

Standard product

标准品

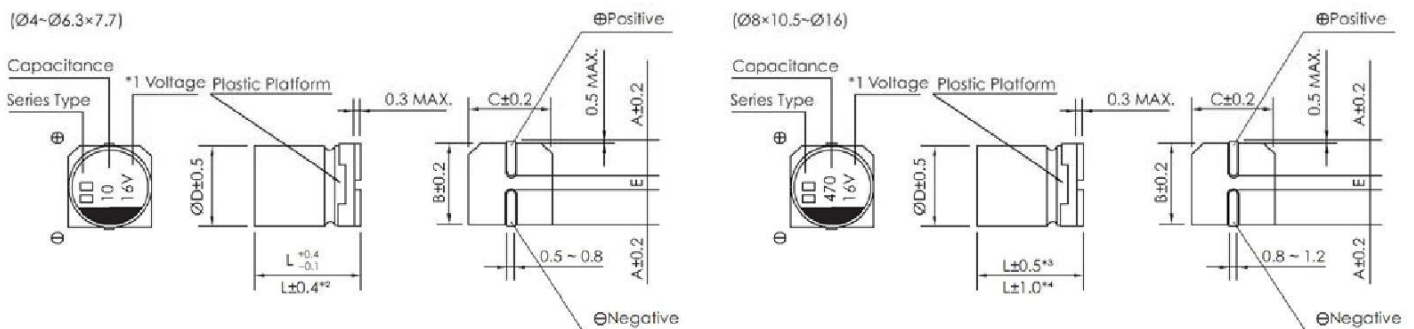
Operating with wide temperature range -40~+105°C
 適用於 -40~+105°C 的寬溫範圍
 Load life of 2000 hours
 負荷壽命 2000 小時
 Comply with the RoHS directive
 符合 RoHS 指令



SPECIFICATIONS 特性表

Items 項目	Characteristics 主要特												
Operation Temperature Range 使用溫度範圍	-40 ~ +105°C												
Voltage Range 額定工作電壓範圍	4 ~ 100V												
Capacitance Range 靜電容量範圍	0.1 ~ 6800μF												
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~ 16	6.3~ 16									
	Time 時間	after 2 min. (application of rated voltage) 2 分鐘後 (施加額定工作電壓)	after 1 min. (application of rated voltage) 1 分鐘後 (施加額定工作電壓)	after 5 min. (application of rated voltage) 5 分鐘後 (施加額定工作電壓)									
	Leakage current 漏電流	≤0.01CV or 3μA, whichever is greater	≤0.03CV or 4μA, whichever is greater	≤0.04CV+100μA, whichever is greater									
	漏電流	≤0.01CV 或 3μA, 取較大值	≤0.03CV 或 4μA, 取較大值	≤0.04CV+100μA, 取較大值									
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	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
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	4~ 10	Z(-25°C)/Z(20°C)	7	4	3	2	2	2	2	3	2	3
			Z(-40°C)/Z(20°C)	15	8	6	4	4	3	3	4	3	6
	ZT/Z20 (max.)	12.5~ 16	Z(-25°C)/Z(20°C)	7	5	4	3	2	2	2	2	2	4
Z(-40°C)/Z(20°C)			17	12	10	8	5	4	3	3	6	10	
Load Life 高溫負荷特性	After 2000 hrs. 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, 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 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	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above. 在 105°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 標識	Black print on the case top. 鋁殼頂部黑字印刷。												

DRAWING (Unit: mm) 外形圖



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2018/V6a

DIMENSIONS (Unit: mm) 尺寸表

D x L	4 x 5.4	5 x 5.4	6.3 x 5.4	6.3 x 7.7	8 x 10.5	10 x 10.5	10 x 13.5	12.5 x 13.5	12.5 x 16	16 x 16.5
A	2.0	2.2	2.6	2.6	3.0	3.3	3.3	4.9	4.9	5.8
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
E ± 0.2	1.0	1.4	1.9	1.9	3.1	4.7	4.7	4.7	4.7	6.4
L	5.4	5.4	5.4	7.7	10.5	10.5	13.5	13.5	16.0	16.5

