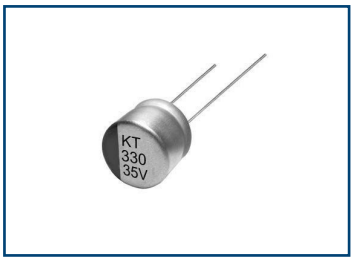
KT Series

SLEEVELESS, WIDE TEMPERATURE

無膠管，寬溫品



- Operating with wide temperature range -55(-40/-25)~+105°C
  適用於-55(-40/-25)~+105°C 的寬溫範圍
- Endurance 2000 hours
  耐久性 2000 小時
- Sleeveless
  無膠管
- RoHS & REACH compliant, Halogen-free
  符合 RoHS 與 REACH，無鹵

RK → Lower Temperature Range 工作溫度低溫化 → KT

☐ SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性		
Category Temperature Range 工作溫度範圍	-55 ~ +105°C	-40 ~ +105°C	-25 ~ +105°C
Voltage Range 額定工作電壓範圍	4 ~ 100V	160 ~ 400V	450V
Capacitance Range 靜電容量範圍	0.1 ~ 8200μF	3.3 ~100μF	3.3 ~ 33μF
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C		

Leakage Current 漏電流

Rated Voltage 額定工作電壓	6.3 ~ 100V		160 ~ 450V
Case size 尺寸	∅4~∅10	∅12.5~∅18	∅6.3~∅18
Time 時間	After 2 min. application of rated voltage at 20°C 在 20°C 環境中施加額定工作電壓 2 分鐘後	After 1 min. application of rated voltage at 20°C 在 20°C 環境中施加額定工作電壓 1 分鐘後	After 5 min. application of rated voltage at 20°C 在 20°C 環境中施加額定工作電壓 5 分鐘後
Leakage current 漏電流	≤0.01CV or 3μA, whichever is greater ≤0.01CV 或 3μA，取較大值	≤0.03CV or 4μA, whichever is greater ≤0.03CV 或 4μA，取較大值	≤0.04CV+100μA, whichever is greater ≤0.04CV+100μA，取較大值

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

Measurement frequency 測試頻率: 120Hz, Temperature 温度: 20°C

Rated Voltage (V) 額定工作電壓		4	6.3	10	16	25	35	50	63	100	160~250	350~450
tan δ (max.) 最大損耗角正切	∅4~∅10	0.42	0.30	0.26	0.22	0.16	0.14	0.12	0.10	0.10	0.20	0.25
	∅12.5~∅18	0.45	0.38	0.34	0.30	0.26	0.22	0.18	0.14	0.10	0.20	0.25

Stability at Low Temperature 低溫特性

Measurement frequency 測試頻率: 120Hz

Rated Voltage (V) 額定工作電壓			4	6.3	10	16	25	35	50~63	100	160~250	350~450
Impedance Ratio 阻抗比 ZT/Z20 (max.)	∅4~∅10	Z(-25°C)/Z(+20°C)	7	4	3	2	2	2	2	3	2	3
		Z(-55°C)/Z(+20°C)	15	8	6	4	4	3	3	4	3	6
	∅12.5~∅18	Z(-25°C)/Z(+20°C)	7	5	4	3	2	2	2	2	2	4
		Z(-55°C)/Z(+20°C)	17	12	10	8	5	4	3	3	6	10

Endurance 耐久性

When the capacitors are restored to 20°C after 2000 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 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 value for capacitors of 10V or more (Within ±30% of initial value for capacitors of 4V or less) ≥10V 為初始值的±20%以內（≤4V 為初始值的±30%以內）
Dissipation Factor 損耗角正切	200% or less of initial specified value 不大於規範值的 200%
Leakage Current 漏電流	initial specified value or less 不大於規範值

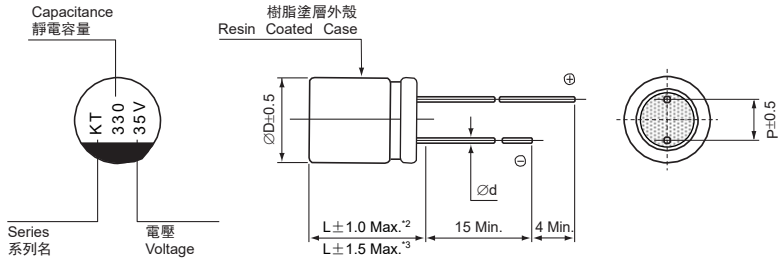
Shelf Life 高溫貯存特性

When the capacitors are restored to 20°C after leaving under no load at 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

