

# HP series

- 105°C 2000 hours~ 5000 hours. Screw terminal type.
- High temperature, high ripple current resistance and long life.
- RoHS Compliance
- 105°C 2000小時~5000小時 螺栓型端子。
- 耐高溫、高紋波電流、長壽命。



## SPECIFICATIONS

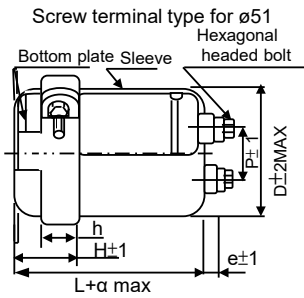
Items 項目	Characteristics 特性												
Capacitance Tolerance 靜電容量誤差	± 20%(120Hz,20°C)												
Operating Temperature Range 適用溫度範圍	- 40 ~ +105°C						- 25 ~ +105°C						
Rated Voltage Range 額定電壓範圍	10 ~ 100VDC						160 ~ 450VDC						
Rated Capacitance Range 容量範圍	220 ~ 1,000,000µF												
Leakage Current 洩漏電流	I ≤ 0.02CV ( µA) or 5mA, whichever is smaller. ( After 5 minutes application of DC rated voltage, at 20 °C)												
Dissipation Factor 散逸因素( tan δ)	Measurement Frequency: 120Hz. Temperature: 20°C												
	Rated Voltage(V)		10	16	25	35	50	63	80	100	160~250	350~450	
	tan δ (MAX)	35Φ	80~140	0.65	0.45	0.40	0.30	0.25	0.25	0.20	0.12	0.15	0.20
		51Φ	80~140	0.90	0.60	0.50	0.40	0.25	0.25	0.20	0.15	0.15	0.20
		64Φ	120~190	1.20	0.80	0.70	0.50	0.35	0.30	0.25	0.20	0.20	0.20
		76Φ	120~190	2.00	1.20	0.90	0.70	0.55	0.50	0.35	0.30	0.20	0.20
90Φ		150~190	2.40	2.00	1.50	1.00	0.75	0.60	0.40	0.30	0.25	0.20	
100Φ	220	2.00	2.00	1.50	1.00	0.75	0.60	0.40	0.30	0.25	0.20		
Low Temperature Stability 低溫特性	Measurement Frequency: 120Hz.												
Impedance Ratio(Max) 阻抗比率(最大值)	Rated Voltage(V)	10~100						160 ~ 525					
	Z(-25°C)/Z(20°C)	-						8					
	Z(-40°C)/Z(20°C)	12						-					
Load Life 負荷壽命	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 5,000 hours (10~250V,2000 hours) at 105°C.												
	Capacitance Change	Within ± 20% of Initial Value											
	tan δ	300% or less of Initial Specified Value											
	Leakage Current	Initial Specified Value or less											
Shelf Life 放置壽命	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours 105°C without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to them 4.1 of JIS C5101-4.												
	Capacitance Change	Within ± 20% of Initial Value											
	tan δ	300% or less of Initial Specified Value											
	Leakage Current	Initial Specified Value or less											
Standards 參照標準	IEC 60384-4 (JIS C 5101-4)												

## Frequency Coefficient of Permissible Ripple Current

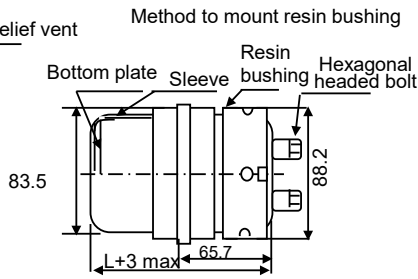
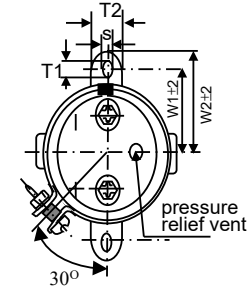
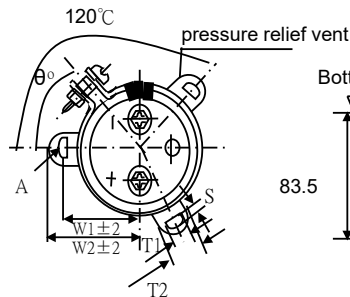
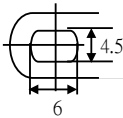
Rated Voltage (V)	Frequency (Hz)				
	50	120	300	1K	≥10K
10 ~ 100	0.90	1.00	1.06	1.10	1.20
160 ~ 250	0.80	1.00	1.12	1.22	1.30
350 ~ 525	0.80	1.00	1.20	-	-