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

μF	WV Code 代碼	4		6.3		10		16		25	
		0G		0J		1A		1C		1E	
4.7	4R7							4 x 5.4	13	4 x 5.4	14
10	100							4 x 5.4	19	5 x 5.4 (4 x 5.4)	23 (16)
22	220	4 x 5.4	20	4 x 5.4	23	5 x 5.4 (4 x 5.4)	29 (20)	5 x 5.4 (4 x 5.4)	32 (25)	6.3 x 5.4 (5 x 5.4)	39 (32)
33	330	5 x 5.4 (4 x 5.4)	30 (25)	5 x 5.4 (4 x 5.4)	32 (30)	5 x 5.4 (4 x 5.4)	35 (22)	6.3 x 5.4 (5 x 5.4)	45 (35)	6.3 x 5.4 (5 x 5.4)	48 (35)
47	470	5 x 5.4 (4 x 5.4)	36 (30)	5 x 5.4 (4 x 5.4)	38 (35)	4*5.4 (5 x 5.4)	35 (38)	6.3 x 5.4 (5 x 5.4)	55 (40)	6.3 x 5.4	60
100	101	6.3 x 5.4 (5 x 5.4)	60 (49)	6.3 x 5.4 (5 x 5.4)	65 (54)	6.3 x 5.4 (5 x 5.4)	70 (60)	6.3 x 5.4	80	6.3 x 7.7 (6.3 x 5.4)	100 (80)
150	151	6.3 x 5.4	70	6.3 x 5.4	55	6.3 x 5.4	62	6.3 x 7.7	105	8 x 10.5 (6.3 x 7.7)	140 (120)
220	221	6.3 x 5.4	85	6.3 x 7.7 (6.3 x 5.4)	120 (95)	6.3 x 7.7 (6.3 x 5.4)	120 (95)	8 x 10.5 (6.3 x 7.7)	180 (120)	8 x 10.5	200
330	331	6.3 x 7.7	100	6.3 x 7.7	120	8 x 10.5 (6.3 x 7.7)	200 (135)	8 x 10.5	220	10 x 10.5 (8 x 10.5)	240 (250)
470	471	6.3 x 7.7	105	8 x 10.5 (6.3 x 7.7)	230 (120)	10 x 10.5 (8 x 10.5)	270 (230)	10 x 10.5 (8 x 10.5)	300 (270)	10 x 10.5	280
680	681	8 x 10.5	210	8 x 10.5	230	10 x 10.5 (8 x 10.5)	270 (220)	10 x 10.5	315	10 x 13.5	400
1000	102	8 x 10.5	230	10 x 10.5 (8 x 10.5)	340 (290)	10 x 10.5 10 x 10.5	340 315	12.5 x 13.5 (10 x 10.5)	500 (340)	12.5 x 13.5	580
1500	152	10 x 10.5	315	10 x 13.5 (10 x 10.5)	450 (410)	10 x 13.5	460	12.5 x 13.5	550	12.5 x 16	850
2200	222	10 x 13.5 (10 x 10.5)	440 (340)	12.5 x 13.5 (10 x 13.5)	620 (500)	12.5 x 13.5	680	16 x 16.5 (12.5 x 16)	950 (750)	16 x 16.5	1050
3300	332	10 x 13.5	490	12.5 x 16 (12.5 x 13.5)	700 (660)	16 x 16.5	1000	16 x 16.5	1000		
4700	472	12.5 x 13.5	600	16 x 16.5	1000					Case size 尺寸	Ripple current 紋波電流
6800	682	16 x 16.5 (12.5 x 16)	950 (650)								

μF	WV Code 代碼	35		50		63		100	
		1V		1H		1J		2A	
0.1	0R1			4 x 5.4	2	4 x 5.4	2		
0.22	R22			4 x 5.4	4	4 x 5.4	4		
0.33	R33			4 x 5.4	4	4 x 5.4	4		
0.47	R47			4 x 5.4	5	4 x 5.4	5		
1	010			4 x 5.4	8	4 x 5.4	8	4 x 5.4	8
2.2	2R2			4 x 5.4	11	4 x 5.4	11	6.3 x 5.4 (5 x 5.4)	14 (12)
3.3	3R3	4 x 5.4	13	4 x 5.4	14	5 x 5.4	14	6.3 x 7.7 (6.3 x 5.4)	32 (20)
4.7	4R7	4 x 5.4	15	5 x 5.4 (4 x 5.4)	19 (14)	5 x 5.4	19	6.3 x 7.7 (6.3 x 5.4)	35 (21)
10	100	5 x 5.4 (4 x 5.4)	25 (18)	6.3 x 5.4 (5 x 5.4)	31 (20)	6.3 x 7.7 (6.3 x 5.4)	39 (24)	8 x 10.5 (6.3 x 7.7)	77 (35)
22	220	6.3 x 5.4 (5 x 5.4)	42 (34)	6.3 x 7.7 (6.3 x 5.4)	51 (42)	8 x 10.5 (6.3 x 7.7)	98 (49)	10 x 10.5 (8 x 10.5)	126 (84)
33	330	6.3 x 5.4	50	6.3 x 7.7	60	8 x 10.5	112	10 x 10.5	133
47	470	6.3 x 7.7 (6.3 x 5.4)	78 (58)	8 x 10.5 (6.3 x 7.7)	120 (63)	10 x 10.5 (8 x 10.5)	160 (119)	12.5 x 13.5 (10 x 13.5) (10 x 10.5)	250 (160) (140)
68	680					Case size 尺寸	Ripple current 紋波電流	12.5 x 13.5 (10 x 13.5)	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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DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

規格尺寸及最大允許紋波電流

μF	WV Code 代碼	35		50		63		100			
		1V		1H		1J		2A			
22	220										
33	330										
47	470										
100	101	8 × 10.5 (6.3 × 7.7)	150 (92)	10 × 10.5 (8 × 10.5)	180 (160)	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	270 (210) (196)	16 × 16.5 (12.5 × 13.5)	450 (380)		
150	151	8 × 10.5	185	10 × 10.5	200	10 × 13.5	225				
220	221	10 × 10.5 (8 × 10.5)	250 (220)	10 × 13.5 (10 × 10.5)	280 (220)	16 × 16.5 (12.5 × 13.5)	560 (470)	16 × 16.5	550		
330	331	10 × 10.5	300	16 × 16.5 (12.5 × 13.5) (10 × 13.5)	600 (420) (295)	16 × 16.5 (12.5 × 16)	700 (510)				
470	471	12.5 × 13.5 (10 × 13.5) (10 × 10.5)	520 (375) (310)	16 × 16.5 (12.5 × 16) (12.5 × 13.5)	700 (520) (470)	16 × 16.5	750				
680	681	12.5 × 13.5	530	16 × 16.5	750						
1000	102	16 × 16.5 (12.5 × 16)	750 (600)							Case size 尺寸	Ripple current 紋波電流
1500	152	16 × 16.5	750								

☒ 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

Coefficient 系數	Frequency 頻率	50Hz	120Hz	300Hz	1KHz	10KHz~
		4 ~ 10	0.1 ~ 68μF	0.70	1.00	1.17
100 ~ 3300μF	0.85		1.00	1.08	1.20	1.30
~ 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

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