Black print on the case top. 鋁殼頂部黑字印刷。

☐ DRAWING 外形圖 (Unit: mm)



*1. Voltage mark for 6.3V is [6V]
*2. Applicable to ∅∅4~∅8
*3. Applicable to ∅10 and above

6.3V 的產品標識為 [6V]
適用於∅4~∅8
適用於∅10 和∅10 以上

Dimension table in next page.
尺寸表見下一頁。

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KT Series

☐ DIMENSIONS (Unit: mm) 尺寸表

ØD x L	4 x 5	5 x 5	6.3 x 5/7	8 x 5/10	10 x 10/13	12.5 x 13/16	16 x 16	18 x 16/18
P	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5
Ød	0.45	0.45	0.45	0.5	0.6	0.6	0.8	0.8
L	5.0	5.0	5.0/7.0	5.0/10.0	10.0/13.0	13.0/16.0	16.0	16.0/18.0

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

WV / Code 代碼 / μF		4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7							4 × 5	13	4 × 5	17
10	100							4 × 5	20	5 × 5 (4 × 5)	23 (20)
22	220	4 × 5	20	4 × 5	23	5 × 5 (4 × 5)	29 (22)	5 × 5 (4 × 5)	32 (25)	6.3 × 5 (5 × 5)	39 (32)
33	330	5 × 5 (4 × 5)	30 (25)	5 × 5 (4 × 5)	34 (30)	5 × 5 (4 × 5)	35 (30)	6.3 × 5 (5 × 5)	45 (35)	6.3 × 5 (5 × 5)	48 (35)
47	470	5 × 5 (4 × 5)	36 (30)	5 × 5 (4 × 5)	38 (35)	5 × 5	38	6.3 × 5 (5 × 5)	55 (40)	6.3 × 5	60
100	101	6.3 × 5 (5 × 5)	64 (54)	6.3 × 5 (5 × 5)	69 (59)	6.3 × 5 (5 × 5)	80 (60)	6.3 × 5	80	6.3 × 7 (6.3 × 5) (8 × 5)	100 (80) (130)
150	151	6.3 × 5	80	6.3 × 5	85	6.3 × 5	85	6.3 × 7	105	8 × 10 (6.3 × 7)	240 (120)
220	221	6.3 × 5	90	6.3 × 7 (6.3 × 5)	120 (95)	6.3 × 7 (6.3 × 5)	120 (95)	8 × 10 (6.3 × 7)	270 (120)	8 × 10	270
330	331	6.3 × 7	120	6.3 × 7	120	8 × 10 (6.3 × 7)	290 (135)	8 × 10	290	10 × 10 (8 × 10)	380 (290)
470	471	6.3 × 7	120	8 × 10 (6.3 × 7)	320 (120)	10 × 10 (8 × 10)	380 (320)	10 × 10 (8 × 10)	380 (290)	10 × 10	380
680	681	8 × 10	320	8 × 10	350	10 × 10 (8 × 10)	380 (350)	10 × 10	380	10 × 13	400
1000	102	8 × 10	320	10 × 10 (8 × 10)	410 (350)	10 × 10	410	12.5 × 13 (10 × 13) (10 × 10)	550 (460) (410)	12.5 × 13	580
1500	152	10 × 10	410	10 × 13 (10 × 10)	450 (410)	10 × 13	460	12.5 × 13	550	12.5 × 16	850
2200	222	10 × 13 (10 × 10)	440 (410)	12.5 × 13 (10 × 13)	680 (560)	12.5 × 13	680	16 × 16 (12.5 × 16)	900 (750)	16 × 16	1050
3300	332	10 × 13	490	12.5 × 16 (12.5 × 13)	850 (810)	16 × 16	1000	16 × 16	1000	18 × 16	1150
4700	472	12.5 × 13	600	16 × 16	1000	16 × 16	1000	18 × 16	1225	18 × 18	1300
6800	682	16 × 16 (12.5 × 16)	950 (650)	18 × 16	1290	18 × 16	1290			Case size 尺寸	Ripple current 紋波電流
8200	822			18 × 18	1450	18 × 18	1450				

