

HP series

- 105°C 5000hours, Screw terminal type.
- High temperature, high ripple current resistance and long life.
- RoHS Compliance
- 105°C 5000小時螺絲型端子。
- 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	$I \leq 3\sqrt{CV}$ (µA) or 5mA, which is greater. (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)	35Ø	80~140	0.65	0.45	0.40	0.30	0.25	0.25	0.20	0.12	0.15	0.20
		51Ø	80~140	0.90	0.60	0.50	0.40	0.25	0.25	0.20	0.15	0.15	0.20
		64Ø	120~190	1.20	0.80	0.70	0.50	0.35	0.30	0.25	0.20	0.20	0.20
		76Ø	120~190	2.00	1.20	0.90	0.70	0.55	0.50	0.35	0.30	0.20	0.20
90Ø		150~190	2.40	2.00	1.50	1.00	0.75	0.60	0.40	0.30	0.25	0.20	
100Ø	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						160~450					
	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	JIS C 5101-4 (IEC 60384)												

Frequency Coefficient of Permissible Ripple Current

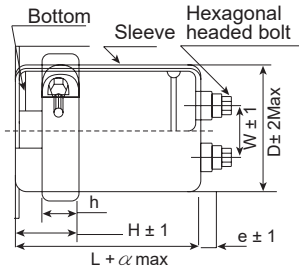
Rated Voltage (V)	Frequency (Hz)				
	60	120	360	1K	≥10K
10 ~ 100	0.90	1.00	1.08	1.15	1.15
160 ~ 250	0.88	1.00	1.08	1.15	1.20
350 ~ 450	0.82	1.00	1.20	1.35	1.40

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

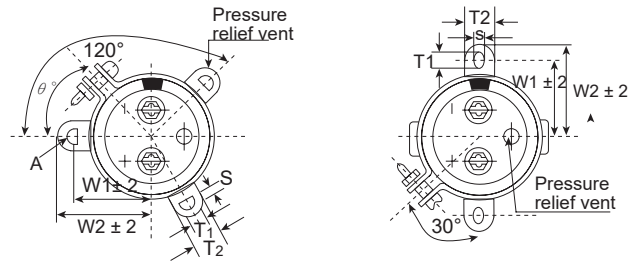
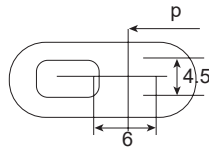
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DIMENSIONS(mm)

Screw terminal type for $\phi 51$ and larger

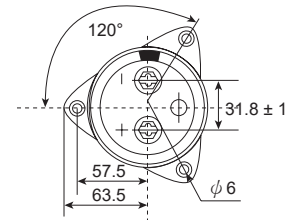
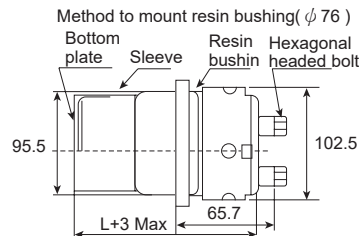
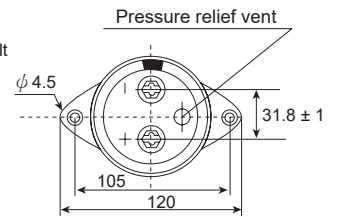
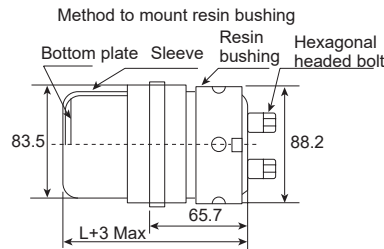


3-leg brackets for $\phi 90$ capacitors have different hole shapes from the ordinary ones as illustrated below.



TERMINAL PITCH(W) & LENGTH (e) TABLE

ϕD	W	e	α
35	12.7	/	3
51	22.0	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

Cap (μF)	Leg shape	3-Legs					2-Legs					
		ϕD	$\phi 51$	$\phi 64$	$\phi 76$	$\phi 90$	$\phi 100$	$\phi 35$	$\phi 51$	$\phi 64$	$\phi 76$	$\phi 90$
	W_1		32.5	38	44.5	50.8	56.3	24	33.2	40.5	46.5	53
	W_2		38.5	43	49.2	57	62	30	40	46.5	53	59
	T_1		7.5	8.0	7.0	7.0	8.0	6	6.0	6.0	6.0	6.0
	T_2		12	14	14	16	16	10	14	14	14	14
	S		5.0	5.0	5.0	5.0	5.0	3.5	4.5	4.5	4.5	4.5
	θ°		60	60	60	60	60	30	30	30	30	30
	H		20	25	30	35	36	16	25	35	35	35
	h		15	20	24	20	30	12	15	20	20	20

STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V	10		16		25		35	
		Item	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L
10000								35x100	4.3
15000								35x100	5.0
22000						35x100	4.4	35x120	5.2
33000		35x80	4.7	35x80	4.8	35x120	6.0	35x140	7.0
47000		35x100	6.0	35x100	6.0	51x100	8.0	51x120	8.0
68000		51x80	6.5	51x80	6.5	51x140	10.0	51x140	12.0
100000		51x100	8.2	51x100	9.0	64x120	11.0	64x140	13.2
150000		51x120	10.2	51x120	11.4	64x140	13.5	76x150	15.0
220000		64x120	13.0	64x120	14.5	76x150	16.5	90x150	17.1
330000		76x120	15.2	76x120	17.0	90x150	20.2	90x190	21.0
470000		90x140	16.0	90x140	20.2	90x190	22.0		
680000		90x170	18.0	90x170	22.0				
1000000		90x180	20.0	90x190	23.5				

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STANDARD RATINGS

D×L(mm) ; R.C.(A rms) at 105°C 120Hz

Cap (μF)	V	50		63		80		100	
		Item	D x L	R.C.	D x L	R.C.	D x L	R.C.	D x L
2200								35x100	2.0
3300								35x100	3.0
4700								35x120	3.4
6800								51x100	5.0
10000		35x100	4.5	35x120	4.5	51x100	5.0	51x120	6.2
15000		35x120	5.2	51x100	5.5	51x120	6.0	64x120	7.4
22000		51x100	6.0	51x120	6.5	64x120	8.0	76x120	9.5
33000		51x140	7.5	64x120	9.0	76x120	9.5	76x150	12.3
47000		64x120	9.5	64x140	11.0	76x150	13.0	90x150	16.5
68000		64x140	12.5	76x150	13.2	90x150	16.5	90x190	18.0
100000		76x150	16.5	90x150	17.3	90x190	18.2	100x220	20.2
150000		90x150	19.5	90x190	20.5	100x220	21.2		
220000		90x190	21.5	100x220	23.2				
330000		100x220	24.0						

Cap (μF)	V	160		200		250	
		Item	D x L	R.C.	D x L	R.C.	D x L
680						35x100	1.4
1000		35x100	1.6	35x100	1.7	35x120	1.9
1500		35x100	2.1	35x120	2.3	51x100	2.4
2200		35x120	2.7	51x100	2.9	51x120	3.2
3300		51x100	3.8	51x120	3.9	64x120	4.3
4700		51x120	4.5	64x120	5.1	64x140	5.9
6800		64x120	6.8	64x140	7.0	76x150	7.1
10000		64x150	7.8	76x150	8.2	90x150	9.6
15000		76x150	9.8	76x150	10.4	90x190	12.7
22000		76x150	12.5	90x150	15.1		
33000		90x150	13.4				

Cap (μF)	V	350		400		450	
		Item	D x L	R.C.	D x L	R.C.	D x L
220				35x100	1.2	35x100	1.4
330		35x100	2.0	35x100	2.0	35x120	2.0
470		35x100	2.4	35x120	3.0	51x100	3.0
680		51x100	4.0	51x100	4.0	51x120	4.0
1000		51x100	6.2	51x100	6.2	51x120	6.5
1500		51x120	8.2	51x140	9.0	51x140	9.0
2200		51x140	10.6	64x120	11.2	64x120	11.4
2700		64x120	12.2	64x120	13.0	64x140	13.4
3300		64x120	14.0	64x140	15.0	76x120	14.1
3900		64x140	16.4	64x170	17.5	64x170	16.2
4700		64x140	19.4	76x120	18.0	76x150	17.0
5600		76x150	22.0	64x190	20.3	64x190	18.0
6800		76x170	26.0	76x150	20.0	76x170	21.3
8200		76x170	30.0	76x170	23.3	76x190	26.0
10000		90x150	29.0	76x190	27.2	90x170	24.0
		90x170	32.0	90x170	26.5	90x190	28.0
				90x190	29.5		

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