### ◆ CASE SIZE TABLE



#### ◆ RIPPLE CURRENT MULTIPLIER

- 1)Maximum rms ripple current at 120Hz,105°C are given in the table
- 2)Temperature multiplying factor:  
where capacitors are operated at temperature other than 105°C,the maximum ripple current must be multiplied by the figure shown in the table below.

- Frequency coefficient

WV(V)	Frequency(Hz)			
	60	120	1k	10~50k
~100	0.9	1.0	1.15	1.25
160~	0.8	1.0	0.94	1.47

## ◆ STANDARD RATINGS

size:ΦD×L(mm)

Voltage(code)	ΦD	6.3(OJ)				10(1A)				16(1C)				
		Φ 22	Φ 25	Φ 30	Φ 35	Φ 22	Φ 25	Φ 30	Φ 35	Φ 22	Φ 25	Φ 30	Φ 35	
Cap(μF)	Code													
8200	828										22×25			
											2.56			
10000	109										22×30			
											2.81			
12000	129					22×25				22×30	25×25			
						2.41				3.13	2.96			
15000	159	22×25				22×30	25×25			22×35	25×30	30×25		
		2.44				2.88	2.88			3.69	3.64	3.73		
18000	189	22×30	25×25			22×35	25×30			22×40	25×35	30×30		
		2.67	2.70			3.22	3.08			3.98	3.98	3.88		
22000	229	22×30	25×25			22×40	25×30	30×25		22×50	25×40	30×30		
		3.06	3.07			3.79	3.66	3.53		4.52	4.44	4.38		
27000	279	22×35	25×30	30×25		22×25	25×35	30×30			25×45	30×35	35×30	
		3.49	3.52	3.57		4.04	4.04	3.99			4.98	4.82	4.82	
33000	339	22×40	25×35	30×25		22×50	25×40	30×30			25×50	30×40	35×35	
		3.97	4.02	3.95		4.58	4.56	4.58			5.49	5.38	5.33	
39000	399	22×50	25×40	30×30	35×25		25×45	30×35	35×30			30×45	35×35	
		4.55	4.50	4.45	4.51		5.29	5.21	5.50			6.11	6.01	
47000	479		25×45	30×35	35×30		25×50	30×40	35×35			30×50	35×40	
			5.09	5.06	5.01		5.78	5.78	5.55			6.80	6.80	
56000	569		25×50	30×40	35×30			30×45	35×35				35×45	
			5.71	5.70	5.77			6.59	6.40				7.62	
68000	689			30×45	35×35			30×50	35×40					
				6.48	6.42			7.50	7.48					
82000	829			30×50	35×40				35×50					
				7.32	7.29				8.50					
100000					D×L	←Upper:Case sizeΦD×L(mm)								
					R.C	←Lower:Ripple Current (Arms) at 105℃ 120Hz								

## ◆ STANDARD RATINGS

Voltage(code) Cap(μF) Code		25(1E)				35(1V)				50(1H)			
		Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35
2200	228									22×25			
										1.93			
2700	278									22×30			
										2.21			
3300	338									22×30	25×25		
										2.41	2.38		
3900	398					22×25				22×35	25×30		
						2.22				2.72	2.68		
4700	478					22×30	25×25			22×40	25×30	30×25	
						2.46	2.43			3.01	3.03	3.01	
5600	568	22×25				22×35	25×30			22×45	25×35	30×30	
		2.31				2.79	2.75			3.43	3.37	3.43	
6800	688	22×30				22×40	25×30	30×25		22×50	25×40	30×35	
		2.56				2.89	2.89	3.09		3.94	3.87	3.87	
8200	828	22×35	25×25			22×45	25×35	30×30			25×45	30×35	35×30
		2.81	2.78			3.47	3.33	3.29			4.37	4.42	4.41
10000	109	22×35	25×30			22×50	25×40	30×30				30×45	35×35
		3.18	3.16			3.59	3.59	3.61				5.02	4.92
12000	129	22×40	25×35	30×25			25×45	30×35	35×30			30×50	35×40
		3.53	3.48	3.53			4.01	4.01	4.02			5.60	5.60
15000	159	22×50	25×40	30×30				30×40	35×35				35×45
		4.08	4.00	4.00				4.80	4.08				6.44
18000	189		25×45	30×35	35×30			30×45	35×40				35×50
			4.68	4.66	4.68			5.18	5.71				6.71
22000	229			30×40	35×35				35×45				
				5.19	5.20				6.38				
27000	279			30×45	35×40				35×50				
				6.02	6.02				6.90				
33000	339				35×45								
					6.75								
39000	399				35×50								
					7.56								

← Upper: Case size ΦD×L(mm)