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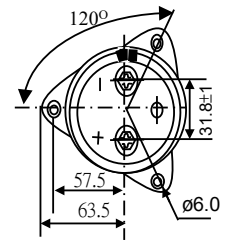
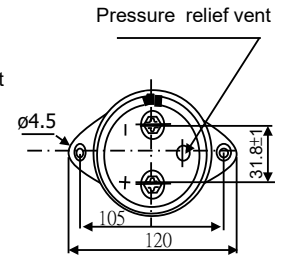
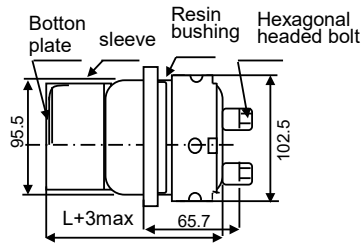
## DIMENSIONS(mm)



3-leg brackets for ø90 capacitors have different note shapes from the ordinary ones as illustrated



Method to mount resin bushing(ø76)



## TERMINAL PITCH(W) & LENGTH (e) TABLE

ΦD	P	e	α
35	12.7	6	3
51	22	6	3
64	28.6	6	3
76	31.8	6	3
90	31.8	6	3
100	41.5	10	4

## DIMENSIONS OF MOUNTING BRACKET

unit:mm

Cap (μF)	Leg shape ΦD	3-Legs					2-Legs				
		Φ51	Φ64	Φ76	Φ90	Φ100	Φ35	Φ51	Φ64	Φ76	Φ90
W1		31.8	38.1	44.5	50.8	57.5	24	34	40.5	46.5	54
W2		38.1	42.6	49.2	55.6	63.5	29	40	46.5	53	60
T1		7	7	7	7	8	6	7	7	7	7
T2		14	14	14	14	15	10	14	14	14	14
S		5	5	5	5	6	3.8	5	5	5	5
θ°		60	60	60	60	60	45	45	45	45	45
H		30	30	30	30	51.2	15	30	30	30	30
h		24	24	24	24	50	12	24	24	24	24

## STANDARD RATINGS

DxL(mm), R.C : (A rms) at 105°C 120 Hz

Cap (μF)	V Item	10		16		25		35		50	
		D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.
3900										35x50	2.00
4700										35x50	2.20
5600										35x80	2.80
6800										35x80	3.00
8200								35x80	3.00	35x80	3.30
10000								35x80	3.30	35x80	3.70
12000						35x80	3.30	35x80	3.60	35x100	4.40
15000				35x50	2.90	35x80	3.70	35x80	4.10	35x120	4.70
18000				35x80	3.50	35x80	4.00	35x100	4.80	51x80	4.80
22000				35x80	3.90	35x80	4.50	35x120	5.20	51x100	5.90
27000	35x80	4.30	35x80	4.30	35x100	5.00	51x80	5.90	51x120	7.00	
33000	35x80	4.70	35x100	4.80	35x120	5.90	51x100	6.60	64x100	7.60	
39000	35x80	5.30	35x100	5.30	51x80	6.50	51x120	7.80	64x120	8.90	

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## STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V	10		16		25		35		50	
		Item	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.	
47000		35x100	6.10	35x120	6.20	51x100	7.90	51x120	8.00	64x120	9.80
56000		35x100	6.20	51x80	6.30	51x120	8.80	64x100	9.20	76x120	11.9
68000		35x120	6.80	51x100	7.60	51x120	9.10	64x120	11.0	76x140	13.1
82000		51x80	7.80	51x120	8.30	64x100	10.6	76x120	12.7	90x140	14.8
100000		51x100	8.50	51x120	9.20	64x120	11.4	76x140	13.5	76x150	16.5
120000		51x100	9.50	64x100	9.90	76x100	12.8	90x140	16.1		
150000		64x100	11.0	76x100	12.3	76x120	13.7	76x150	15.0	90x150	19.5
180000		64x100	12.1	76x120	14.5	76x140	16.1				
220000		76x100	13.2	76x140	15.2	90x140	16.6	90x150	17.1	90x190	21.5
270000		76x120	14.4	90x140	16.8						
330000		76x140	17.0			90x150	20.2	90x190	21.0		
390000		90x140	18.6								
470000		90x140	16.0	90x140	20.2	90x190	22.0				
680000		90x170	18.0	90x170	22.0						
1000000		90x180	20.0	90x190	23.5						

