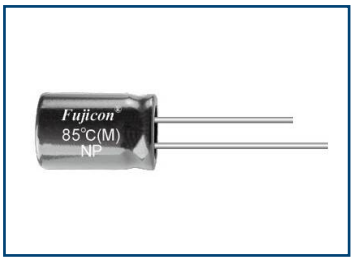
NP Series

NON-POLARIZED
無極性品



NP
Non-polarized

- Standard non-polarized series
  無極性標準型系列
- Designed for use in circuits with reversing polarity
  適用於極性變換電路
- Endurance 2000 hours at 85°C
  在 85°C 環境中耐久性 2000 小時
- Comply with the RoHS & REACH
  符合 RoHS 與 REACH

NP → Higher Temperature 寬溫化 → NK

☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性
Category Temperature Range 工作溫度範圍	-40 ~ +85°C
Voltage Range 額定工作電壓範圍	6.3 ~ 250V
Capacitance Range 靜電容量範圍	0.47 ~ 10000μF
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C
Leakage Current 漏電流	Leakage current ≤0.03CV or 3μA, whichever is greater (after 5 minutes application of rated voltage at 20°C) 漏電流 ≤0.03CV 或 3μA，取較大值（在 20°C 環境中施加額定工作電壓 5 分鐘後） C: Nominal capacitance (μF) 標稱靜電容量, V: Rated voltage (V) 額定電壓
Dissipation Factor (tan δ) 損耗角正切	When nominal capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF. 當標稱靜電容量大於 1000μF，其標稱靜電容量每增加 1000μF，損耗角正切增加 0.02。 Measurement frequency 測試頻率: 120Hz, Temperature 温度: 20°C

Rated Voltage (V) 額定工作電壓	6.3	10	16	25	35	50~100	160	200~250
tan δ (max.) 最大損耗角正切	0.25	0.23	0.20	0.15	0.15	0.12	0.15	0.20

Stability at Low Temperature 低溫特性

Measurement frequency 測試頻率: 120Hz

Rated Voltage (V) 額定工作電壓		6.3	10	16	25~100	160~250
Impedance Ratio 阻抗比	Z(-25°C) / Z(+20°C)	4	3	2	2	3
	Z(-40°C) / Z(+20°C)	10	8	6	4	5

Endurance 耐久性

When the capacitors are restored to 20°C after 2000 hours application of the rated voltage at 85°C, they meet the characteristics listed below.
在 85°C 環境中施加額定工作電壓 2000 小時後，待電容器恢復至 20°C 時進行測量，電容器的特性符合下表要求。

Capacitance Change 靜電容量變化率	Within ±20% of initial measured value 初始值的±20%以內
Dissipation Factor 損耗角正切	≤200% of initial specified value 不大於規範值的 200%
Leakage Current 漏電流	≤initial specified value 不大於規範值

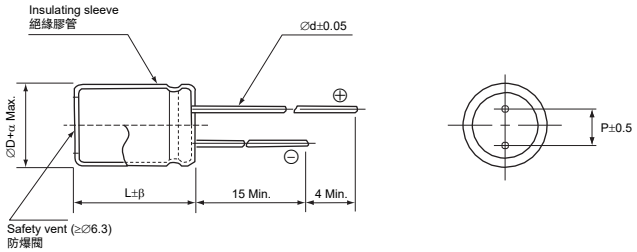
Shelf Life 高溫貯存特性

When the capacitors are restored to 20°C after leaving under no load at 85°C for 1000 hours, they meet the specified value for endurance characteristics listed above.
在 85°C 環境中無負荷放置 1000 小時後，待電容器恢復至 20°C 時進行測量，電容器的特性符合耐久性特性中所列的規定值。

Marking 標識

Printed with white colour on black sleeve (PVC) or printed with white colour on green sleeve (PET).
黑色膠管白字印刷（PVC）或綠色膠管白字印刷（PET）。

☐ DRAWING & DIMENSIONS 外形圖及尺寸 (Unit: mm)



∅D	5	6.3	8 (L≤11.5)	8 (L>16)	10	13	16	18	22	25
P	2.0	2.5	3.5		5.0		7.5		10.0	12.5
∅d	0.5			0.6			0.8			
β	1.5				2.0					
α	0.5								1.0	

☐ FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT 紋波電流頻率補償系數

Frequency 頻率		50Hz	120Hz	300Hz	1kHz	10kHz~
Coefficient 系數	0.1 ~47μF	0.75	1.00	1.35	1.55	2.0
	68 ~680μF	0.80	1.00	1.25	1.34	1.5
	1000 ~10000μF	0.85	1.00	1.10	1.13	1.15

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5~10°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced. 鋁電解電容器在疊加紋波電流後會引起發熱，溫度每上升 5~10°C 壽命會減半。若要保持長壽命性能，請在使用過程中適當降低紋波電流。

Note: All design and specifications are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.
注：以上所提供的設計及特性參數僅供參考，任何修改不作預先通知。如果在使用上有疑問，請在採購前與我們聯繫，以便提供技術上的協助。