← Lower: Ripple Current (Arms) at 105℃ 120Hz

## ◆ STANDARD RATINGS

Voltage(code) Cap(μF) Code		63(1J)				80(1K)				100(2A)			
		Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35
820	827									22×25			
										1.86			
1000	108									22×30			
										2.02			
1200	128					22×25				22×30	25×25		
						1.77				2.12	2.10		
1500	158					22×30				22×35	25×30		
						2.01				2.45	2.43		
1800	188	22×25				22×35	25×25			22×40	25×35	30×25	
		1.90				2.25	2.26			2.77	2.77	2.65	
2200	228	22×30	25×25			22×40	25×30	30×25		22×45	25×40	30×30	
		2.35	2.30			2.53	2.53	2.50		3.12	3.20	3.10	
2700	278	22×35	25×30			22×45	25×35	30×30			25×45	30×35	35×30
		2.50	2.49			2.93	2.93	2.91			3.61	3.60	3.71
3300	338	22×40	25×30	30×25		22×50	25×40	30×30			25×50	30×40	35×35
		2.69	2.69	2.78		3.25	3.25	3.23			4.06	4.05	4.07
3900	398	22×45	25×35	30×30			25×45	30×35				30×45	35×35
		3.10	3.09	3.09			3.62	3.62				4.60	4.50
4700	478	22×50	25×40	30×30			25×50	30×40	35×30			30×50	35×40
		3.49	3.37	3.37			4.28	4.15	4.10			5.13	5.12
5600	568		25×45	30×35	35×30			30×45	35×35				35×45
			3.80	3.81	3.75			4.55	4.51				5.75
6800	688		25×50	30×40	35×35			30×50	35×40				35×50
			4.41	4.41	4.33			5.18	5.14				6.01
8200	828			30×45	35×35				35×45				
				4.90	4.80				5.83				
10000	109			30×50	35×40				35×50				
				5.49	5.47				6.51				
12000	129				35×50								
					6.30								

←Upper:Case sizeΦD×L(mm)

←Lower:Ripple Current (Arms) at 105℃ 120Hz

## ◆ STANDARD RATINGS

Voltage(code) Cap(μF) Code		160(2C)				200(2D)				250(2E)			
		Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35
220	227									22×25			
										1.18			
270	277					22×25				22×30			
						1.30				1.43			
330	337					22×25				22×30	25×25		
						1.44				1.58	1.53		
390	397	22×25				22×30	25×25			22×35	25×30		
		1.55				1.65	1.63			1.79	1.79		
470	477	22×30	25×25			22×35	25×30			22×40	25×35		
		1.77	1.77			1.88	1.86			2.05	2.05		
560	567	22×35	25×30			22×40	25×30	30×25		22×45	25×35	30×25	
		2.05	2.05			2.08	2.05	2.05		2.36	2.24	2.05	
680	687	22×40	25×30	30×25		22×45	25×35	30×30			25×40	30×30	
		2.24	2.22	2.22		2.36	2.36	2.36			2.54	2.36	
820	827	22×45	25×35	30×30		22×50	25×40	30×30			25×50	30×30	
		2.55	2.52	2.51		2.68	2.66	2.62			2.87	2.62	
1000	108	22×50	25×40	30×30			25×45	30×35	35×30			30×35	35×30
		2.88	2.86	2.82			3.12	3.00	2.96			3.00	2.82
1200	128		25×45	30×35	35×30		25×50	30×40	35×35			30×40	35×35
			3.27	3.25	3.24		3.44	3.44	3.40			3.44	3.31
1500	158			30×40	35×35			30×50	35×40			30×50	35×40
				3.77	3.75			3.93	3.87			3.93	3.66
1800	188			30×45	35×35				35×45				35×45
				4.10	4.08				4.37				4.12
2200	228				35×45				35×50				35×50
					4.72				5.00				4.31
2700	278				35×50	←Upper:Case sizeΦD×L(mm)							
					5.30	←Lower:Ripple Current (Arms) at 105℃ 120Hz							

## ◆ STANDARD RATINGS

Voltage(code) Cap(μF) Code		350(2V)				400(2G)				450(2W)			
		Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35	Φ22	Φ25	Φ30	Φ35
68	686									22×25			
										0.68			
82	826					22×25				22×30			
						0.80				0.82			
100	107					22×30				22×35	25×25		
						0.94				0.90	0.92		
120	127	22×25				22×30	25×25			22×35	25×30	30×25	
		0.99				1.04	1.08			1.02	1.04	1.07	
150	157	22×30	25×25			22×35	25×30			22×40	25×35	30×30	
		1.14	1.16			1.18	1.21			1.12	1.19	1.23	
180	187	22×35	25×30			22×40	25×35	30×25		22×50	25×40	30×30	
		1.28	1.30			1.34	1.37	1.45		1.26	1.33	1.38	
220	227	22×40	25×35	30×25		22×45	25×35	30×30			25×45	30×35	35×30
		1.40	1.46	1.47		1.50	1.56	1.58			1.51	1.56	1.58
270	277	22×45	25×35	30×30			25×40	30×35			25×50	30×40	35×35
		1.62	1.65	1.71			1.70	1.73			1.65	1.80	1.81
330	337	22×50	25×40	30×35			25×50	30×40	35×30			30×45	35×35
		1.78	1.88	1.93			1.90	1.95	1.95			2.02	2.05
390	397		25×45	30×35	35×30			30×40	35×35			30×50	35×40
			2.04	2.12	2.19				2.15	2.17			2.24
470	477			30×40	35×35			30×50	35×40				35×45
				2.41	2.43				2.39	2.42			
560	567			30×45	35×35				35×45				
				2.60	2.62				2.71				
680	687				35×40				35×50				
					3.00				2.95				
820	827				35×50	←Upper:Case sizeΦD×L(mm)							
					3.30	←Lower:Ripple Current (Arms) at 105℃ 120Hz							