WV / Code 代碼 / μF		35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4 × 5	2	4 × 5	2		
0.22	R22			4 × 5	4	4 × 5	4		
0.33	R33			4 × 5	4	4 × 5	4		
0.47	R47			4 × 5	5	4 × 5	5		
1	010			4 × 5	8	4 × 5	8	4 × 5	8
2.2	2R2			4 × 5	12	4 × 5	12	6.3 × 5 (5 × 5)	14 (12)
3.3	3R3	4 × 5	13	4 × 5	14	5 × 5	17	6.3 × 7 (6.3 × 5)	55 (20)
4.7	4R7	4 × 5	17	5 × 5 (4 × 5)	20 (14)	5 × 5	20	6.3 × 7 (6.3 × 5)	50 (21)
10	100	5 × 5 (4 × 5)	27 (18)	6.3 × 5 (5 × 5)	32 (27)	6.3 × 7 (6.3 × 5)	58 (32)	8 × 10 (8 × 5) (6.3 × 7)	77 (55) (58)
22	220	6.3 × 5 (5 × 5)	44 (36)	6.3 × 7 (6.3 × 5)	58 (44)	8 × 10 (6.3 × 7)	100 (58)	10 × 10 (8 × 10)	126 (100)
33	330	6.3 × 5	50	6.3 × 7	65	8 × 10	140	10 × 10	150
47	470	6.3 × 7 (6.3 × 5)	80 (58)	8 × 10 (6.3 × 7)	170 (70)	10 × 10 (8 × 10)	160 (170)	12.5 × 13 (10 × 13) (10 × 10)	250 (180) (160)
68	680					Case size 尺寸	Ripple current 紋波電流	12.5 × 13 (10 × 13)	300 (180)

•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

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CAT.2026/V2.1

KT Series

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

WV / Code 代碼 / μF		35		50		63		100		160	
		1V		1H		1J		2A		2C	
22	220									10 × 13	50
33	330									12.5 × 13	95
47	470							10 × 10	160	12.5 × 13 (16 × 16)	205 (240)
100	101	8 × 10 (6.3 × 7)	240 (92)	10 × 10 (8 × 10)	250 (210)	12.5 × 13 (10 × 13) (10 × 10)	400 (350) (310)	16 × 16 (12.5 × 13)	450 (380)	16 × 16	250
150	151	8 × 10	240	10 × 10	300	10 × 13	350				
220	221	10 × 10 (8 × 10)	270 (250)	10 × 13 (10 × 10)	330 (280)	16 × 16 (12.5 × 13)	560 (470)	16 × 16	550		
330	331	10 × 10	370	16 × 16 (12.5 × 13) (10 × 13)	600 (490) (295)	16 × 16 (12.5 × 16)	700 (510)	18 × 16	590		
470	471	12.5 × 13 (10 × 13) (10 × 10)	520 (400) (370)	16 × 16 (12.5 × 16) (12.5 × 13)	700 (550) (470)	16 × 16	750	18 × 18	980		
680	681	12.5 × 13	530	16 × 16	750	18 × 16	790				
1000	102	16 × 16 (12.5 × 16)	800 (600)	18 × 16	990						
1500	152	16 × 16	750							Case size 尺寸	Ripple current 紋波電流
2200	222	18 × 16	1050								

WV / Code 代碼 / μF		200		250		350		400		450	
		2D		2E		2V		2G		2W	
3.3	3R3							10 × 13 (8 × 10)	40 (35)	10 × 13 (8 × 12)	40 (38)
4.7	4R7			10 × 13	65	10 × 13	45	10 × 13 (12.5 × 13)	45 (48)	10 × 13 (12.5 × 13)	42 45
10	100	10 × 13	75	10 × 13	70	12.5 × 13	50	12.5 × 13	50	12.5 × 13	70
22	220	12.5 × 13	105	12.5 × 13	105	16 × 16	85	16 × 16	85	16 × 16	85
33	330	12.5 × 13	120	16 × 16	180	18 × 16	100	18 × 16	100	18 × 16	100
47	470	16 × 16	220	16 × 16	220					Case size 尺寸	Ripple current 紋波電流
100	101	18 × 16	280	18 × 16	260						

•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

□ 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	Ø4 ~ Ø10	0.1 ~ 68μF	0.70	1.00	1.17	1.36	1.50
		100 ~ 3300μF	0.85	1.00	1.08	1.20	1.30
	Ø12.5 ~ Ø18	~ 68μF	0.75	1.00	1.35	1.57	2.00
		100 ~ 680μF	0.80	1.00	1.23	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，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。

- 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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