

## HP Series Snap-in Type 105°C



### Features

- ◆ Highly reliable capacitors that with high ripple current.
- ◆ Terminal spacing fixed at 10 mm for printed circuit board plug in.
- ◆ Aluminum case designed explosion-proof vent.
- ◆ Best for switching power supplies.
- ◆ RoHS Compliant

### Specifications

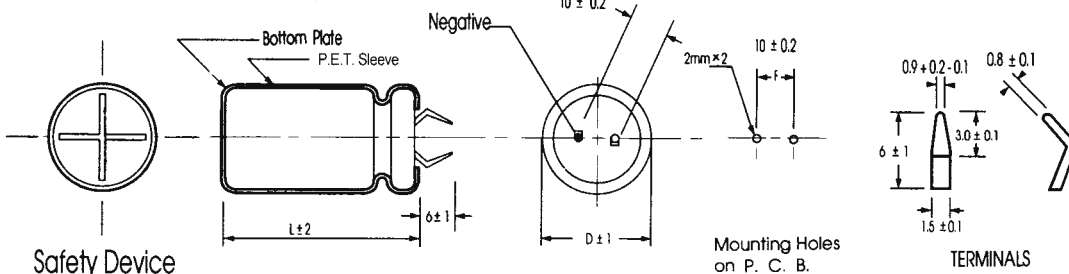
Item	Performance Characteristics										
Operating Temperature Range	-40 to +105°C	-25 to +105°C									
Rated Voltage Range	10 to 100 VDC	160 to 450 VDC									
Capacitance Range	330 to 68000 µ F	33 to 2200 µ F									
Capacitance Tolerance	± 20% (120Hz, +20°C)										
Leakage Current (+20°C, max.)	I ≤ 0.02CV After 5 minutes with rated working voltage applied.										
Dissipation Factor (tan δ , at 20°C , 120Hz)	Less than the value under table (%)										
	µ F \ VDC	10~16	25~35	50~63	80~100	160~250	315~450				
	47~390	—	—	—	15	15	20				
	470~3900	25	20	20	20	15	20				
	4700~8200	35	30	30	25	—	—				
	10000~22000	40	35	30	—	—	—				
	27000~47000	45	40	35	—	—	—				
Low Temperature Characteristics (at 120Hz)	Impedance ratio max.										
	Rated voltage(V)	10	16	25	35	50	63	100	160	200~250	400~450
	Z - 25°C / Z+20°C	5	5	4	4	4	4	4	4	4	8
Endurance	Test conditions										
	Duration time	:2000 Hrs									
	Ambient temperature	:+105°C									
	Applied voltage	:Rated DC working voltage									
	After test requirement at +20°C										
	Capacitance change	:≤ ±20% of the initial measured value									
Dissipation factor	:≤ 200% of the initial specified value										
Leakage current	:≤ The initial specified value										
Shelf Life	Test conditions										
	Duration time	:1000 Hrs									
	Ambient temperature	:+105°C									
	Applied voltage	:None									
	After test requirement at +20°C	: Same limits as Endurance.									
Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.											

### Multiplier for Ripple Current vs. Frequency

CAP(µ F) \ Frequency(Hz)	50(60)	120	400	1K	10K	50K-100K
10 < CAP ≤ 100	0.8	1	1.23	1.36	1.48	1.53
100 < CAP ≤ 1000	0.8	1	1.16	1.25	1.35	1.38
1000 < CAP	0.8	1	1.11	1.17	1.25	1.28

### Diagram of Dimensions:(unit:mm)

SYMBOL G : P.C.B. TERMINAL (SNAP-IN)



## Case Size

$\phi$  DxL (mm)

WV Cap ( $\mu$ F) $\phi$ D	10								16							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
3300									22x26	1.17						
4700	22x26	1.24							22x26	1.53	25x26	1.55				
									22x31	1.65						
6800	22x26	1.56	25x26	1.56					22x31	2.02	25x26	2.02	30x26	2.02		
8200	22x26	2.04	25x26	2.04					22x31	2.20						
10000	22x31	2.20	25x26	2.20	30x26	2.20			22x31	2.79	25x26	2.79	30x26	2.81		
									22x36	2.97	25x31	2.97				
12000	22x31	2.34							22x36	3.06	25x31	3.06	30x26	3.06		
	22x36	2.49	25x26	2.40												
15000	22x36	2.76	25x26	2.60	30x26	2.80			22x41	3.24	25x36	3.24	30x26	3.24	35x32	3.24
			25x31	2.76							25x41	3.42				
18000	22x36	2.94	25x31	2.94					22x51	3.51	25x46	3.51	30x36	3.51	35x32	3.54
22000	22x41	3.12	25x36	3.12	30x26	3.08	35x27	3.20			25x46	4.08	30x36	4.08	35x32	4.08
					30x31	3.30					25x51	4.25				
27000	22x46	3.48	25x36	3.48	30x31	3.48	35x27	3.48			25x51	4.30	30x41	4.30	35x32	4.30
			25x46	3.72	30x36	3.72	35x27	3.65					30x46	4.83	35x37	4.83
33000							35x32	3.85								
39000			25x51	4.10	30x41	4.10	35x32	4.10					30x51	5.78	35x42	5.78
47000					30x46	4.38	35x37	4.38							35x47	6.32
56000					30x51	4.64	35x42	4.64							35x52	7.05
68000							35x52	4.80								