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V	63		80		100		160		200	
		Item	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L
470										35x50	0.90
560										35x80	1.00
680								35x50	1.10	35x80	1.10
820								35x80	1.20	35x80	1.30
1000								35x80	1.30	35x100	1.50
1200						35x50	1.40	35x80	1.50	35x120	1.70
1500						35x80	1.60	35x80	1.70	35x120	1.90
1800						35x80	1.80	35x100	2.00	51x80	2.20
2200				35x50	1.90	35x80	2.00	35x120	2.30	51x100	2.70
2700		35x50	1.90	35x80	2.20	35x80	2.40	35x120	2.70	51x120	3.20
3300		35x50	2.10	35x80	2.50	35x100	2.80	51x100	3.30	51x120	3.50
3900		35x80	2.70	35x80	2.90	35x120	3.10	51x120	3.80	64x100	4.00
4700		35x80	2.90	35x100	3.10	51x80	3.60	51x120	4.20	64x120	4.70
5600		35x80	3.20	35x100	3.50	51x100	4.30	51x120	4.70	76x100	5.30
6800		35x80	3.50	35x120	4.10	51x120	5.00	64x120	5.70	76x120	6.30
8200		35x100	4.20	51x80	4.80	51x120	5.50	76x100	6.40	76x140	6.40
10000		35x120	4.30	51x100	5.60	64x100	6.40	76x120	6.60	90x140	7.70
12000		51x80	4.80	51x100	6.10	64x120	6.60	76x140	7.80		
15000		51x100	5.90	51x120	7.40	76x100	7.50	90x140	9.50	76x150	10.4
18000		51x120	6.30	64x120	8.00	76x120	8.00				
22000		51x120	6.70	76x100	9.10	76x140	9.40	76x150	12.5	90x150	15.1
27000		64x120	8.80	76x120	9.70	90x140	10.4				
33000		76x100	10.0	76x140	11.5			90x150	13.4		
39000		76x120	10.7	90x140	12.5						
47000		76x140	12.5	76x150	13.0	90x150	16.5				
56000		90x140	13.8								
68000		76x150	13.2	90x150	16.5	90x190	18.0				
100000		90x150	17.3	90x190	18.2						
150000		90x190	20.5								

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## STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V Item	250		350		400	
		D x L	R.C.	D x L	R.C.	D x L	R.C.
220						35x100	1.20
330		35x50	0.70	35x100	2.00	35x100	2.00
390		35x80	0.80				
470		35x80	0.90	35x100	2.40	35x120	3.00
560		35x80	1.00				
680		35x100	1.20	51x100	4.00	51x60	3.00
820		35x100	1.40	51x60	3.30		
1000		35x120	1.60				
1200		51x80	1.80			51x85	4.70
1500		51x100	2.20	51x85	5.20		
1800		51x120	2.60			51x105	6.30
2200		51x120	2.80	51x105	7.00	51x125	7.50
2200						64x85	7.30
2700		64x100	3.30	51x125	8.40	51x145	8.90
2700				64x85	8.10	64x105	8.80
3300		64x120	4.00	51x145	9.9	64x125	10.50
3300				64x105	9.8	76x85	9.90
3900		76x100	4.40	64x125	11.5		
3900				76x85	10.8		
4700		76x120	5.20			64x145	13.40
4700						76x125	13.90
5600		76x140	6.10	64x145	14.7		
6800		90x140	7.40	76x125	16.8	76x145	17.90
6800		76x150	7.10			90x125	17.20
8200				76x145	19.6	76x190	20.80
8200				90x125	18.9	90x145	20.10
10000		90x150	9.60	76x190	23		
10000				90x145	22.2		
12000						90x190	27.40
15000		90x190	12.70	90x190	30.6		
18000						90x270	39.40
22000				90x270	43.5		

DxL(mm), R.C : (A rms) at 105°C 120 Hz

Cap (μF)	V Item	450		500		525	
		D x L	R.C.	D x L	R.C.	D x L	R.C.
220		35x100	1.40				
330		35x120	2.00				
390						51x60	2.20
470		51x100	3.00	51x60	2.40		
560		51x60	2.60				
680						51x85	3.30
820				51x85	3.60		
1000		51x85	4.00	51x105	4.40	51x125	4.80
1200		51x105	4.80	51x125	5.20		
1200				64x85	5.00		
1500				51x145	6.30	64x105	6.20
1800		51x125	6.40	64x105	6.80	64x125	7.30
1800		64x85	6.20				
2200		51x145	7.60			64x145	8.60
2200		64x105	7.50			76x105	8.30
2700		64x125	8.90	64x145	9.60	76x125	9.90
2700		76x85	8.40	76x105	9.20		
3300		64x145	10.6			76x145	11.7
3300		76x105	10.2				
3900		76x125	11.9	76x145	12.70		
3900				90x125	11.90		
4700		76x145	14.0			76x190	14.4
4700						90x145	13.9
5600		90x125	14.2			90x190	17.1
6800		76x190	17.3	90x190	18.80		
6800		90x145	16.7				
10000		90x190	22.8	90x270	26.80		
15000		90x270	32.8				