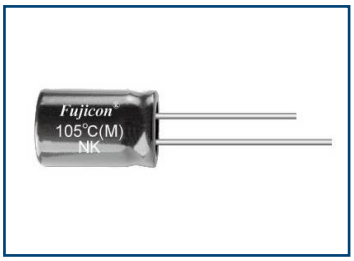
NK Series

NON-POLARIZED, WIDE TEMPERATURE RANGE

無極性寬溫品



NP
Non-polarized

- Wide operating temperature range of -40~+105°C
  適用於-40~+105°C 的寬溫範圍
- Designed for use in circuits with reversing polarity
  適用於極性變換電路
- 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 工作温度範圍	-40 ~ +105°C
Voltage Range 額定工作電壓範圍	6.3 ~ 100V
Capacitance Range 靜電容量範圍	0.1 ~ 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
tan δ (max.) 最大損耗角正切	0.24	0.20	0.16	0.16	0.14	0.12

Stability at Low Temperature
低温特性

Measurement frequency 測試頻率: 120Hz

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

Endurance
耐久性

When the capacitors are restored to 20°C after 1000 hours application of the rated voltage at 105°C, they meet the characteristics listed below.
在 105°C 環境中施加額定工作電壓 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

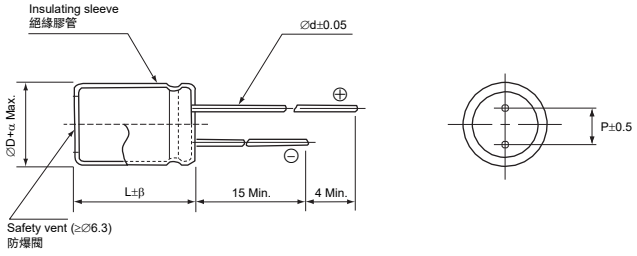
Shelf Life
高温貯存特性

When the capacitors are restored to 20°C after leaving under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above.
在 105°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)



ØD	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
Ød	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	2.00
	68 ~ 680μF	0.80	1.00	1.25	1.34	1.50
	1000 ~ 6800μF	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，温度每上升 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

NK 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		100	
		0J		1A		1C		1E		1V		1H		1J		2A	
0.1	0R1											5 x 11	3.6	5 x 11	3.9	5 x 11	4.2
0.15	R15											5 x 11	4.4	5 x 11	4.8	5 x 11	5.1
0.22	R22											5 x 11	5.3	5 x 11	5.8	5 x 11	6.2
0.33	R33											5 x 11	6.5	5 x 11	7.2	5 x 11	7.5
0.47	R47											5 x 11	7.8	5 x 11	8.5	5 x 11	9.2
0.68	R68											5 x 11	9.4	5 x 11	10	5 x 11	11
1	010											5 x 11	11	5 x 11	12	5 x 11	13
1.5	1R5											5 x 11	14	5 x 11	15	5 x 11	16
2.2	2R2											5 x 11	17	5 x 11	18	5 x 11	19
3.3	3R3											5 x 11	21	5 x 11	23	6.3 x 11.5	27
4.7	4R7									5 x 11	23	5 x 11	25	6.3 x 11.5	31	8 x 11.5	39
6.8	6R8							5 x 11	26	5 x 11	27	6.3 x 11.5	34	6.3 x 11.5	37	10 x 12	54
10	100					5 x 11	31	5 x 11	31	6.3 x 11.5	38	6.3 x 11.5	41	6.3 x 11.5	53	10 x 12	65
15	150			5 x 11	34	5 x 11	38	6.3 x 11.5	44	8 x 11.5	55	8 x 11.5	60	10 x 12	76	10 x 16	88
22	220	5 x 11	38	5 x 11	41	6.3 x 11.5	53	8 x 11.5	63	8 x 11.5	67	8 x 11.5	84	10 x 16	101		
33	330	5 x 11	46	6.3 x 11.5	58	8 x 11.5	77	8 x 11.5	77	10 x 12	95	10 x 16	113	10 x 16	124		
47	470	6.3 x 11.5	63	6.3 x 11.5	69	8 x 11.5	92	10 x 12	106	10 x 16	125	10 x 20	147	10 x 20	161		
68	680	6.3 x 11.5	76	8 x 11.5	98	10 x 12	128	10 x 16	140	10 x 20	164	10 x 20	177	13 x 21	227		
100	101	8 x 11.5	109	10 x 12	139	10 x 16	170	10 x 20	185	10 x 20	198	13 x 21	251	13 x 25	300		
150	151	10 x 12	155	10 x 16	186	10 x 20	227	13 x 21	267	13 x 21	285	13 x 25	336	16 x 25	408		
220	221	10 x 12	188	10 x 20	246	13 x 21	323	13 x 21	323	13 x 25	376	16 x 25	451	16 x 35	567		
330	331	10 x 16	252	13 x 21	354	13 x 21	396	13 x 25	431	16 x 25	511	16 x 35	634	18 x 35	745		
470	471	10 x 20	328	13 x 21	422	13 x 25	515	16 x 25	571	16 x 35	701	18 x 35	812	18 x 40	933		
680	681	13 x 21	464	13 x 25	554	16 x 25	687	16 x 35	788	18 x 35	904	18 x 40	1025	22 x 40	1236		
1000	102	13 x 25	613	16 x 25	745	16 x 35	956	18 x 35	1026	18 x 40	1151	22 x 40	1368	25 x 40	1637		
1500	152	16 x 25	800	16 x 35	999	18 x 35	1184	18 x 40	1243	22 x 40	1451	25 x 40	1694				
2200	222	16 x 35	1072	18 x 35	1242	18 x 40	1428	22 x 40	1572	25 x 50	1974						
3300	332	18 x 35	1361	18 x 40	1534	22 x 40	1835	25 x 40	2005								
4700	472	18 x 40	1650	22 x 40	1942	25 x 50	2498										
6800	682	18 x 35	2060	25 x 50	2603											Case size 尺寸	Ripple current 紋波電流
10000	103	25 x 50	2755														

•Case size ∅D×L(mm), ripple current (mA rms) at 105°C, 120Hz •尺寸∅D×L(mm)，紋波電流(mA rms)於 105°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。

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