WV Cap ( $\mu$ F) $\phi$ D	25								35							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
1500									22x26	1.26						
2200	22x26	1.03							22x26	1.35	25x26	1.45				
									22x31	1.45						
3300	22x26	1.48	25x26	1.48					22x26	1.80	25x26	1.90	30x26	1.92		
									22x31	1.90						
3900									22x31	2.23						
4700	22x26	1.88	25x26	1.90	30x26	1.92			22x36	2.42	25x26	2.30	30x26	2.54		
	22x31	1.92									25x31	2.44				
5600	22x31	2.25							22x36	2.89	25x31	2.89	30x26	2.89		
6800	22x31	2.60	25x26	2.60	30x26	2.60			22x41	3.24	25x36	3.24	30x26	3.21	35x27	3.24
													30x31	3.43		
8200	22x36	3.14	25x31	3.14	30x26	3.14			22x51	3.57	25x41	3.57	30x31	3.57	35x27	3.57
10000	22x41	3.50	25x36	3.50	30x31	3.50	35x27	3.50			25x46	3.96	30x36	3.96	35x27	3.75
															35x32	4.00
12000	22x46	4.02	25x41	4.02	30x31	4.02	35x27	4.02			25x51	4.21	30x41	4.21	35x32	4.21
15000			25x46	4.58	30x36	4.58	35x32	4.58					30x46	4.69	35x37	4.69
			25x51	4.82	30x41	4.82	35x32	4.79							35x42	5.07
18000							35x37	4.82								
22000					30x46	5.12	35x37	5.12							35x52	5.50
							35x42	5.30								
27000							35x47	5.47								
33000							35x52	6.09								

WV Cap ( $\mu$ F) $\phi$ D	50								63							
	22		25		30		35		22		25		30		35	
	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
680									22x26	0.70						
1000	22x26	0.84							22x26	0.85	25x26	0.85				
1200									22x26	0.98						
1500	22x26	1.10	25x26	1.12					22x26	1.10	25x26	1.12	30x26	1.14		
	22x31	1.12							22x31	1.15						
1800	22x26	1.50							22x31	1.40	25x26	1.40				
	22x331	1.62														
2200	22x31	1.65	25x26	1.65	30x26	1.65			22x36	1.65	25x31	1.65	30x26	1.65		
2700	22x31	1.85	25x26	1.85					22x41	2.07	25x36	2.07	30x26	2.07		
	22x36	1.97	25x31	1.98												
3300	22x36	2.24	25x31	2.24	30x26	2.24			22x46	2.46	25x36	2.40	30x31	2.48	35x27	2.48
									22x51	2.55	25x41	2.54				
3900	22x41	2.54	25x36	2.54	30x26	2.49					25x41	2.92	30x36	3.05	35x27	3.05
					30x31	2.66					25x46	3.07				
4700	22x46	2.95	25x36	2.80	30x31	2.95	35x27	2.95			25x51	3.43	30x41	3.43	35x32	3.43
			25x41	3.01												
5600	22x51	3.10	25x41	3.02	30x36	3.14	35x27	3.10					30x46	3.86	35x37	3.86
			25x46	3.15	30x41	3.20	35x32	3.20								
6800			25x46	3.23	30x41	3.26	35x32	3.26					30x51	4.64	35x42	4.64
			25x51	3.35												
8200					30x46	3.58	35x37	3.58							35x47	5.05
10000					30x51	4.11	35x42	4.11							35x52	5.75
12000							35x47	4.62								
15000							35x52	5.05								



φ DxL(mm)

Cap (μF)	φ D	400								420								
		22		25		30		35		22		25		30		35		
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	
33		22x26	0.39							22x26	0.32							
47		22x26	0.56	25x26	0.56					22x26	0.45	25x26	0.45					
56		22x26	0.63	25x26	0.68					22x26	0.52	25x26	0.52					
		22x31	0.68															
68		22x31	0.72	25x26	0.72	30x26	0.72			22x31	0.64	25x26	0.64	30x26	0.64			
82		22x31	0.77	25x31	0.82	30x26	0.85			22x31	0.75	25x31	0.75	30x26	0.75			
		22x36	0.82															
100		22x36	0.82	25x31	0.82	30x26	0.82			22x36	0.78	25x31	0.78	30x26	0.78			
120		22x36	0.90	25x31	0.90	30x26	0.90			22x36	0.84	25x36	0.84	30x26	0.84			
150		22x41	0.98	25x36	0.98	30x31	0.95	35x27	0.95	22x41	0.97	25x36	0.97	30x31	0.97			
180		22x46	1.14	25x41	1.14	30x36	1.14	35x32	1.14	22x46	1.02	25x41	1.02	30x36	1.02	35x27	1.02	
220				25x46	1.21	30x41	1.21	35x32	1.21			25x46	1.22	30x41	1.22	35x32	1.22	
270				25x51	1.40	30x46	1.40	35x37	1.40					30x46	1.50	35x37	1.50	
330						30x51	1.57	35x42	1.57						30x51	1.68	35x42	1.68
390								35x42	1.71								35x47	1.76
								35x47	1.79									
470								35x47	1.94								35x52	1.87
								35x52	2.03									
560								35x52	2.23									

Cap (μF)	φ D	450							
		22		25		30		35	
		Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
33		22x26	0.24						
47		22x31	0.35	25x26	0.35				
56		22x31	0.41	25x26	0.41				
68		22x36	0.55	25x31	0.55	30x26	0.55		
82		22x36	0.64	25x31	0.64	30x26	0.64		
100		22x41	0.74	25x31	0.74	30x31	0.74		
120		22x46	0.82	25x36	0.82	30x31	0.82		
150		22x51	0.96	25x41	0.96	30x36	0.96	35x27	0.96
180				25x46	1.14	30x36	1.10	35x32	1.14
						30x41	1.16		
220				25x46	1.24	30x41	1.24	35x37	1.24
						30x46	1.30		
270						30x51	1.48	35x42	1.48
330						30x51	1.64	35x47	1.64
390								35x52	1.86
470									
560									

Ripple Current (A, rms) at 105°C 120Hz