CAT.2026/V2.1

NP Series

☐ DIMENSIONS & STANDARD RATINGS 規格尺寸及標準參數

WV / Code 代碼 / μF		6.3		10		16		25		35		50		63	
		0J		1A		1C		1E		1V		1H		1J	
0.47	R47											5 x 11	12	5 x 11	12
0.68	R68											5 x 11	14	5 x 11	14
1	010											5 x 11	18	5 x 11	18
1.5	1R5											5 x 11	21	5 x 11	21
2.2	2R2											5 x 11	26	5 x 11	26
3.3	3R3											5 x 11	32	5 x 11	32
4.7	4R7											5 x 11	38	5 x 11	38
6.8	6R8											5 x 11	46	5 x 11	46
10	100											5 x 11	55	6.3 x 11.5	64
15	150									5 x 11	61	6.3 x 11.5	78	6.3 x 11.5	78
22	220							5 x 11	73	6.3 x 11.5	84	6.3 x 11.5	94	8 x 11.5	111
33	330					5 x 11	78	6.3 x 11.5	103	6.3 x 11.5	103	8 x 11.5	136	10 x 12	158
47	470			5 x 11	87	5 x 11 (6.3 x 11.5)	92 (107)	6.3 x 11.5	123	8 x 11.5	145	10 x 12	189	10 x 16	207
68	680	5 x 11	100	6.3 x 11.5	120	6.3 x 11.5	129	8 x 11.5	175	10 x 12	203	10 x 16	249	10 x 20	272
100	101	6.3 x 11.5	139	6.3 x 11.5	145	8 x 11.5	184	10 x 12	247	10 x 16	270	10 x 20	329	10 x 20	329
150	151	6.3 x 11.5	171	8 x 11.5	210	10 x 12	262	10 x 12 (10 x 16)	300 (331)	10 x 20	361	10 x 20	404	13 x 21	474
220	221	8 x 11.5	244	10 x 12	295	10 x 16	347	10 x 12 (10 x 20)	310 (437)	10 x 20	437	13 x 21	574	13 x 25	625
330	331	10 x 12	347	10 x 16	396	10 x 20	464	10 x 20	535	13 x 21	628	16 x 25	850	16 x 25	850
470	471	10 x 16	454	10 x 20	516	10 x 20	553	13 x 21	750	13 x 21	818	16 x 31	1110	16 x 35	1164
680	681	10 x 20	595	13 x 21	729	13 x 21	781	13 x 25	984	16 x 25	1091	18 x 35	1503	18 x 40	1577
1000	102	13 x 21	847	13 x 21	883	13 x 25	1033	16 x 25	1323	16 x 35	1519	18 x 40	1912	22 x 40	2105
1500	152	13 x 21	999	13 x 25	1132	16 x 25	1338	16 x 35	1748	18 x 40	1968	22 x 40	2368	25 x 40	2607
2200	222	13 x 25	1272	16 x 25	1463	16 x 35	1781	18 x 40	2254	22 x 40	2481	25 x 50	3221		
3300	332	16 x 25	1672	16 x 35	1985	18 x 40	2890	22 x 40	2890	25 x 40	3157				
4700	472	16 x 35	2221	18 x 40	2579	22 x 40	2987	25 x 50	3927						
6800	682	18 x 40	2840	22 x 40	3214	25 x 50	4004								
10000	103	22 x 40	3516	25 x 50	4290										

WV / Code 代碼 / μF		100		160		200		250	
		2A		2C		2D		2E	
0.47	R47	5 x 11	12						
0.68	R68	5 x 11	14						
1	010	5 x 11	18						
1.5	1R5	5 x 11	21						
2.2	2R2	5 x 11	26						
3.3	3R3	5 x 11	32	8 x 11.5	49	8 x 11.5	42	10 x 12	46
4.7	4R7	6.3 x 11.5	44	8 x 11.5	59	10 x 12	55	10 x 12	65
6.8	6R8	8 x 11.5	62	10 x 20	77	13 x 21	78	13 x 21	78
10	100	8 x 11.5 (8 x 16)	75 (80)	13 x 21	109	13 x 21	95	13 x 25	103
15	150	10 x 12	107	13 x 21	134	13 x 25	127	16 x 25	140
22	220	10 x 12 (10 x 16)	130 (142)	13 x 25	177	16 x 25	170	16 x 31	186
33	330	10 x 20	189	16 x 25	240	16 x 35	239	18 x 35	256
47	470	13 x 21	265	16 x 35	329	18 x 40	321		
68	680	13 x 25	348	18 x 35	425				
100	101	16 x 25	468						
150	151	16 x 25	573						
220	221	16 x 35	797						
330	331	18 x 40	1098						
470	471	22 x 40	1443					Case size 尺寸	Ripple current 紋波電流
680	681	25 x 40	1896						

•Case size ∅D×L(mm), ripple current (mA rms) at 85°C, 120Hz •尺寸∅D×L(mm)，紋波電流(mA rms)於 85°C, 120Hz

- Please refer to page 21 “Taping Specifications” & page 23 “Lead Forming & Cutting” about the taped or formed product spec. 編帶與引線成型標準請查閱第 21 頁“編帶標準”及第 23 頁“引線成型與剪腳”。
- Please refer to page 22 “Packaging Specifications” for the minimum package quantity. 最小包裝數量請查閱第 22 頁“包裝標準”。
- Please refer to page 18 for the Part Number System. 產品編碼規則請查閱第 18 頁。

Note: All design and specifications are for reference only and is subject to change without prior notice. If any doubt about safety for your application, please contact us immediately for technical assistance before purchase.
注：以上所提供的設計及特性參數僅供參考，任何修改不作預先通知。如果在使用上有疑問，請在採購前與我們聯繫，以便提供技術上的協助。