

STANDARD

標準品

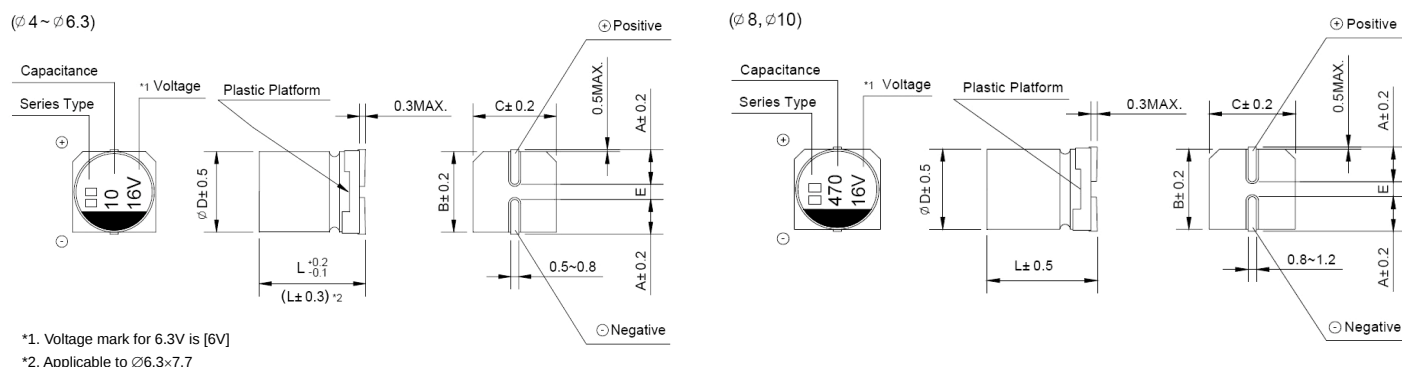
- Operating with general temperature range -40 ~ +85°C
適用於 -40 ~ +85°C 的常規溫度範圍
- Load life of 2000 hours
負荷壽命 2000 小時
- Comply with the RoHS directive
符合 RoHS 指令



SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特性							
Operation Temperature Range 使用溫度範圍	-40 ~ +85°C							
Voltage Range 額定工作電壓範圍	4 ~ 100V							
Capacitance Range 靜電容量範圍	0.1 ~ 3300μF							
Capacitance Tolerance 靜電容量允許偏差	±20% at 120Hz, 20°C							
Leakage Current 漏電流	Leakage current 0.01CV or 3μA, whichever is greater (after 2 minutes application of rated voltage) 漏電流 0.01CV 或 3μA，取較大值（施加額定工作電壓 2 分鐘後）							
Dissipation Factor (tan δ) 損耗角正切	Measurement frequency 測試頻率: 120Hz, Temperature 溫度: 20°C							
	Rated Voltage (V) 額定工作電壓	4	6.3	10	16	25	35, 50	63, 100
	tan δ (max.) 最大損耗角正切	0.35	0.26	0.20	0.16	0.14	0.12	0.10
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	35~100	
	Impedance Ratio 阻抗比 ZT/Z20 (max.)	Z(-25°C) / Z(20°C)	7	4	3	2	2	
		Z(-40°C) / Z(20°C)	15	8	6	4	3	
Load Life 高溫負荷特性	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，電容器的特性符合下表的要求。							
	Capacitance Change 靜電容量變化率		Within ±20% of initial value (Within ±30% of initial value for 4V) 初始值的±20%以內（4V 為±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	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在 85°C 環境中無負荷放置 1000 小時後，電容器的特性符合高溫負荷特性中所列的規定值。							
Resistance to Soldering Heat 耐焊接熱特性	After reflow soldering and restored at room temperature, they meet the characteristics listed below. 經過回流焊並冷卻至室溫後，電容器的特性符合下表的要求。							
	Capacitance Change 靜電容量變化率		Within ±10% of initial value 初始值的±10%以內					
	Dissipation Factor 損耗角正切		initial specified value or less 不大於規範值					
	Leakage Current 漏電流		initial specified value or less 不大於規範值					
Marking 標示	Black print on the case top. 鋁殼頂部黑字印刷。							

DRAWING (Unit: mm) 外形圖



DIMENSIONS (Unit: mm) 尺寸表

ØD x L	4 x 5.4	5 x 5.4	6.3 x 5.4	6.3 x 7.7	8 x 6.2	8 x 10.5	10 x 10.5	10 x 13.5
A	1.8	2.1	2.4	2.4	3.3	2.9	3.2	3.2
B	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3
C	4.3	5.3	6.6	6.6	8.3	8.3	10.3	10.3
E ± 0.2	1.0	1.3	2.2	2.2	2.2	3.1	4.4	4.4
L	5.4	5.4	5.4	7.7	6.2	10.5	10.5	13.5

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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。

□ DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT 規格尺寸及最大允許紋波電流

WV Code 代碼 μF		4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7									4 × 5.4	19
10	100							4 × 5.4	25	5 × 5.4 (4 × 5.4)	28 (20)
15	150							4 × 5.4	28	5 × 5.4	34
22	220			4 × 5.4	31	5 × 5.4 (4 × 5.4)	35 (28)	5 × 5.4 (4 × 5.4)	39 (28)	6.3 × 5.4 (5 × 5.4)	52 (35)
33	330	4 × 5.4	26	5 × 5.4 (4 × 5.4)	39 (31)	5 × 5.4 (4 × 5.4)	43 (32)	6.3 × 5.4 (5 × 5.4)	57 (40)	6.3 × 5.4 (5 × 5.4)	63 (42)
47	470	4 × 5.4	34	5 × 5.4 (4 × 5.4)	47 (36)	6.3 × 5.4 (5 × 5.4)	59 (43)	6.3 × 5.4 (5 × 5.4)	68 (44)	6.3 × 5.4	68
56	560	4 × 5.4	39	5 × 5.4	46	6.3 × 5.4	57	6.3 × 5.4	74	6.3 × 5.4	82
68	680	5 × 5.4	45	6.3 × 5.4 (5 × 5.4)	62 (52)	6.3 × 5.4	72	6.3 × 5.4	80	6.3 × 5.4	94
100	101	5 × 5.4	61	6.3 × 5.4 (5 × 5.4)	71 (55)	6.3 × 5.4	76	6.3 × 5.4 (8 × 6.2)	86 (200)	6.3 × 7.7 (8 × 6.2)	130 (91)
150	151	6.3 × 5.4	74	6.3 × 5.4	78	6.3 × 5.4	88	6.3 × 7.7	135	8 × 10.5 (6.3 × 7.7)	200 (130)
220	221	6.3 × 5.4	82	6.3 × 5.4	95	6.3 × 7.7 (8 × 6.2)	150 (250)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	215 (150) (135)	8 × 10.5	250
330	331	6.3 × 7.7	150	6.3 × 7.7 (8 × 6.2)	150 (300)	8 × 10.5	280	8 × 10.5	280	10 × 10.5 (8 × 10.5)	340 (310)
470	471	6.3 × 7.7	150	8 × 10.5 (6.3 × 7.7)	300 (150)	10 × 10.5 (8 × 10.5)	320 (300)	10 × 10.5 (8 × 10.5)	420 (330)	10 × 10.5	400
680	681	8 × 10.5	300	8 × 10.5	300	10 × 10.5	380	10 × 10.5	450	10 × 13.5	550
1000	102	8 × 10.5	330	10 × 10.5 (8 × 10.5)	430 (330)	10 × 10.5	450				
1500	152	10 × 10.5	450	10 × 13.5 (10 × 10.5)	650 (450)	10 × 13.5	650				
2200	222	10 × 13.5 (10 × 10.5)	620 (480)							Case size 尺寸	Ripple current 紋波電流
3300	332	10 × 13.5	700								

WV Code 代碼 μF		35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4 × 5.4	1.0	4 × 5.4	1.0		
0.22	R22			4 × 5.4	2.3	4 × 5.4	2.3		
0.33	R33			4 × 5.4	3.5	4 × 5.4	3.5		
0.47	R47			4 × 5.4	5.0	4 × 5.4	5.0		
1	010			4 × 5.4	10	4 × 5.4	10	4 × 5.4	10
1.5	1R5			4 × 5.4	12	4 × 5.4	12	6.3 × 5.4	15
2.2	2R2			4 × 5.4	15	4 × 5.4	15	6.3 × 5.4	20
3.3	3R3	4 × 5.4	18	4 × 5.4	18	5 × 5.4	20	6.3 × 7.7 (6.3 × 5.4) (8 × 6.2)	45 (28) (50)
4.7	4R7	4 × 5.4	20	5 × 5.4 (4 × 5.4)	23 (19)	6.3 × 5.4 (5 × 5.4)	30 (23)	6.3 × 7.7 (6.3 × 5.4) (8 × 6.2)	50 (30) (50)
10	100	5 × 5.4 (4 × 5.4)	30 (20)	6.3 × 5.4 (5 × 5.4)	34 (27)	6.3 × 7.7 (6.3 × 5.4)	55 (34)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	110 (50) (50)
22	220	6.3 × 5.4	54	6.3 × 5.4 (8 × 6.2)	60 (120)	8 × 10.5 (6.3 × 7.7) (8 × 6.2)	140 (70) (35)	10 × 10.5 (8 × 10.5)	180 (120)
33	330	6.3 × 5.4 (8 × 6.2)	60 (130)	6.3 × 7.7 (8 × 6.2)	85 (65)	8 × 10.5 (6.3 × 7.7)	160 (85)	10 × 10.5	190
47	470	6.3 × 5.4 (8 × 6.2)	70 (165)	10 × 10.5 (8 × 10.5) (6.3 × 7.7)	130 (110) (90)	10 × 10.5 (8 × 10.5)	230 (170)		
56	560	6.3 × 7.7	80	6.3 × 7.7	110	10 × 10.5	250		
68	680	6.3 × 7.7	110	8 × 10.5	170	10 × 10.5	260		
100	101	8 × 10.5 (6.3 × 7.7)	175 (120)	10 × 10.5 (8 × 10.5)	240 (200)				
150	151	8 × 10.5	220	10 × 10.5	240	10 × 13.5	310		
220	221	10 × 10.5 (8 × 10.5)	310 (270)	10 × 13.5 (10 × 10.5)	400 (320)			Case size 尺寸	Ripple current 紋波電流
330	331	10 × 10.5	350						

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

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